Summary of results for demonstration exemplars

Triple-A: Stimulating the Adoption of low-carbon technologies by homeowners through increased Awareness and easy Access

Deliverable O.4

[17 April 2020]

PP2-8
Case: Demonstration exemplars

Project No. 2S02-029

With the financial support of

Author (s)

NAME	ORGANISATION
Francesca Baylis	KCC

History

REVISION	DATE	AUTHOR	ORGANISATION	DESCRIPTION
First draft	27/04/2020	Francesca Baylis	KCC	First draft

Written summary of O.4 results

Output O.4 was completed by PP2-8 and achieved 1640 demo homes and carbon savings of 3383.02 tonnes of CO_2 per year. These results exceeded the target for number of demo homes by over 140 homes and was close to the carbon savings target of 4,191 tonnes. The reduced carbon savings from the target target was thought to be shifting types of demo from those with larger carbon savings to those with smaller savings. The partners found difficulty encouraging residents to undergo whole house (nearly zero carbon) retrofit, leading to many taking on smaller measures instead. There has also been significant decarbonisation of the electricity grid since the project proposal and so for those partners who get carbon savings data from their installers it can be difficult to ensure the 2015 carbon figures are used.

PP2 focused on model B- whole house or nearly zero carbon retrofit. They engaged with 10 neighbourhoods and focused on installations of insulation (roof and cavity wall), new heating systems, solar panels and new glazing. They found multiple barriers to nearly zero carbon retrofit as homeowners were reluctant to undergo these works due to time, financial obligations, and building permits. However, 38 homeowners were engaged to install a total of 54 measures. This achieved a saving of 54.57tonnes of CO_2 per year.

PP3 planned to implement models B- whole house or nearly zero carbon retrofit and model D- longer term phased retrofit. PP3's model focused on education of residents through a collaboration with Bres, to provide information sessions, the pop up (over 2,000 registered visitors) and kitchen table advice sessions (approximately 500). Actions were not directly recorded but were determined through follow up contact with homeowners 6 months after their visits and records of energy saving loans granted in Breda were recorded over the three years. PP3 also had difficulty with model B and found no residents have completed whole house retrofits. However, they had great success with model D and achieved 134 demo homes in the specific areas with 391 in wider Breda. This achieved savings of 138.9 tonnes of CO_2 per year and 381.1 tonnes of CO_2 per year respectively.

PP4 focused on model A- utilising new or innovative technologies. PP4 engaged their twelve districts to identify three districts where the demos should take place. 10 demo homes were then selected and had solar PV systems, battery storage and HEMS installed. This allowed PP4 to monitor the real time energy savings the systems provided. Residents were also monitored with regular surveys. These measures achieved a saving of 14 tonnes of CO_2 per year.

PP5 implemented models B- whole house or nearly zero carbon retrofit and model D- longer term phased retrofit. For model B PP5 tried a neighbourhood approach but achieved one installation finding similar barriers to whole house retrofit as PP2 and PP3. This model achieved a saving of 9.2 tonnes of CO_2 per year. For model D PP5 used a neighbourhood approach again but this time using an ambassador from the area who had approached them. PP5 facilitated the process by offering free home visits with renovation advice, co-organising neighbourhood gatherings and offering financial support (neighbourhood subsidy and energy loans). Through this method they achieved 17 demo homes (with 4 more homes joining past the deliverable deadline) and a carbon saving of 8.6 tonnes of CO_2 per year.

PP6 installed demos of model types B- whole house or nearly zero carbon retrofit, C- Large scale or community wide mass retrofit and model D- longer term phased retrofit. For model B PP6 carried out in-depth thermal analysis of the homes and developed personalised work programmes with energy renovation coaches. Through this model PP6 achieved 61 demos with a carbon saving of 227 tonnes of CO_2 per year. For model C PP6 reached out to everyone in a street or neighbourhood when one of the residents used their services to try and engage further residents. Through this model they achieved 62 demos and carbon savings of 250 tonnes of CO_2 per year. For model D PP6 offered the same thermal analysis as model B with half day visits with an energy renovation coach. Through this method they achieved 499 demos giving carbon savings of 1901 tonnes of CO_2 per year.

PP7 implemented demos from model types A- Utilising new or innovative technologies, B- whole house or nearly zero carbon retrofit, C- Large scale or community wide mass retrofit and model D- longer term phased retrofit. For model A PP7 commissioned the regional energy counter (WoonWijzerWinkel) to install battery storage systems in homes. This model achieved 4 installations and a saving of 4.8 tonnes of CO_2 per year. For model B PP7 used collaboration with WoonWijzerWinkel and Klimaatroute to carry out door-to-door recruitment by providing energy scans if residents were interested. On request PP7 then supported the resident further with installations, yielding 21 measures installed across five houses. This gave a carbon saving of 16.9 tonnes of CO_2 per year. For model C PP7 collaborated with WoonWijzerWinkel to organise group purchases to get group discounts through combined requests. Through this model 187 homes had installations giving carbon savings of 172 tonnes of CO_2 per year. For model D PP7 used the door-to-door recruitment model again with collaborators to achieve 1049 measures across 435 homes. This model gave carbon savings of 624 tonnes of CO_2 per year.

PP8 installed demos of model type C- Large scale or community wide mass retrofit. PP8 collaborated with iChoosr to organise a group purchase of solar panels. PP8 provided information sessions, advertising and social media engagement for those interested. They also requested homeowners who signed up showed their engagement through posters at the home and during events to help incentivise neighbours to get involved. Through this model PP8 achieved 240 installations and a carbon saving of 166.144 tonnes of CO_2 per year.

Summary of results model A: Utilising new or innovative technologies

Demo type A: Utilising new or innovative technologies PP4	
Short description	KCC installed solar PV panels with battery storage systems and HEMS in 10 homes. These took place in later 2018- early 2019 and have had excellent results. Kent has twelve districts and one unitary authority. Installations took place in three of these districts based upon their suitability for the scheme. This suitability considered: • Household energy use • Index of multiple deprivation data • Additional data on existing PV installations and primary energy use, and tenure type • Household characteristics/Market segmentation data

	• Evidence of political support • Statement of engagement • Commitment to provide resources to support the pilot Once the districts were chosen, the homeowners in the selected areas in these districts were engaged according to the engagement strategy.
Number of demo homes of this type:	10
Carbon savings:	14tonnes of CO_2 per annum
Carbon savings calculation:	Real data from the HEMS system was collected to show the energy produced by the solar panels as opposed to the total energy use. This allowed us to convert the number of KWh produced by the solar panels into the carbon dioxide that would have been produced for the same number of KWh from the grid.
Please add any pictures of installations of this type that you have 	

Please provide a reference list of evidence for your installations provided on surfdrive.

Surfdrive/WP4 DEMOnstration exemplars/ O.4.1 Demonstration exemplars/ O.4.1_Proof delivery exemplar_PP4/ Model A

Demo type A: Utilising new or innovative technologies PP7	
Short description	PP7 commissioned the Regional Energy counter WoonWijzerWinkel to make an inventory of Battery storages commercially available and to organise purchase and installation. From the inventory carried out in 2018 seems that there is no standard to couple the types of battery storage with the types of PVs. It is hence necessary to purchase both at the same time from the same brand to ensure technical compatibility. So residents asking for an offer for PV-panels from a producer which also can provide batteries were proposed to take part in the TRIPLE-A study. All 4 batteries installed are from the same producer.
Number of demo homes of this type:	4
Carbon savings:	4,8 ton CO2 / year
Carbon savings calculation:	Based on national prefix values from Dutch Ministery RVO/Milieu Centraal
Please add any pictures of installations of this type that you have Installed Battery storages TRIPLE-A	

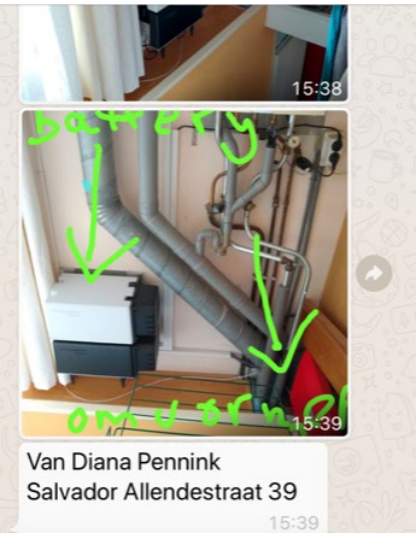
- At Mr Giesing 's

https://twitter.com/rotterdam/status/1113485366596657154

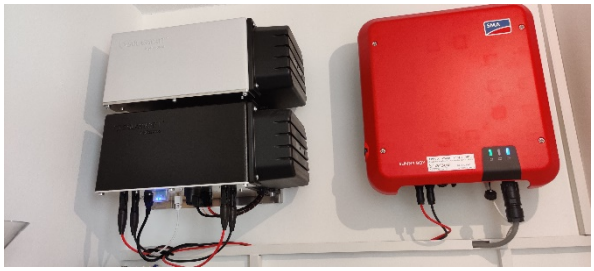
- At mr Holleman's

https://www.rotterdamenergiebesparing.nl/succesverhalen/eengezinswoning-ijsselmonde

- At mrs Pennink's



- At mr van Hoeckel's



Please provide a reference list of evidence for your installations provided on surfdrive.
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ration%20exemplars%2FO%204.1%20Demonstration%20exemplars%2FO4.1_Proof%20delivery%20exemplar_PP7

Summary of results model B: Whole house or nearly zero carbon retrofit

Demo type B: Whole house or nearly zero carbon retrofit PP2	
Short description	A selection of 10 neighbourhoods was made. The city of Antwerp has 9 districts in total. For the selection there were 7 selection criteria and 5 exclusion criteria used for the screening. The 7 selection criteria: 1. Only neighbourhoods situated in the 20th century belt 2. The moving intensity 3. A bel-etage neighbourhood 4. The number of unsuitable or uninhabitable living units 5. The number of citizens living in rental houses 6. The number of renovated houses after 2006 7. Planned rebuilding of the public space in the near future The 5 exclusion criteria: 1. Recent rebuilding of the public space 2. Ownership 3. Houses younger than 30 years 4. The subsidy policy for certain neighbourhoods 5. On the heritage inventory The aim was to initiate collective renovation projects in each neighbourhood. From the 10 neighbourhoods 6 were visited. The used method was a followed: • Distribution of an invitation for a information session in the neighbourhood and/or information flyer • Information session in a location in the neighbourhood so citizens didn't have to go far • Collecting interest after information session • Neighbour meeting with the interested citizens together with the energy coach of Pixii • Home visits by the coach • Coaching of citizens during the renovation (requesting and comparing price offers, follow-up etc.) • Support of EcoHuis for the application of the energy loan and/or subsidies Low-carbon technologies that we installed: • Roof insulation • Cavity wall insulation • New heating boiler • New glazing • Solar panels (still have to be executed)
Number of demo homes of this type:	None, because we noticed that there were some barriers to execute a NZEB retrofit: • Technically

	• Financially • No time, too much fuss, too much dust and chaos • Home-owner wanted first to see if the contractor would do a good job before starting extra works • Obligation of a building permit We reached though 38 home-owners who executed one or more measures. In total 54 measures were realized. We also noticed that some home-owners did more measures that initially thought.
Carbon savings:	We saved 54,57 ton CO_2 with the installation of the different measures.
Carbon savings calculation:	The carbon savings calculation that is used for the Flemish Energy loan. For the energy loan carbon savings need to be calculated as well. I used the same calculation spreadsheet. In order to calculate the savings you need to know the m² of insulation or glazing, kWp of solar panels and type of fuel used for the heater (gas, fuel oil or electricity)
Please add any pictures of installations of this type that you have No pictures	
Please provide a reference list of evidence for your installations provided on surfdrive. Because of privacy regulations we cannot put evidence of Surfdrive. But we have different documents as proof: • Signed offer request • Invoices • Requests for subsidies • Requests for energy loan • Reports in E-lyse for the Burenpremie (grant for the coaches provided by Fluvius, the Flemish grid operator)	

Demo type B: Whole house or nearly zero carbon retrofit PP5	
Short description	Initially, our aim was to use a collective approach, targeting a specific neighbourhood and actively searching for frontrunner inhabitants (NZEB-ambassadors). However, we were confronted with the following limitations: • Nearly zero carbon retrofits require a significant investment. While literature[1] puts forward a cost of 40.000 – 60.000 EUR per household (on average), this easily adds up to 100.000 EUR or more, with a payback cost of 20 years or longer. It is therefore

[1] SERV, 2019. https://www.serv.be/serv/persberichten/vlaams-klimaatdoel-eist-durf-kapitaal-en-extra-mensen

	difficult to convince people to invest this kind of budget, if they were not planning to do so in the first place. A neighbourhood approach then is limited to identifying the frontrunners, as it is not possible to convince households who were not planning to invest in a home renovation. • Furthermore, it is difficult to predict or guarantee the expected energy savings for single family home renovations. Studies point out that there is a significant difference between the predicted and actual energy savings (the "performance gap" e.g. Deurinck 2015[2], Delghust 2015[3]), which is especially the case in old, existing homes. • These kind of retrofits typically require a building permit and thus the collaboration with an architect is mandatory in most cases. We consider the architect as best positioned to support the homeowner in the renovation process (with the help of additional support in the form of energy experts or engineers). As a result, there is a less need for additional support and the added value that a local authority (for instance, unburdening the homeowner) can provide in this process is limited To unlock nearly zero carbon retrofits, it seems that ('soft') policy instruments such as the ones developed within Triple-A (= communicating, facilitating) alone are not sufficient and should be complemented with ('hard') policy instruments (= regulation, financing). However, the tools developed within Triple-A are well-suited to promote best practices of nearly zero carbon retrofits. We have approached this type of demo this way: • With the Triple-A partnership, we visited a demo-NZEB renovation in Mechelen[4] as a field study visit. The project itself was not part of the Triple-A project. • Within Triple-A, we followed up a similar NZEB renovation in another neighbourhood in Mechelen. Wall, roofs, floor are insulated according to NZEB-levels. Single glazing is replaced with high performance double glazing. A solar collector and condensing boiler is installed. The result is an EPC label A (~67 kWh/m².year)
Number of demo homes of this type:	

[2] https://limo.libis.be/primo-explore/fulldisplay?docid=LIRIAS1729316&context=L&vid=Lirias&search_scope=Lirias&tab=default_tab&lang=en_US

[3] https://biblio.ugent.be/publication/6988905

[4] https://www.wienerberger.be/architectuur/projecten/renovatie-rijwoning-mechelen.html

	1
Carbon savings:	Before: 11.475 kg.CO_2/year After: 2.296 kg.CO_2/year Resulting carbon savings: 9.179 kg.CO_2/year or **9,2 ton.CO_2/year**
Carbon savings calculation:	We applied the national EPC-calculation method before and after the renovation[5]. The homeowner is monitoring the energy consumption using EnergieID (since 1/11/2018) and EnergieID+June Energy (since 21/2/2020). The energy consumption figures for 2019 (after renovation) indicate CO_2 emissions of 2,43 ton CO_2/year (this includes electricity for appliances and lighting) which seem to correspond with the estimated CO_2 emissions (after renovation). Energy consumption figures before renovation are not available.
Please add any pictures of installations of this type that you have The home was featured during the Open Home event Ecobouwers Opendeur in 2018. The Renovatiemobiel was placed in the neighbourhood with guided visits to the home. https://www.ecobouwers.be/woningen/uitdagende-renovatie-van-rijwoning-mechelen See SURF-drive for pictures during the Ecobouwers Opendeur event in 2018. https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FA%204.3%20Implementation%2FWorking%20Documents%2FPP5%20Mechelen \ Landbouwstraat	
Please provide a reference list of evidence for your installations provided on surfdrive. See SURF-drive for: • EPC before and after renovation • Energy audit report https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FA%204.3%20Implementation%2FWorking%20Documents%2FPP5%20Mechelen \ Landbouwstraat	

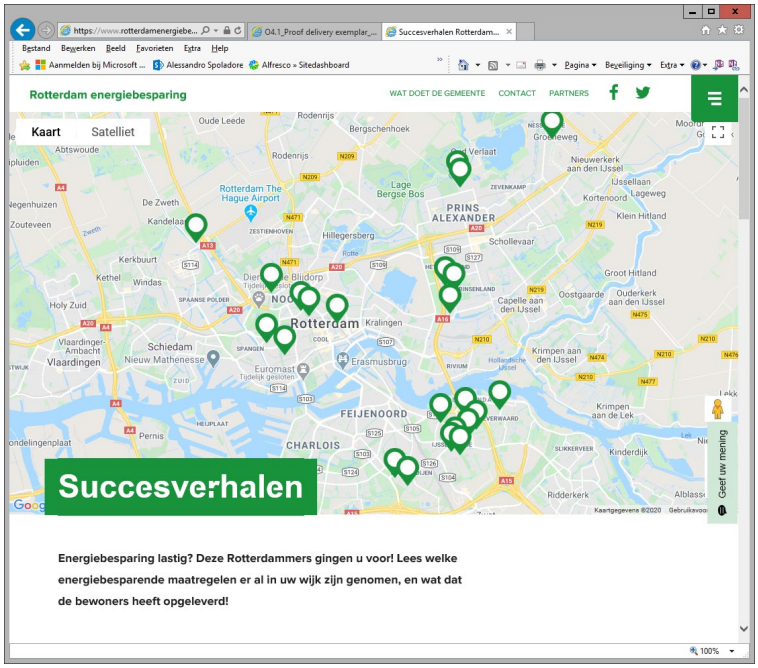
Demo type B: Whole house or nearly zero carbon retrofit PP6	
Short description	The serviced offered by PSEE includes carrying out an in-depth thermal diagnosis of the accommodation and developing a personalized work program. The energy renovation coach goes to the owners' home, over half a day, to take stock of the housing situation (wealth analysis), but also on the household's financial situation

[5] https://www.energiesparen.be/epc

	(analysis of energy bills, income and additional debt capacity…). On this basis, he builds up a work program, adapted to the needs and budget of the household. So PSEE does not have a special approach before going to the house and analysing their financing situation. Also there is not a special type of technologies we installed, it changes too much according to the households. Most of them installed a full insulation and thermodynamic systems.
Number of demo homes of this type:	61 demos
Carbon savings:	227 t_{CO2}/year
Carbon savings calculation:	For all the demos, we make a thermal study to evaluate energy savings and carbon savings. We use the software called "DialogIE". Developed by the French Environment and Energy Management Agency.
Please add any pictures of installations of this type that you have	
Please provide a reference list of evidence for your installations provided on surfdrive. On the surfdrive, you will find information sheets about several renovation.	

Demo type B: Whole house or nearly zero carbon retrofit PP7	
Short description	PP7 commissioned the alliance WoonWijzerWinkel / Klimaatroute to carry out 'door-to-door' recruitment campaign by providing energy scans if residents are interested in. On request an energy advice could be provided and further support until installation if asked for. In principle, residents are free to choose their own contractors / installers. The alliance helps only when there is interest. For each of the two TRIPLE-A area, these activities have been commissioned leading to the results of model B&D.
Number of demo homes of this type:	5 homes 21 measures taken
Carbon savings:	16,9 ton CO2 / year
Carbon savings calculation:	Based on national prefix values from Dutch Ministery RVO/ Milieu Centraal
Please add any pictures of installations of this type that you have See website 'successverhalen' (success stories) and the list of cases provided on surfdrive	

https://www.rotterdamenergiebesparing.nl/succesverhalen



Please provide a reference list of evidence for your installations provided on surfdrive.

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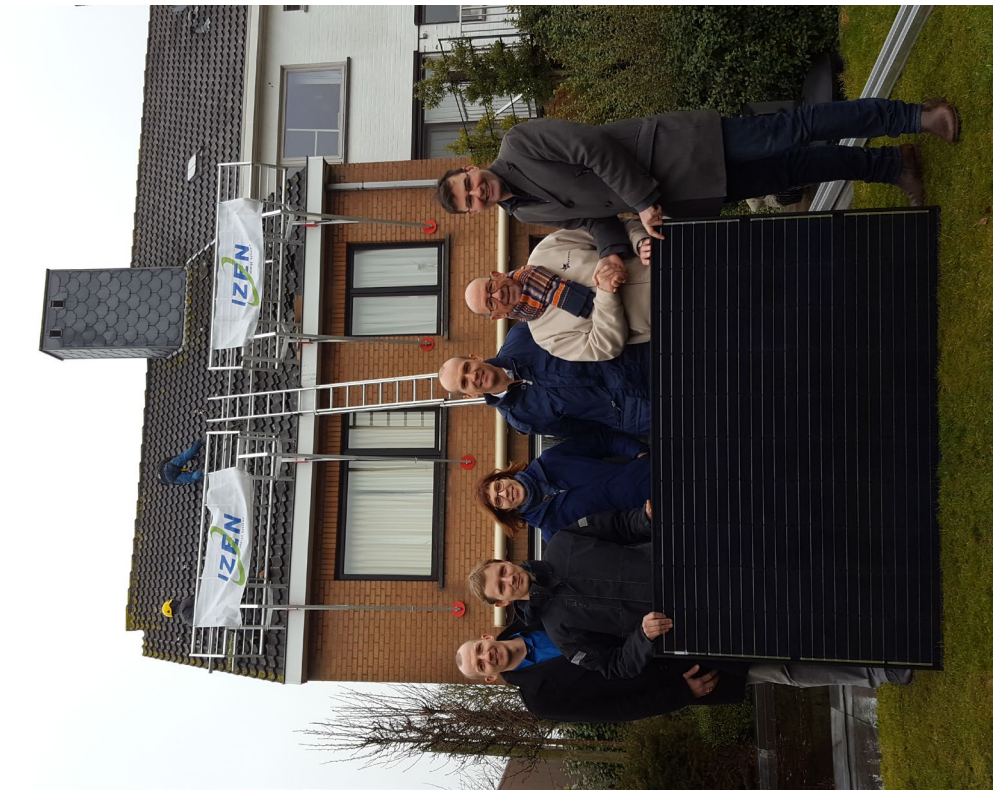
Summary of results model C: Large scale or community wide mass retrofit

Demo type C: Large scale or community wide mass retrofit PP6	
Short description	When a person decides to use our services, we make sure that we make ourselves known to everyone on the street or in the neighbourhood. Most of the times the renovation program is the same except for the small technologies
Number of demo homes of this type:	62 demos
Carbon savings:	250 t_{CO2}/year
Carbon savings calculation:	For all the demos, we make a thermal study to evaluate energy savings and carbon savings. We use the software called "DialogIE". Developed by the French Environment and Energy Management Agency.
Please add any pictures of installations of this type that you have	

Please provide a reference list of evidence for your installations provided on surfdrive. On the surfdrive, you will find information sheets about several renovation.

Demo type C: Large scale or community wide mass retrofit PP7	
Short description	The regional energy counter Woonwijzerwinkel is commissioned by 24 cities in the region. One of their activities, as intermediary between the supply and the demand sides, is to organise group purchase. Because of their position, they can combine requests for the residents of all 24 cities and create sufficient mass to get interesting discounts.
Number of demo homes of this type:	187 homes 187 measures
Carbon savings:	172 ton CO2 / year
Carbon savings calculation:	Based on national prefix values from Dutch Ministery RVO/ Milieu Centraal
Please add any pictures of installations of this type that you have https://twitter.com/rotterdam/status/1113485366596657154	
Please provide a reference list of evidence for your installations provided on surfdrive. https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FO%204.1%20Demonstration%20exemplars%2FO4.1_Proof%20delivery%20exemplar_PP7	

Demo type C: Large scale or community wide mass retrofit	
Short description	Solar panels are not implemented in potential houses yet, even though they are interesting to implement (low pay back period, easy to install, easy access to the technology etc.). The aim is to place 300 sets of solar panels. People participating in this project will be asked to show their engagement (eg. with a window poster at their home, during events, on the EOS website/Facebook page) in order to sensitize their neighbours to do the same. Yearly we organised a group purchase via iChoosr. We provided face-to-Face information and group sessions. We also used social media-Facebook, adverts in magazines, Email and Telephone for those who have signed up to the group

	schemes.
Number of demo homes of this type:	Already 240
Carbon savings:	The annual carbon emissions saving is 166.144 kg
Carbon savings calculation:	1 kWp installed = 0,899 kWh produced Savings = : 0,209 kg/kWh produced
Please add any pictures of installations of this type that you have 	
Please provide a reference list of evidence for your installations provided on surfdrive. For privacy reasons we can't publish a list of addresses where the solar panels were placed.	

Summary of results model D: Longer term phased retrofit

Demo type D: Longer term phased retrofit	
Short description	We try to inform and educate our residents through a joint effort with Bres through information sessions, webportal (www.woonwijsbreda.nl) and pop-up (Greenhopper). We have been very successful in attracting people's attention, with almost 2.000 registered visitors to the pop-up and approximately 500 kitchen table advices by Energy coaches (from Bres) since the start of

<table>
<tr><td></td><td>the Triple A project.

The actual follow-up actions that are taken by the home owners are not recorded. We do not have the capacity to offer assistance in the actual retrofitting process.

We do however keep track through an effort by volunteers of Bres, who contact all home owners they have visited approximately 6 months after the visit. Bres then records which measures have been taken.

If home owners are enthusiastic Bres invites them to give an official interview and publish their story in a newsletter or even on the webportal.

We also have records of all Energy savings loans that have been granted in Breda in 2017, 2018 and 2019.</td></tr>
<tr><td>Number of demo homes of this type:</td><td>134 (in demo areas); 391 (wider Breda)</td></tr>
<tr><td>Carbon savings:</td><td>The calculated carbon savings up until 2019 was:

138,9 tonne/year (demo areas); 381,1 tonne/year (wider Breda)</td></tr>
<tr><td>Carbon savings calculation:</td><td>
<table>
<tr><td>Methodology:</td></tr>
<tr><td></td></tr>
<tr><td>Used methods:</td><td>1: Milieucentraal database (aquired through website www.milieucentraal.nl)</td></tr>
<tr><td></td><td>where not available:</td></tr>
<tr><td></td><td>2: Woonwijzerwinkel Rotterdam (aquired though City of Rotterdam)</td></tr>
<tr><td></td><td>(CO2 emission is calculated per taken measure; savings for an average singel</td></tr>
<tr><td></td></tr>
<tr><td></td><td>Milieucentraal</td><td>WoonWijzerWinkel</td></tr>
<tr><td></td><td>Tonne per year</td><td>Tonne per year</td></tr>
<tr><td>Solar paneling (10)</td><td>1,0</td></tr>
<tr><td>Floor insulation</td><td>0,6</td></tr>
<tr><td>Glass insulation</td><td>0,8</td></tr>
<tr><td>(Cavity)Wall insulatior</td><td>1,6</td></tr>
<tr><td>Roof insulation</td><td>1,5</td></tr>
<tr><td>Heat pump</td><td></td><td>1,0</td></tr>
<tr><td>Hybrid heatpump</td><td>0,8</td></tr>
<tr><td>HR-natural gas heating</td><td></td><td>0,4</td></tr>
<tr><td>Solar water heater</td><td>0,3</td></tr>
<tr><td>LED lighting</td><td>0,01</td></tr>
<tr><td>Water saving shower</td><td>0,01</td></tr>
<tr><td>Quick-wins</td><td></td><td>0,1</td></tr>
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</td></tr>
<tr><td colspan="2">Please add any pictures of installations of this type that you have

Pictures are in interviews uploaded as evidence on Surfdrive (see link below).</td></tr>
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Demo type D: Longer term phased retrofit PP3	
Short description	We used a neighbourhood approach. However, we did not select a neighbourhood up-front (top-down), rather we were approached by a motivated citizen, who took the role of ambassador (bottom-up). In Esdoornplein, a street with 50 homes, this led to a collective action. In the end, 21 families participated, replacing their windows, installing cavity wall insulation and/or external wall insulation. An NZEB-coach guided them through the building process. We facilitated this process, offering free home visits with renovation advice, co-organizing neighbourhood gatherings, offering financial support through a neighbourhood subsidy and energy loans. Other partners included Kamp C (home-visits) and Fluvius (DSO offering grants for this system of NZEB-coaches[6] While a collective (neighbourhood) approach did not proofed successful for model B, it did proofed successful for model D. This experience led to a city-wide system of NZEB-coaches, developed in collaboration with BE REEL! [7]
Number of demo homes of this type:	17 (*) (*): We reported 17 but according to the NZEB-coach, four more households joined the project since 1/1/2020
Carbon savings:	8.640 kg CO_2/year
Carbon savings calculation:	We applied the national EPC-calculation method before and after the renovation[8]. In 2020, advanced monitoring devices will be installed to

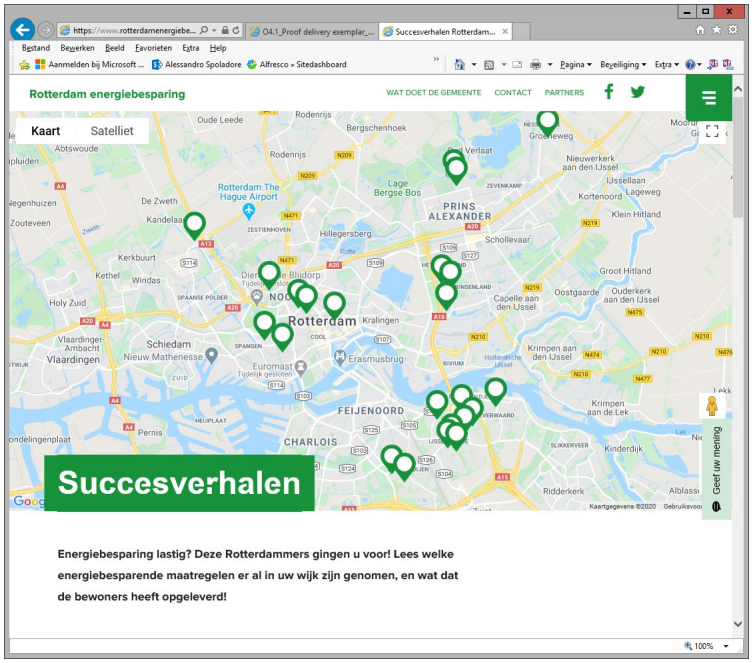
[6] https://www.fluvius.be/nl/thema/benoveren/gratisadvies

[7] See documentation on the SURF-drive https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FA%204.3%20Implementation%2FWorking%20Documents%2FPP5%20Mechelen \ NZEB-coaches

[8] https://www.energiesparen.be/epc

	measure the energy consumption during one year.
Please add any pictures of installations of this type that you have See SURFdrive https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FA%204.3%20Implementation%2FWorking%20Documents%2FPP5%20Mechelen \ Esdoornplein	
Please provide a reference list of evidence for your installations provided on surfdrive. See SURFdrive https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FA%204.3%20Implementation%2FWorking%20Documents%2FPP5%20Mechelen \ Esdoornplein	

Demo type D: Longer term phased retrofit PP6	
Short description	The serviced offered by PSEE includes carrying out an in-depth thermal diagnosis of the accommodation and developing a personalized work program. The energy renovation coach goes to the owners' home, over half a day, to take stock of the housing situation (wealth analysis), but also on the household's financial situation (analysis of energy bills, income and additional debt capacity…). On this basis, he builds up a work program, adapted to the needs and budget of the household. So PSEE does not have a special approach before going to the house and analysing their financing situation. Most of them are in this category for economic reasons.
Number of demo homes of this type:	499 demos
Carbon savings:	1901 t_{CO2}/year
Carbon savings calculation:	For all the demos, we make a thermal study to evaluate energy savings and carbon savings. We use the software called "DialogIE". Developed by the French Environment and Energy Management Agency.
Please add any pictures of installations of this type that you have	
Please provide a reference list of evidence for your installations provided on surfdrive. On the surfdrive, you will find information sheets about several renovation.	

Demo type D: Longer term phased retrofit PP7	
Short description	PP7 commissioned the alliance WoonWijzerWinkel / Klimaatroute to carry out door to door recruitment by providing energy scans if residents are interested in. On request could an energy advice be provided and further support until installation if requested. Residents are free to chose their owns contractors / installers. The alliance helps only on-demand. For each area, these activities have been commissioned leading to the results of model B&D. From these results it is possible to conclude that most residents take 1 to 2 measures at a time, in average 1,43 measures in the TRIPLE-A areas. The monitoring data are provided through these commissions by the alliance based on their CRM systems.
Number of demo homes of this type:	435 homes 1049 measures
Carbon savings:	624 ton CO2 / year
Carbon savings calculation:	Based on national prefix values from Dutch Ministery RVO/ Milieu Centraal
Please add any pictures of installations of this type that you have See website 'successverhalen' (success stories) and the list of cases provided on surfdrive: https://www.rotterdamenergiebesparing.nl/succesverhalen 	

Please provide a reference list of evidence for your installations provided on surfdrive. https://surfdrive.surf.nl/files/index.php/s/tFXN9Fu43yqylXP?path=%2FWP4%20DEMOnstration%20exemplars%2FO%204.1%20Demonstration%20exemplars%2FO4.1_Proof%20delivery%20exemplar_PP7