



TOWARDS SMART ZERO CO₂ CITIES ACROSS EUROPE
VITORIA-GASTEIZ + TARTU + SONDERBORG

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WP 5, Task 5.2

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Table of content:

0	Publishable Summary	8
1	The citizen engagement working group	11
2	Purpose of the citizen engagement	13
2.1.1	Administration	13
2.1.2	Organizational board	13
2.1.3	Department boards	14
2.2	Motivational factors	14
3	Segments and Target Groups	15
4	Key Actors and Roles	16
4.1	Stakeholder groups	16
4.1.1	General manager	16
4.1.2	Organizational board	17
4.1.3	Tenants/Department boards	17
4.2	Formal and informal leadership	17
5	Engagement strategies and activities	18
5.1	Step one	18
5.1.1	Final results from the workshops	19
5.2	Step two	20
5.3	Step three	21
6	Renovations	23
7	Communication activities, Materials and Channels	24
7.1	The Lighthouse Families	24
7.2	Workshops	26
7.2.1	Workshop 1: Introduction	26
7.2.2	Workshop 2: Electricity and heat	26
7.2.3	Workshop 3: Water and wastewater	27
7.2.4	Workshop 4: Waste and waste sorting	28
7.2.5	Workshop 5: Transportation	29
7.3	Challenges	29
7.4	Communication tools	31
7.4.1	ProjectZeros webpage	31



7.4.2	rojectZero newsletter.....	32
7.4.3	Myzero.dk	33
7.4.4	eLearning.....	33
7.4.5	Nudging Stickers.....	34
8	Physical and virtual meeting spaces.....	35
9	Feedback	36
10	Reflections.....	37
10.1	Lessons learned.....	37
10.2	Best practices.....	37
11	The Citizen engagement strategy – looking forward	39



Table of Pictures

Picture 1 Pictures from the citizen engagement actions.....	9
Picture 2 SAB dept. 22 installation of PV	12
Picture 3 Annual meeting with all organizational boards	14
Picture 4 Tenants meeting B42 dep. 10.....	15
Picture 5 Table of stations	18
Picture 6 Workshop with B42 vision and mission.....	19
Picture 7 Workshop B42 organizational board	20
Picture 8 Department boards meeting Soebo and SAB	21
Picture 9 game board	21
Picture 10 Inspiration catalogue	25
Picture 11 Intro meeting tenants.....	26
Picture 12 Intro meeting tenants and game board	26
Picture 13 Energy Charlie Teaching	27
Picture 14 Tenants participating at water workshop.....	28
Picture 15 Tenants participating in the waste workshop	29
Picture 16 Tadaa electric car sharing service	29
Picture 17 ProjectZero webpage	31
Picture 18 ProjectZero newsletter.....	32
Picture 19 Logon page www.myzero.dk	33
Picture 20 Webinar 31. March 2017	33
Picture 21 Nudging kit	34
Picture 22 Annual resident meeting B42.....	35
Picture 23 Roof-top integrated PV panels dept. 11 Sobo.....	38

Table of Figures

Figure 1 Abbreviations and Acronym.....	7
Figure 2 Sonderborg LH CES Model application from D2.6 Report Citizen Engagement Strategy and Deployment Plan	10
Figure 3 Organizational diagram	15
Figure 4 Table of expected energy savings for each department.....	23



Abbreviations and Acronym

Abbreviation/Acronym	Description
B42	Housing association B42
CES	Citizen Engagement Strategy
CIOP	City Information Open Platform
D	Deliverable
EUC Syd	Regional Technical College and Vocational School
H2020	Horizon 2020
Happi	EU Horizon CSA Coordination & Support Action
PV	Photo Voltaic – solarpower production technology
PZ	ProjectZero A/S
Roadmap2025	Sonderborg's Roadmap to achieve 75% accumulated carbon emissions by 2025
SAB	Sonderborg Housing association
SDU	The University of Southern Denmark
SEC	SmartEnCity project – Towards Smart Zero CO2 Cities across Europe
Roadmap2025	Sonderborg's Roadmap to achieve 75% accumulated carbon emissions by 2025
Sobo	Housing association SOEBO
SONF	Sonderborg Forsyning -local utility company
T	Task
WP	Work Package

Figure 1 Abbreviations and Acronym



0 Publishable Summary

The citizen engagement model and methodology for the SmartEnCity project was documented and published in the SEC Deliverable 2.6. It was developed at an early stage of the SmartEnCity project.

The purpose of the citizen engagement process has been to create positive support for the planned energy-efficiency improvement actions and enable the citizens to continue their own energy/climate journey beyond the scheduled energy/climate actions.

The citizen engagement strategy (CES D2.6) was named the Citizen Engagement Strategy (CES) model. The purpose of the model has been to create a methodology framework that could be used by the Lighthouse and Follower cities during the development of their own citizen engagement strategies.

The CES model is segmented into nine differentiated implication areas: Governance, Purpose, Key Actors and Roles, Citizen Engagement Strategies definition, Value Proposition, Segments and Target Groups, Communication, Spaces, and Feedback.

The Sonderborg approach to citizen engagement is based on the historic learnings from citizen engagement since 2009, where the first approach to citizen engagement (focused on private home-owner families) was created and successfully implemented. However, as the decision structures in housing associations are different; new and innovative approaches have been created and tested - first of all to secure supportive decision making for the project activities, second to support a continued citizen climate/energy-journey.

This report is based on the CES-methodology and follows the CES structure where each activity and the associated learning during the implementation process in the Sonderborg lighthouse is described.

Citizen engagement has been a key activity and a precondition for creating and realizing the associated SEC demo actions. For the housing associations, the main challenge has been creating acceptance for the retrofitting work and improving the knowledge about energy efficiency among the engaged tenants.

Citizen engagement in Sonderborg will continue as a key prioritized activity for ProjectZero – targeting all segments of tenants and beyond the house association tenants' segments. New actions will be segmented into age and type of housing-ownership. For the housing association segment, it means that approximately 9.500 families will be targeted through the H2020 Happi-project which target 1/3 of all housing association homes across all six housing associations in Sonderborg municipality. Best practices and lessons learned from SmartEnCity will be integrated in the activity-umbrella of the Happi project.





Picture 1 Pictures from the citizen engagement actions

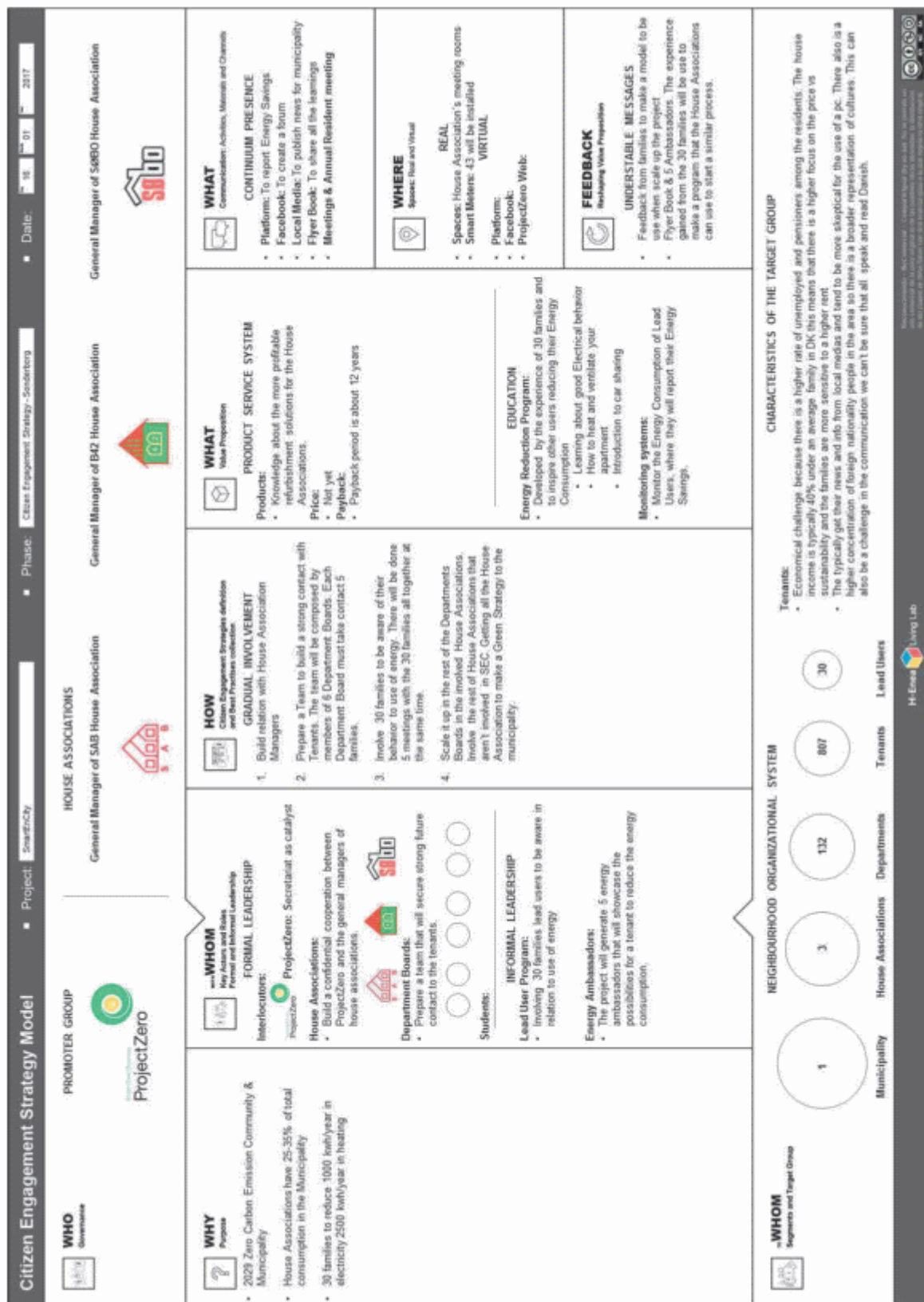


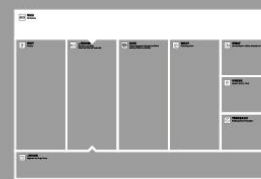
Figure 2 Sonderborg LH CES Model application from D2.6 Report Citizen Engagement Strategy and Deployment Plan





WHO

Governance



1 The citizen engagement working group

In Sonderborg the SmartEnCity (SEC) citizen engagement activities were focused on the three housing associations conducting energy retrofitting projects within the project. The local stakeholders in this process were:

- SAB
- B42
- SOBO
- ProjectZero (ZERO)



To plan and execute the citizen engagement actions, ZERO created a small team to function as a working group. The working group collaborated with relevant stakeholders throughout the actions.

Other stakeholders involved in the actions were:

- SONF (local utility company and lead partner in Sonderborg Lighthouse city): providing knowledge to the lighthouse families project.
- EUC Syd (Regional Technical College and Vocational School): developing the web platform to monitor the energy consumption.
- Energy Charlie (local energy consultant): creating energy saving tips for the lighthouse families.
- SDU (The University of Southern Denmark): developing workshops for the housing associations.

To guide the working group a SEC Advisory Board was established, the participants were selected, so that they covered the geographical area of entire Sonderborg (and not only the demo-project area), and all have network and experience within citizen engagement.

- Chairman: **Jan Mortensen** – CEO, Nordborg Housing Association
- Vice chairman: **Anne Marie Wolf**, Social worker SAB
- **Erik Lorenzen** – Member of the City Council



- **Vivian Engelbrecht** – chairman, the SAB Housing Association
- **Bendt Olesen** – former Mayor, Graasten
- **Lone Damm** – board member, the local COOP-organization
- **Poul Winther** – chairman, homeowners' Association, Sonderborg

The Advisory Board has been focused on reviewing the plans, creating new methods to improve the citizen engagement and monitor progress.



Picture 2 SAB dept. 22 installation of PV

2 Purpose of the citizen engagement



There were three goals for the citizen engagement actions:

1. Acceptance of the energy retrofitting.
2. Individual energy savings and awareness of climate changes.
3. To introduce the SEC project to the pilot areas.

To reach the goals the activities have been to engage with all levels of the housing associations, from tenants to organizational board and general manager.

To secure engagement of each level of the housing association, it is important to analyse their respective value-propositions, focused on the gains and pains by participation. This part of the process helps to get the partners in the project involved throughout the project and create acceptance for the work that had to be done.

Students from SDU conducted interviews with representatives from the housing associations to provide knowledge.

The value-proposition for the housing association administration regarding the energy renovations was learning new ways of financing PV installations that can be profitable for the tenants, as they (the administration) are obliged to provide the cheapest possible price for an apartment.

Furthermore, they can use this project, involving the lighthouse families as a catalyst to create more citizen engagement projects within their political structure as participation in the tenant's democracy is declining.

The value proposition for the organizational board, is to secure a better communication to the tenants and learnings that can lead to new citizen engagement activities.

For the organizational board, it is valuable that the department boards and tenants are well informed about energy efficiency and focusing on maintaining the buildings in each department to a high energy and comfort standard ensuring a good reputation for the entire housing association.



Picture 3 Annual meeting with all organizational boards

For the department boards, the value proposition was focused on securing more satisfied tenants and thereby avoiding empty apartments costing the department money. Furthermore, the more satisfied the tenants are, the longer they live in the apartments keeping the maintenance cost lower.

The overall motivational factor has been satisfied tenants who understand the value creation of energy retrofitting the departments.

The better the understanding of the benefits, the lower energy bills and better comfort leads to less complaints and shift of tenants.

A secondary motivator has been, that Sonderborg Municipality has as an official strategy since 2007 to become a ZEROcarbon-emission community by 2029 based on cooperation and engagement of all citizens.

3 Segments and Target Groups



The engagement strategy mapped several stakeholder groups that communication and actions were directed to. The primary target groups were:

- Pilot area tenants (department boards are a part of this group)
- Housing associations (General manager and organizational boards)

The data from the Geomatic consumer database (www.geomatic.dk) shows that the socioeconomic characteristics of the tenants in the three housing associations are very similar to one another.

There is generally a high interest for environmental issues, 78 % of the residents says they are very environmentally aware. What is important to know is that there already is a high level of waste recycling in the housing association, so the high environmental awareness is not necessarily an indicator for the will and knowledge for making change within the SEC scope.

Furthermore, there is a fiscal challenge because there is a higher rate of unemployed and pensioners among the residents. The household income is typically 40% below an average family in Denmark which leads to a higher focus on price vs. sustainability and the families are more sensitive to a higher rent.

They typically get their news and information from local media and tend to be more sceptical of the use of computers.

The concentration of people with a foreign nationality is also comparable higher in the housing associations and therefore a broader representation of cultures has to be addressed. This has meant a language barrier in some areas, especially when informing the residents of the energy retrofitting.



Picture 4 Tenants meeting B42 dep. 10

4 Key Actors and Roles



The key stakeholders identified earlier in the process:

- ProjectZero
- Housing Association administration
- Housing Association organizational board
- Housing Association department boards
- Housing Association tenants

The housing associations consist of multiple stakeholder groups, with different tasks and powers. Therefore, the first activity in the citizen engagement process was identifying the decision-making process in the housing association as illustrated below in [Figure 3](#).

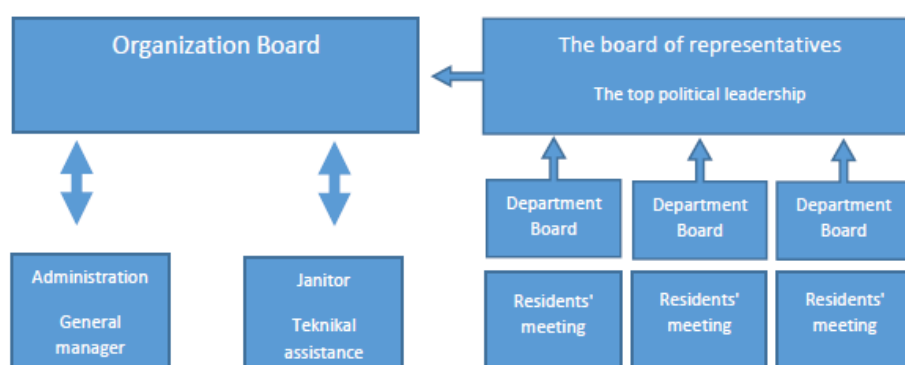


Figure 3 Organizational diagram

The tenants have the deciding vote for their own department when it comes to investing in energy efficiency projects. This means that the organizational board has no power over individual departments. A historic fact is, that the initiative for a new project often comes from the administration as a service to the departments.

The general managers of all three housing associations were involved in the actions of planning the timeline securing that the citizen engagement activities were aligned with the retrofitting projects and providing the communication channels to the rest of the housing association.

The organizational board were involved in developing the activities and participating in planning workshops. In order to get the tenants and department boards to participate in later activities it was important to get the acceptance of the actions from the organizational board.

The tenants and department boards were participating in the citizen engagement actions. The main part of the lighthouse families in the project were members of the department boards.

Some departments did not have a department board which made it more difficult to communicate with the residents. It also became challenging when the time came to recruit families for the lighthouse families.

ProjectZero has been the formal leader of the process and acted as a catalyst for the citizen engagement process. Key ProjectZero roles included:

- Facilitating the stakeholders and process.
- Identifying stakeholders in the housing association.
- Informing all partners and stakeholders about progress and plans.
- Facilitating the workshops for lighthouse families.

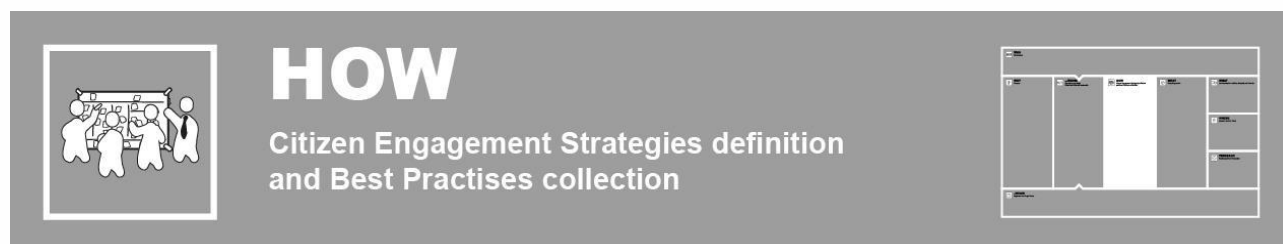
In the democratic structure of the housing association, it is easy to identify the formal leadership; but there is also an informal leadership in each department that is important to identify and address.

In most of the involved departments, some key tenants, that are not part of the department boards, are respected among the tenants and their opinion reflect on to the rest of the tenants.

In this project, the informal leaders were identified with support from the department boards and invited to participate as lighthouse families.

One of the goals of the action involving thirty families was to create thirty informal leaders among the tenants leading to higher level of acceptance of energy retrofitting projects.

5 Engagement strategies and activities



The working group together with ProjectZero developed a three-step strategy to engage the tenants.

The goal – the expected outcome.

- To build confidence between ProjectZero and the general managers and the organizational boards of the housing associations.

To establish the cooperation with, and understand the value proposition of the SEC project for the Housing associations there were developed a sequence of workshops in cooperation between the ProjectZero secretariat and students from the Southern Denmark University in Sonderborg (studying Business Innovation)

The workshops were conducted with all three housing associations. Each workshop consisted of five elements.



Picture 5 Table of stations

The five elements were:

- Vision and Mission
- Project Scaling
- Ways of communication
- Information Logging



- Open Corner

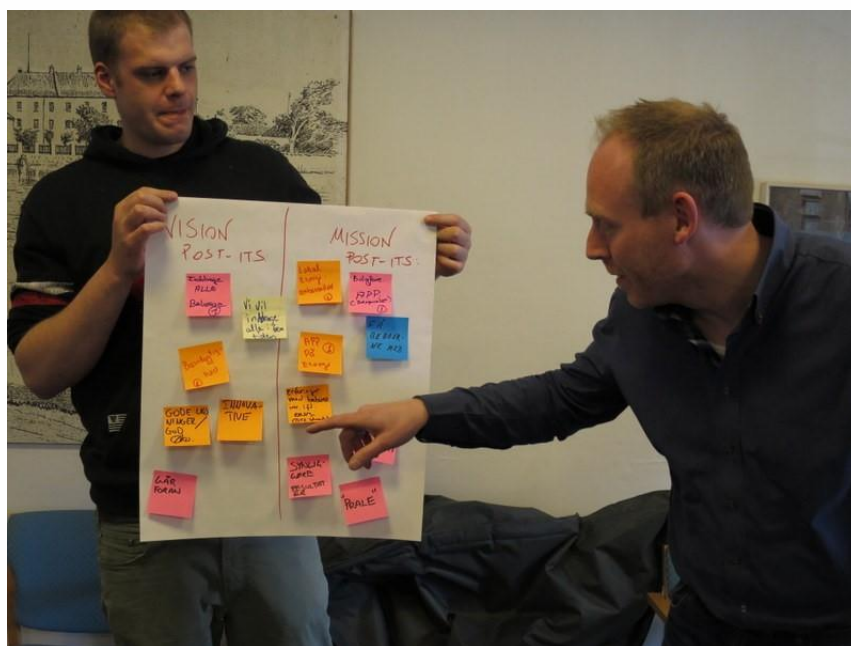
Vision and Mission

During the initial step the housing associations were asked to create a vision for the SEC actions.

When the organizational boards thought of a vision and mission statement, they continuously put themselves into the shoes of the tenants living in the housing associations. They identified areas that they would not compromise throughout this project. The ones that were chosen were chosen on the background of the vision statement core values and reads:

" We would like to be remembered for doing this in the community, and for involving everyone in the process of doing it."

This vision statement shows how the organizational boards includes not only their own need but also the needs of whom they are representing and all in all everyone who is impacted by the project.



Picture 6 Workshop with B42 vision and mission

Project Scaling

At this station the housing associations were asked to create ideas for scaling the actions.

The willingness shown from the housing associations gave a clear indication that the idea of establishing citizen groups that will engage in initiatives not directly connected through the housing associations could become a reality. An important future aspect for this project will therefore be to describe:

- How to establish citizen groups,
- What they should be provided with, and
- How should they be remunerated?

Information Logging

At this step the housing associations were asked to formulate what information the tenants request before an energy retrofitting action.

The tenants were divided into two interest groups of equal importance. One group found information about economics, especially about financing and pay-off time very relevant while the other group was especially interested in more intangible areas such as aesthetics and involvement in the project and final result.

Open Corner

The Open Corner element had two main points.

It enabled the participants to raise a subject for questions in an open plenum for relevant stakeholders, and at the same time it enabled ProjectZero to approach these questions.

It trained both parties in communicating with each other which was important in regard to training for establishing trust for the later activities.



Picture 7 Workshop B42 organizational board

The goal – the expected outcome.

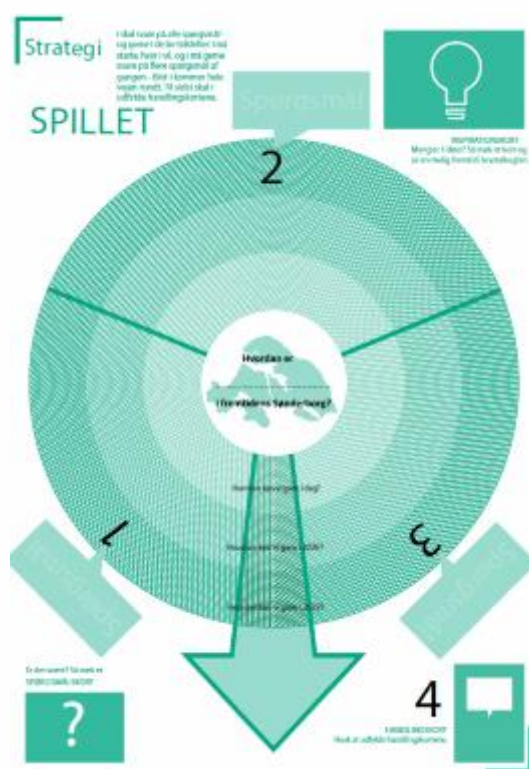
- To prepare the team that will secure a strong future contact to the tenants.
- In cooperation with the team make a program for citizen engagement, as described in step three.



Picture 8 Department boards meeting Soebo and SAB

The general manager in each of the three housing associations established contact to the department boards in the pilot area.

Thereby six department boards were contacted and the ProjectZero secretariat invited each department board for a workshop to prepare them as a team for the contact to the tenants.



To facilitate the workshops a dialog game was developed, enabling the department boards to discuss various aspects of energy retrofitting and environmental issues.

Final results from the workshops:

- Communication about the activities in SEC have to focus on the economic consequences for the tenants
- Activities about energy behaviour have to be constructed as workshops
- Recruiting families should be a task for the department boards

Picture 9 game board

The goal – the expected outcome.

- Involving thirty families in a continued citizen-journey - to improve their awareness of their own family-behaviour in relation to use of energy.
- To establish a base for cooperation between the families.

- Create a methodology for comparing energy consumption.
- To harvest learnings from a family engagement program in the housing association domain

The thirty families' citizen-journey will consist of five meetings. Each meeting focuses on energy efficiency with different energy approaches and -locations. Each of the meetings are further explored under communication activities.

Establishing an internet-based system for the tenants to log their energy consumption.

The end goal with the thirty families is to establish ambassadors for energy behaviour among their neighbours. Therefore, the families will be named *lighthouse families* throughout the actions.



6 Renovations



The typical heating energy consumption for buildings in the housing associations in Sønderborg is around 110 kWh/m² which is considered to be relatively low. Therefore, the building retrofitting measures are oriented towards limiting consumption in the weakest areas (electricity, light consumption) with measures like LED lighting, substitution and, implementation of lighting controls.

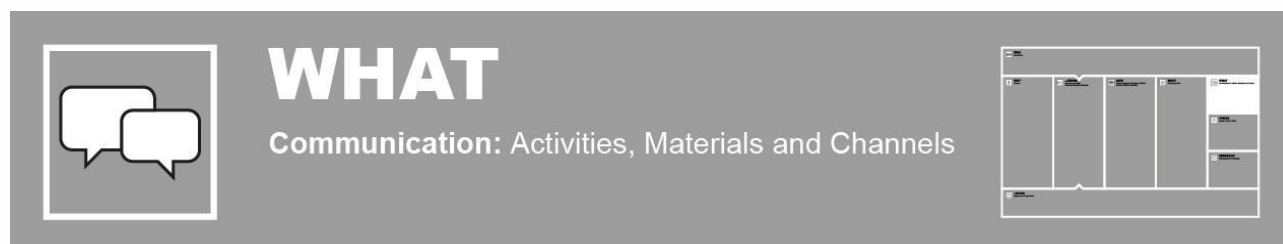
Additionally, electric consumption will also be addressed from the supply side, through installation of PV generation in each building.

The goal of the energy retrofitting activities is specified for each department below in [figure 4](#).

No.	Housing company	Est. Year	No flats	Built. area	Energy savings - BEST forms	Extra energy retrofitting measures
1	Sobo Borgmester Andersens vej	1970	88	8,420	Before: 139 kWh Savings: 39 kWh	New low energy windows and doors, LED outdoor lamps, lightning control, new automatic on-air exchangers, building integrated PV
2	SAB-Kloevermark	1964	438	32,421	Before: 139 kWh Savings: 2 kWh	LED outdoor lamps, lightning control, building integrated PV
3	B42 Skriverloekken	1957	100	6,960	Before: 137 kWh Savings: 9 kWh	Insulation of massive outer walls, LED outdoor lamps, lightning control, building integrated PV
4	B42 Ringbakken	1969	72	4,320	Before: 143 kWh Savings: 38 kWh	New low energy windows, insulation of facades, LED outdoor lamps, lightning control, building Integrated PV
5	B42 Vissingsgade	1953	25	2,160	Before: 145 kWh Savings: 20 kWh	Insulation of roof, LED outdoor lamps, lightning control, building Integrated PV
6	B42 Morbaerhegn	1982	87	9,600	Before: 137 kWh Savings: 13 kWh	New ventilation system with heat recovery, LED outdoor lamps, lightning control, building integrated PV.
7	B42 Sundquistgade	1959	34	2,300	Before: 143 kWh Savings: 38 kWh	New low energy windows, insulation of roof, LED outdoor lamps, lightning control, building integrated PV,
Total Sønderborg			844	66,181		

Figure 4 Table of expected energy savings for each department

7 Communication activities, Materials and Channels



The citizen engagement actions focused on information and learning for the associated lighthouse families. Below the five workshops that were developed through the process have been described.

To further strengthen citizen engagement in SmartEnCity, “the Lighthouse Family” activity program was created, aiming at gathering thirty families across the three involved housing associations. The overall goal for the families was to change and utilize their energy consumption in a smarter way for example through retrofitting but still maintaining a satisfactory comfort level for the families. Over a period of six months five workshops were created with different themes.

- Introduction to the activity program
- Electricity and heat,
- Water and wastewater
- Transportation
- Waste.

The workshops consisted of a presentation from an expert or a trip to see how the energy in Sønderborg is produced.

It was very important that the families participated in the planning of the workshops and they were frequently asked for improvements and suggestions when planning the upcoming workshops.

Another reason for creating these activities was to measure what kind of initiatives had the most positive effect on lowering the participants’ energy consumption.

The learnings were gathered in a catalogue to be used by the organizational and department boards housing associations.



Picture 10 Inspiration catalogue

At the first meeting the families were introduced to the people organizing the project.

The families were able to introduce themselves. Many expressed a wish to learn more unconventional ways to lower their energy consumption.



Picture 11 Intro meeting tenants

www.myzero.dk was introduced with a short run through of the website's qualifications.

Afterwards the families played a game developed to discuss energy behaviour. Many shared their experiences and viewpoints and it was expressed that the participants wanted to keep having that opportunity during the workshops.



Picture 12 Intro meeting tenants and game board

The workshop began with a detailed introduction of the website www.myzero.dk. Through the website it is possible for tenants to register their electricity, heat and water consumption.

Afterwards a presentation was held by a local energy consultant, Charlie Lemtorp. He explained what areas the participants should focus on in order to lower their heat and electricity consumption.

He showed several examples of electrical bills and explained to the participants how to read the bill. Many were surprised to learn that only 12% of the bill is the actual electricity consumption, the rest are taxes and contribution to the power grid. It is crucial that residents understand what they are paying for if they want to gain knowledge on how to lower their energy consumption.

An assignment was created for the participants. They were asked to create a focus plan and pick 2-5 energy reducing ideas from the presentation and focus on these for the next month. Some of the ideas consisted of changing light bulbs to LEDs, turning the oven off early and

instead make use of the residual heat, keep the temperature in the fridge at 5°C and many more.

The idea is to not burden the participants too much. In the beginning it is easier to focus and commit to a few things and then gradually adding more and more to focus on.



Picture 13 Energy Charlie Teaching

The workshop began with an introduction to water and wastewater by Martin Odmand Jørgensen, responsible for the SonForce learning centre at SONF, Sonderborg's Supply – Recycling and waste, water and wastewater company.

After the introduction he provided a guided tour at the main wastewater treatment plant.

The purpose of the tour was to show the families how the water is treated. He also informed about legislation in Denmark and treating wastewater.

The families participated greatly in the discussion about what initiatives should be taken in the future so that more wastewater can be treated. They were equally interested in how they themselves could influence this area.

Afterwards Martin had prepared a quiz about the average consumption of water – this gave a good debate about how the participants could save water in their daily lives.



Picture 14 Tenants participating at water workshop

The workshop began at SONF's recycling centre in Noerrekobbel. This is where the majority of the (non-collected) waste from the Sonderborg center city ends. The presenter was again Martin Odmand Jørgensen and he explained the process at the recycling centre. He explained what items could be recycled and/or used again.

What was most remarkable to the participants during the visit, was the amount of waste SONF has to deal with on a daily basis. Many were surprised that most of the waste that goes through the centre is still sorted by hand and how much the company is affected when the residents in Sonderborg sort their waste wrongly – it is resource intensive and costly for SONF. That is why SONF spends a lot of resources informing and educating the citizens about recycling.

Through this project it became clear that sorting waste correctly still is a big challenge for many residents, especially those living in apartment buildings. It shows that information and counselling still is very important in this area.



Picture 15 Tenants participating in the waste workshop

The workshop was outside where the families were able to try an electric car and an E-bike. The families discussed their own transportation habits and how an electric car sharing service could substitute a second diesel car for many families.

This was the workshop with the lowest number of participating families.



Picture 16 Tadaa electric car sharing service

It was difficult to find 30 families willing to participate in the activity program. At the beginning, the department boards were requested to find all the families, but they were unable to complete the task. Therefore, it was decided to search for families from other departments within the same housing associations who had not been involved in the actions from the start.

A Facebook video campaign was launched and was seen more than 15.000 times but only generated two participating families. So, this was not the right media to recruit families.

Link to the movie. <https://youtu.be/CiPtFQIEjFs>

Initially it was intended that the families should commit to pass on their experiences and findings to other families in their building departments. They were supposed to inspire and engage other families. Many cited that the role made them nervous – they did not want to



impose themselves on their neighbours and seem arrogant. Another reason was that the commitment and effort would be too heavy.

The attendance rate in general of the workshops was 50 % which was considered low but the tenants themselves was impressed with this attendance rate. This shows a clear divide between expectations.

During the workshops the general experience was that the families involved themselves positively in the assignments, presentations, tours, games etc. that was prepared for them. They asked many questions, and many expressed afterwards that they had gained a lot of knowledge from the workshops they now were able to implement in their daily lives to lower their energy consumption.

A key learning was that it is important to engage the participants with physical examples and pictures.

More time should have been spent on introducing everyone to the website www.myzero.dk. The website was not fully functioning at the time of the presentation and it was challenging to instruct people how to use it. This resulted in many incorrect registrations from the families and the data became useless. Next time it would be a good idea to let participants try out the system at the workshop.

Another learning was that especially the presentations should be more interactive. The presentations should have focused more on dialogue and debate rather than just information. The participants were very willing to discuss, and they should have been given more time to do so.

Although the meetings were intended for all ages, children were rarely present at the workshops and a consideration would be to have given this segment, families with kids, more attention during the recruitment process.



Throughout the SEC-project, ProjectZero's different communication platforms were used to inform and engage stakeholders, and tenants in the pilot area in the activities.

The website www.projectzero.dk was used to distribute stories about the tenant workshops. The stories were also shared with each housing association to distribute on their own websites and tenant's magazine.

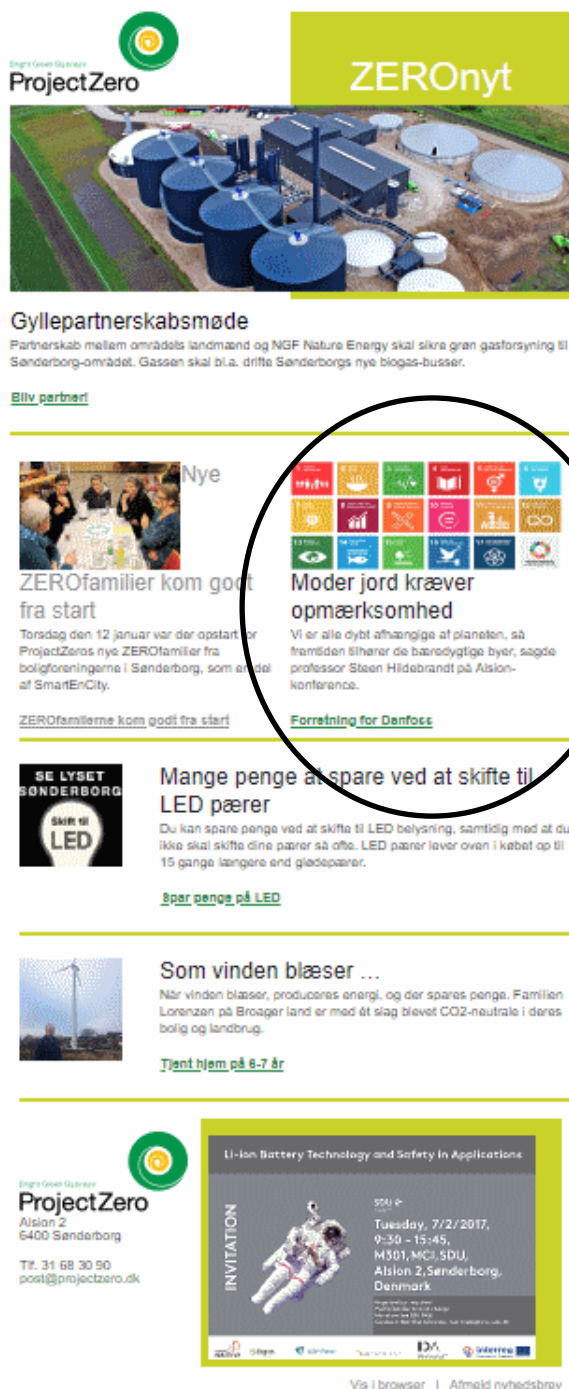
Other relevant information about the SEC project was also continuously published at the webpage.



Picture 17 ProjectZero webpage

To spread the word about the lighthouse family's news, stories were created and distributed as part of the bi-weekly distribution of the ProjectZero newsletter – targeting more than 3.500 subscribers across the Nordic countries.

The tenants in the pilot areas were requested to subscribe to the newsletter at the tenant meetings.



Picture 18 ProjectZero newsletter



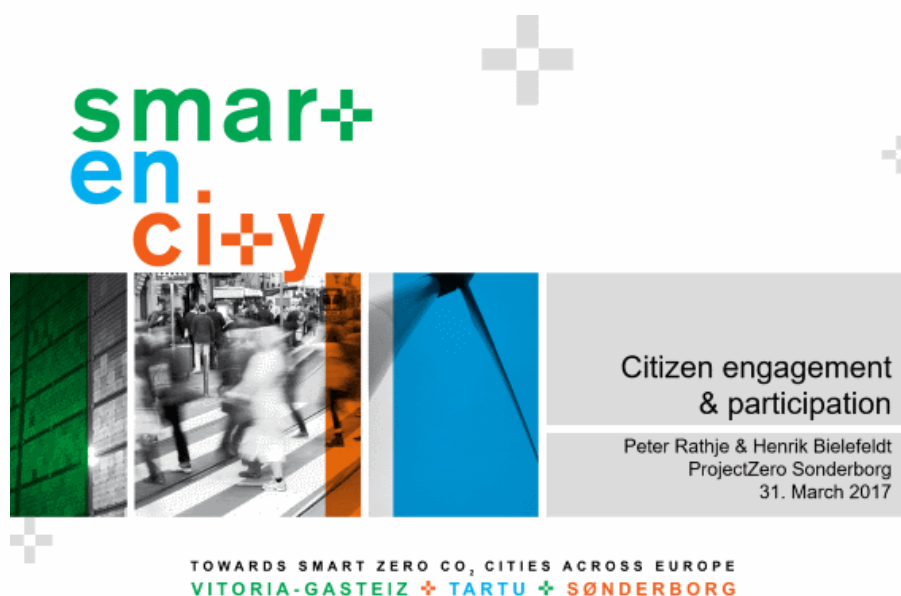
A web-based registration was developed for the lighthouse families to register their energy consumption.



Picture 19 Logon page www.myzero.dk

ProjectZero created and participated in a SmartEnCity Network webinar session on 31st March 2017, which explained and demonstrated the SEC Citizen Engagement methodology and its application on two of the Lighthouse demo-projects.

Link to the webinar recording: https://youtu.be/B9rk-x1_4_I



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691883

Picture 20 Webinar 31. March 2017



To engage with new tenants in the pilot area, the working group designed a nudging kit consisting of a flyer and stickers. These were handed out to new tenants to create new behaviour in their new apartment.



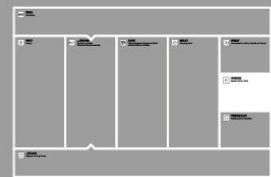
Picture 21 Nudging kit

8 Physical and virtual meeting spaces



WHERE

Spaces: Real and Virtual



The main traditional/formal places where the tenants could engage with the working group was the annual resident meeting. ProjectZero participated in all meetings in the demo area informing and answering questions from the tenants directly.



Picture 22 Annual resident meeting B42

The virtual or digital spaces are the projectzero.dk and the myzero.dk

Even though the tenants all were on Facebook, they did not want to communicate with the organizers using this method, because Facebook was reserved for private interactions.

9 Feedback



In the Sonderborg SmartEnCity demoproject, information and feedback has been gathered regularly from resident meetings and from the Lighthouse families. The different feedback formats that have been used include:

- Asking for feedback at every resident meeting in the pilot area – what were the tenants concern and questions regarding the activities?
- There was feedback from the lighthouse families during the workshops
- Additionally, feedback has been collected/compiled for study materials by students from SDU
- The Advisory Board has discussed input from the tenants and project group.
- A questionnaire was submitted to collect more detailed feedback from the tenants

All the gathered feedback has been analysed and discussed by the working group and used for further planning and advancing the citizen engagement actions. The feedback helped the project group to plan better and more effective events.

The questionnaire has not been detailed described in this Report, the feedback is very diverse from the tenants and probably reflects the very different energy retrofitting actions. Therefore, there is a need for a follow up survey or interviews to decipher the results for key learnings and later reporting. The feedback will furthermore be a part of the future fine-tune of the tenant communication in the Happi-project.

10 Reflections

Throughout the project period of planning and implementing the citizen engagement activities in the pilot area of Sonderborg, the working group identified several lessons learned and best practices, that may be relevant for other similar projects. These are described below and have also been compiled in the inspiration catalogue distributed to the organizational boards of the housing associations.

In retrospective, there were activities that the working group perceives could have been approached or implemented differently in terms of engaging and communicating with the tenants. These are:

1. The activities with Lighthouse Families did not focus on a specific segment, the goal was to get 30 participating families and to learn from the interactions and challenges. It became clear, that even though the tenants from the outside appear to be a homogenous group, they are fragmented as a group and proved difficult to make a program for that was interesting for all participants – at the same time.
2. The special decision-making process of tenant's democracy is important to consider when planning the communication activities. The three housing associations have resident meetings at different times during the year and thereby having different requests for communication material.
3. The department boards were crucial to get onboard the project from the beginning. The department boards have valuable knowledge about the tenants and department history regarding former retrofitting projects.
4. Delays at the beginning of the actions regarding finding thirty families should have been prevented. The task of finding thirty families were underestimated and demanded more actions from the working group than anticipated.
5. A stronger working group with participation from all housing associations should have been assembled. This would have given better lines of communication and knowledge from the housing associations.

The working group also identified best practices from the citizen engagement strategy and actions implemented as part of the SmartEnCity project. These include:

1. Tenant workshops created a form of community among the Lighthouse Families and gave the tenants possibility to learn from each other. Several of the tenants in the actions had good insights into the benefits of the energy retrofitting actions and supported the experts teaching at the workshop. This elevated the trust for both the financial and non-energy benefits from the energy retrofitting actions. Minutes of meeting from each workshop were used as knowledge gathering for the communication activities in newsletters and webpage.



2. Personal communication at tenant meetings created trust. Participation from ProjectZero at the annual tenants meeting created trust among the tenants for the retrofitting activities combined with the presentations of the projects from the general managers from the housing associations.
3. Create an advisory board to evaluate actions. The advisory board was actively involved in evaluating the Lighthouse Families workshops and communication, providing valuable information about the tenants and engagement activities.
4. The project created energy-spokesmen. After the energy retrofitting projects representatives from the department boards and lighthouse families became energy spokespeople, or ambassadors, and have acted as guides for visitors from other cities and countries and given interviews to national media about the actions in SEC.



Picture 23 Roof-top integrated PV panels dept. 11 Sobo

11 The Citizen engagement strategy – looking forward

The citizen engagement actions in SEC secured the approval (at multiple organizational levels) of the seven SEC building energy retrofitting projects in Sonderborg.

For the remaining 24 months of the SEC project, the citizen engagement activities will be fine-tuned based on the lessons learned, the feedback provided and the establishment of the CIOP – City Information Open Platform.

Furthermore, the best practices and the strong collaboration with the housing associations will be a vital part of the H2020 project Happi (Grant Agreement number 785147) started in March 2018 involving all six housing associations in Sonderborg Municipality retrofitting over 3,300 apartments.

Key learning point from the SEC project that Happi will adapt and integrate:

- Workshops with the organizational board to continue the strong collaboration. In Happi all six housing associations have to formulate an energy policy, the workshop-model from SEC will be used for this part.
- Strong working group, in Happi there is created a strong steering group with participation from all housing associations based on the experience from SEC.
- Integration of the Lighthouse families. The lighthouse families have been established as a test group for communication securing that the information is segmented and understandable for all tenants.
- Continuation of the advisory board. The advisory board started as a part of the citizen engagement actions and has continued onwards as part of the Happi project with the same members. The members will still provide knowledge on actions and communications for the project.
- Nudging kit, the nudging kit will be distributed to all six housing associations as well as private landlords for all to use. This will be a part of the welcome package for new tenants.

The continued learnings and evaluation of the SEC project will be integrated in the future actions in the Happi-project during the next two years, when the planned energy retrofitting projects are to be presented to the tenants.

ProjectZero has developed a better understanding of the housing associations during the SEC project. This has led to a strong collaboration and participation with all the housing associations in the Roadmap2025 process and to strong commitment to Sonderborg's overarching goal of becoming carbon neutral in 2029.

