ClairCity: Citizen-led air pollution reduction in cities

D6.6 Policy Workshop – Last City

November 2019

Document Details

Authors	Stephan Slingerland (Trinomics) Irati Artola (Trinomics)
Contact	Stephan.slingerland@trinomics.eu Irati.artola@trinomics.eu
Creation Date	25/10/2019
Date of Last Revision	22/11/2019
Description	The aim of the Policy Workshop (PW) is to define the final city 'Unified Policy Scenario' that has the support of the policy makers and to hear the reflections from policy makers regarding how to best implement the proposed measures. The starting point are the scenarios developed by citizens at the Stakeholder Dialogue Workshops. This document provides the results of the PW carried out in each city/region (other than Bristol) as part of WP6 namely: Amsterdam, Sosnowiec, Ljubljana, Aveiro and Liguria. The report therefore builds on D6.5 Policy Workshop – First City (Bristol), after which the approach to the PW was adapted. Where possible, Bristol has been included in the analysis. The document also describes the design of the workshop and explains how the PWs link to previous and upcoming ClairCity activities.

Version History

Version	Updated By	Date	Changes / Comments
V1.0	Irati Artola	25/10/2019	Set-up template, first full draft compiling individual reports developed by City Buddies.
V1.1	Stephan Slingerland	28/10/2019	Comments on first draft.
V2.0	Irati Artola	06/11/2019	Addressing comments, adding overarching analysis of Policy Workshops.
V3.0	Enda Hayes	17/11/2019	Review, minor comments and clarfiication of key points.

V3.0	Irati Artola	Second half of November	Addressing feedback, improving readability, expanding analysis of results, including Liguria inputs.

Contributions and Acknowledgements

The authors from Trinomics would like to thank City Buddies and City Partners for sending detailed minutes of the PW according to the the template provided.

Contributors	Vera Rodrigues, Myriam Lopes (UAVR) Natalia Dziurowicz (Sosnowiec City Hall) Sabina Popit (Ljubljana City Hall) Nadja Zeleznik (Trinomics subcontract, foremerly REC) Carlo Trozzi (TECHNE) Patrizia Costi (Regione Liguria)
Project internal comments	Enda Hayes (UWE)

Table of Content

1 Introduction

The aim of the Policy Workshops (PWs) is twofold: 1) to define the final city 'Unified Policy Scenario' that has the support of the policy makers and 2) to have policy makers reflect on the measures in the citizen scenarios. The starting point are the scenarios developed by citizens at the Stakeholder Dialogue Workshops.

This document provides the results of the PW carried out in each city/region as part of Work Package 6. At the PW Claircity city and reach partners along with local stakeholders and citizens have discussed the policy and political feasibility of the scenarios resulting from the Stakeholder Dialogue Workshop (SDW) together with policy makers.

This report builds on D6.5 Policy Workshop – First City (Bristol). Based on the results of this workshop and the lessons learned from the application of the PW methodology, the approach to future PW across the remaining five ClairCity case studies was further finetuned and partly adapted. This document describes the new design of the policy workshops (after Bristol) and explains how the PWs link to previous and upcoming ClairCity activities.

Each city/region has been responsible for preparing and implementing the PW in their own city/region. Trinomics provided the overall design for the workshop and guidelines to implementation. As such, the way each city has carried out the PW and/or the way the city has reported on each activity varies slightly (as can be observed in this report). The outcomes of each PW have also been discussed between Trinomics and the local city partners at individual teleconferences.

Participants to the PW signed consent forms, allowing the ClairCity project to use pictures of the event for our deliverables.

This report contains:

- The objectives of the PW (Chapter 1.1)
- The explanation of how this activity links to other elements of ClairCity (Chapter 1.2)
- The workshop design (Chapter 2)
- Overarching conclusions drawn from the PWs (Chapter 3)
- The detailed results of the PW per City/Region (in the order in which the workshops have taken place) (Chapters 4-9)
- The guidelines developed by Trinomics (WP6 leader) in order to support city partners in the preparation and implementation of the Policy Workshop in their city/region are included (Annex 1).
- An example of the invitation letter sent to policy makers (Annex 2)

1.1 Objective of this report

The PW activity is part of 'WP6 – Policy & Governance' and specifically 'Task 6.4 - Post WP4 analysis (stakeholder engagement activities) of the scope for more stakeholder inclusive air quality policies and integrating results from WP5'.

Within the Grant Agreement: Description of Action Task 6.4 / PWs were described as follows:

"After the stakeholder engagement activities described in WP4, workshops will be held with policy makers in each of the case study cities. Aim of these workshops is to discuss lessons learned from the engagement activities and the perceptions of policy makers of how the engagement of stakeholders can lead to more effective air quality policies in their city in the future. A comparison will be made between the different context and proposed policies for each of the case study cities. Policy makers in each city will get the opportunity to review and react to other cities' approaches and to judge the feasibility of these specific approaches for their own city. In addition to feedback to the six pilot cities, the policy results can be shared with the International Associated Cities to allow them to reflect on the recommendations and their applicability in the context of their own city's air quality and carbon challenges."

This report presents the PW summaries for the five city/regions (Amsterdam, Sosnowiec, Ljubljana, Aveiro and Liguria) undertaken between March and October 2019. The PW summary for Bristol was previously report in D6.5 although some of the Bristol data and reflections are presented in this report.

1.2 The positioning of the Policy Workshops in the ClairCity process

The ClairCity Project (www.claircity.eu) aims to substantially improve future air quality and carbon policies in European cities by initiating new modes of engaging citizens, stakeholders and policy makers. The latest social science thinking is applied to understand citizens' behaviour and source apportion air pollution emissions and concentrations, carbon emissions and health outcomes in order to attribute them not just by technology but by citizens' behaviour and daily activities. By putting people at the heart of both the problems and the solutions (primarily framed around transport and domestic energy use), ClairCity stimulates the public engagement necessary to tackle our challenging problems through the development of a range of citizen-led future scenario and policy packages. The four primary objectives of the ClairCity project are:

1. To put citizens' behaviour and activities at the heart of air quality and carbon management and policy making;
2. To develop a suite of innovative toolkits for enhanced quantification, engagement and impact evaluation;
3. To explore the integration of citizens behaviour in relevant city policies and ensure that future city policies are reflective of citizens visions for their future city; and
4. To raise awareness of environmental challenges and their solutions through proactive dissemination of the project outcomes.

The ClairCity process has three key process phases with a number of activities which work towards achieving the project aims and objectives. These three phases and related activities are briefly summarised here and illustrated in **Error! Reference source not found.** to help the reader understand the flow of evidence and the positioning of the Policy Workshops within the wider ClairCity process. This process has been applied across all six ClairCity case study areas with some localisation and adaptation as required.

1.2.1 Phase 1: Establish the Baseline Evidence

The primary aim of Phase 1 is to understand and quantify the baseline status of air quality, carbon emissions and related public health in our cities. Phase 1 is achieved with the following main activities:

1. **Benchmarking behaviour**: Understanding the local demographic data and establishing the citizen practice-activity data to feed into the air quality models (WP3).
2. **Quantify the baseline**: Quantification of the baseline air quality emissions and concentrations, carbon emissions and public health impacts in our city (WP5).
3. **Assessment of Policy**: Collation and analysis of current policies (local, regional, national and EU) that influence the city (WP6).

1.2.2 Phase 2: Citizen and Stakeholder Engagement & Co-creation of Scenarios

Phase 2 has three key aims: (1) understand citizens' current behaviours, practices and activities, (2) enable citizens and stakeholder to co-create and visualise their low carbon, clean air, future city and (3) raise awareness of the environmental challenges and their solutions. Phase 2 utilised evidence from Phase 1 to help frame and inform the engagement activities. Phase 2 is achieved with the following main activities:

Citizen and stakeholder engagement & co-creation

1. The ClairCity Delphi method uses citizens as local experts to generated qualitative evidence of their entrenched behaviours and what enabling interventions would allow them to act and behave differently in future (WP4).
2. The Mutual Learning Workshop brings citizens and stakeholders together to debate the challenges facing the city and co-create policy interventions for cleaner, healthier futures (WP4).
3. The ClairCity Skylines Game 'crowd-sources' the public perceptions and public acceptability of difference policy interventions (WP4)
4. Citizens and stakeholders come together in a Stakeholder Dialogue Workshop to review and debate the Delphi, Mutual Learning Workshop and ClairCity Skylines evidence and co-create scenarios for a low carbon, clean air, health futures (WP4 and WP7).
5. The scenarios generated in the Stakeholder Dialogue Workshop go through a rapid quantification step (WP5) and are then returned to the local citizens/stakeholders to discuss in a Policy Workshop (WP6) and to agree a single Unified Policy Scenario (WP7).

Public Engagement & Awareness: Additional awareness raising activities are also implemented across the project in each city (WP4). These include:

1. The GreenAnt App which allows citizens to becomes a citizen scientist and monitoring their transport activities, emission generation and exposure using mobile GPS data.
2. The School Competition: My City, My School, My Home engages young people in the air quality, carbon and public health debate utilising an online platform for the students to select the interventions that influence their housing, transport and use of resources in order to be able to design tools for change towards smart consumption, reduced emissions and healthy lifestyles.

3. Learning from the elderly filming activity engages the older, potentially vulnerable, community to talk about the changes in their city, their personal mobility and the steps they take to minimise their exposure.
4. The City Day: Discovering my City helps disseminate the final project results and provide healthy and smart tips to promote non-motorised mobility of citizens by highlighting availability and benefits of walking and cycling routes in the city.

1.2.3 Phase 3: Quantified Policy Package & Knowledge Exchange

The primary aim of the final Phase 3 is to collate the evidence and lessons learned from Phase1 and Phase 2 to generate a quantified, bespoke, citizen-led and citizen-inclusive policy package for each city. Phase 3 is achieved with the following main activities:

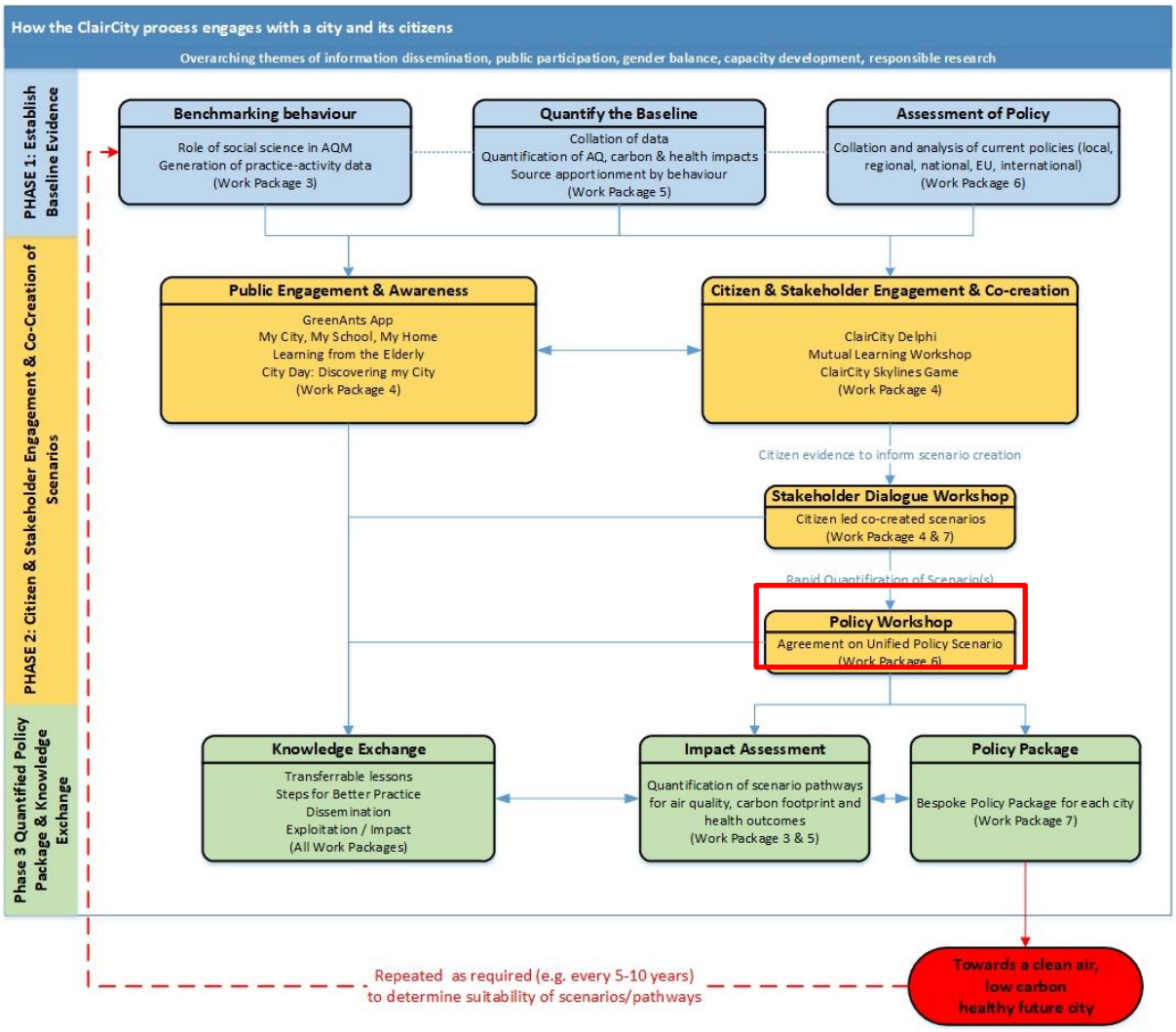
1. **Knowledge Exchange**: Collation of transferrable lessons and steps for better practice based on the experiences of the ClairCity project to inform other environmental and public health practitioners (WP3, WP4, WP5, WP7).
2. **Impact Assessment**: Rapid quantification of the scenarios generated in the Stakeholder Dialogue Workshop (WP4) and detailed impact assessment of the final Unified Policy Scenario generated in the Policy Workshop (WP6). This quantification includes an assessment of the source apportionment by behaviour or purpose; air quality emissions and concentrations, carbon emissions, air pollution related health impact and interventions cost analysis (WP5).
3. **Policy Package**: Development of a bespoke Policy Package for each city drawing together the findings from across the whole project (WP7).

The timeline for the policy workshops within ClairCity is given in Table 1-1.

Table 1-1 agreed timeline of the policy workshops across ClairCity cities / regions

City	Stakeholder Dialogue Workshops	Policy Workshops	Final Policy package
Bristol	29 June 2018	8 November 2018	April 2019
Amsterdam	23 January 2019	27 March 2019	December 2019
Ljubljana	15 April 2019	17 June 2019	December 2019
Sosnowiec	17 April 2019	12 June 2019	December 2019
Aveiro	24 May 2019	19 July 2019	December 2019
Liguria	27 May 2019	24 October 2019	December 2019

Figure 1-1 ClairCity process including key phases and activities (Policy Workshops are highlighted in red box)



Outputs of the PW are the Final City 'Unified Policy Scenarios' which WP5 will proceed to model in detail (air quality, carbon, economic, health impacts are to be modelled). The results of the modelling are core inputs to the **Final City Policy Packages (D7.4 and D7.5).** Finally, based on the six Final City Policy Packages (D7.4 and D7.5), a **Cross-city Policy Analysis Report (D7.6)** will be prepared that will contain main policy recommendations for other non-ClairCity cities that wish to implement citizen-inclusive air quality and carbon policies in their city.

2 Policy Workshop Design

2.1 Objective of the Policy Workshop

The **objectives** of the PW are twofold:

1. to define the Final 'Unified Policy Scenario' that has the support of the city policy makers, and
2. to collect reflections of policy makers on the policy measures proposed by citizens (including hurdles and ways to overcome such when possible).

This is done by discussing the policy and political feasibility of the scenarios resulting from the Stakeholder Dialogue Workshop (SDW). The discussion with policy makers around these scenarios will feed into the final ClairCity policy recommendations to be included in the Final ClairCity Policy Packages.

2.2 Target audience / participants

The target audience or the PW are civil servants - and, if considered possible in the local policy context, politicians and councillors - from the following departments: air quality, climate change, energy, transport, city planning and public health. Citzens were not invited at this stage as the aim of the PW was to discuss with decisionmakers, the scenarios that citizens came up with. The local ClairCity partners are tasked with running the PW.

2.3 Development of the scenarios presented at the workshop

The main inputs for the PW are the SDW scenarios consisting of a set of measures and the timelines in which those measures should be implemented. From these scenarios a HIGH and LOW ambition scenario were prepared for each measure. How this was done as well as the process for designing scenarios are explained in D4.6 Stakeholder Dialogue Workshops Complete – Last city (November 2019). Those scenarios were brought to the PW for discussion with policy makers. The HIGH and LOW scenarios are illustrated in Table 1-1 with the example of Amsterdam (the rest of the cities followed this design).

Table 2-1 SDW scenarios in Amsterdam

#	Measure	Proposed scenario LOW	Proposed scenario HIGH
1	Cleaner buses	Half of the buses emission-free (100% electric or hydro-powered) by 2025	All buses emission-free (100% electric or hydro-powered) by 2022
2	Better public transport	Increase network density from the net and increase frequency by 2030	Increase network density from the net and increase frequency by 2030
3	More bike paths and bike parking spots	40,000 new bike parking spots by 2030. Improving current bike pathways and fast bike routes (bike	60,000 new bike parking spots by 2025. Improving current bike pathways and fast bike routes (bike highways) by 2022

		highways) by 2025	
4	Cheaper public transport	Price of public transport remains the same until 2030	Price of public transport becomes 50% cheaper for everyone
5	Environmental zone for polluting cars	Maintain current environmental zones	Adding an environmental zone for private cars and making current environmental zones more stringent
6	More parking for cars	Maintain the current number of parking spots	Remove 7,000-10,000 parking spots (approx. 10% of the current parking spaces in the city centre) and charge €7.50 per hour everywhere in the city by 2020
7	Limiting car-traffic in the city centre	Maintain current legislation for cars (i.e. reducing car traffic by one-way roads and splitting up traffic routes)	Cars in the city centre are only allowed for people living there
8	Accelerating energy-efficient house renovations	All houses belonging to housing associations reach an energy label B or C by 2050	All houses belonging to housing associations reach an energy label A by 2050
9	Ban wood stoves and fireplaces in houses and bars & restaurants	Ban wood stoves and fireplaces in both new buildings and existing buildings from 2025	Ban wood stoves and fireplaces in both new buildings and existing buildings from 2025
10	Accelerate the uptake of solar panels in the built environment	Maintain current regulation. No incentives from the Municipality of Amsterdam to promote solar energy (except for housing associations)	Mandatory solar panels in all suitable roofs and provide subsidies for it
11	Amsterdam gas-free	€2,500 subsidy per household in order to facilitate renovation to become gas-free. No obligations for the building sector.	€10,000 subsidy per household in order to facilitate renovation to become gas-free. Mandatory gas-free building sector by 2030.

2.4 Key activities

The PW takes around 2.5 to 3 hours to implement. The generic programme of the PW is presented in Box 1. The aim is to run the workshop in a plenary fashion (no break-out groups or “tables”).

Box 1 Example Policy Workshop Programme

14.00 – 14.10	Welcome and introduction to ClairCity
14.10 – 14.30	Presentation: citizen activities & possible impacts of citizen scenarios
14.30 – 14.45	Short introductory discussion about current city policy
14.45 – 15.30	Working session: discussing policy scenarios from citizens
15.30 – 15.40	Break
15.40 – 16.20	Continuation of working session
16.20 – 16.30	Wrap up. Concluding remarks/recommendations by participants.
16.30	End

2.4.1 Short introductory discussion about current city policy

This first activity functions as "warm up" activity. The guiding question for this session is:

> *What are in your opinion the impacts, costs and public support of current air quality policy in your city?*

The aim of this short introductory session is to get an overall feeling for how the participants think about current policies – are they generally happy about current policy ambitions or not? This will set the scene for the following, more detailed working session and serve as a "warming-up" for the workshop participants and moderator.

To answer this question three statements are presented to the whole group and participants are invited to answer those for the whole group. The three are as follows:

> *Statement 1 - "The set of air quality and climate policies currently in place in the city/region are enough to achieve the goals set by the city/region"*
>
> *Statement 2 - "Air quality and climate policy in the city/region is too expensive"*
>
> *Statement 3 - "Air quality and carbon policy in the city/region has not enough support from citizens"*

2.4.2 Working session: discussing policy scenarios from citizens

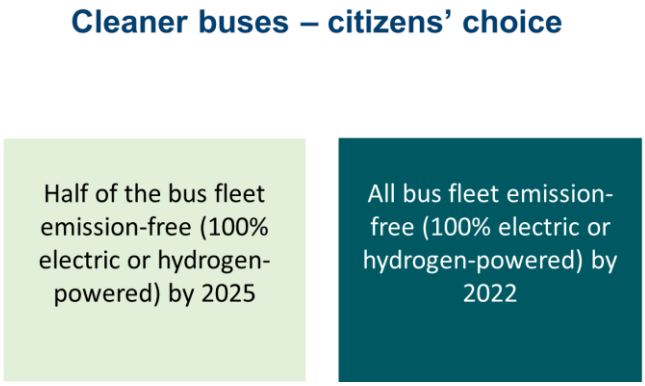
There are three guiding questions for this session:

1. What is the most realistic ambition level for each measure? (from the two ambition levels presented - outcome of the SDW) Choose one.
2. What does it take to implement such and who should be the responsible authority?
3. What are barriers to be overcome?

To answer the first question, for each measure, two options (resulting from the SDW) are shown to policy makers. Policy makers are also reminded of what current policy is. Figures 2-1 and 2-2 illustrate this.

Figure 2-1 Slide on current policy

Figure 2-2 Slide on citizens' scenarios (low & high) for policy makers to choose from



The most realistic ambition level (low or high) can be decided either via *voting / count of hands* (this may be useful if the group is large) or through *consensus.* If the decision is made through voting, a facilitator should note down the number of votes for each option e.g. on a flipchart and do the counting to see which of the options wins. These measures together constitute the ClairCity Final Unified Policy Scenario. At the workshop these are typed into a new PowerPoint slide and showed at the end, providing the group with a holistic picture of the package of measures.

For each measure, one by one, it should be discussed what it takes to implement such (Q2) and what the barriers are (Q3). These reflections are important considerations for preparing the final policy recommendations for each city.

2.4.3 Wrap up: Concluding remarks/recommendations by participants

This is a short slot to invite concluding remarks/recommendations by participants. The ClairCity Final Unified Policy Scenario is shown in a PowerPoint slide and policy makers are asked to reflect on how everything fits together and whether there is anything missing, illogical about the

scenario. To make this session more efficient participants are guided through a 'facilitated' discussion. Questions in this phase include:

- Do the chosen ambition levels fit together?
- Are there any crucial policy measures missing

3 Analysis of the Policy Workshop Outcomes

In this chapter we analyse the results overall.

In total, the PW across ClairCity case studies have mobilised 82 participants of which 46 male and 36 female. The composition of participants varied in each city / region but everywhere a right mix of relevant policy advisors, councillors, municipal department responsible was gathered together (please refer to the participants sections in the city-by-city chapters below for further detail). A headcount of people per expertise / topic is not provided as several participants covered many areas. Politicians (councillors) only attended the workshops of Bristol and Ljubljana.

City/Region	Total # Participants	# female	# male
Bristol	18	8	10
Amsterdam	6	3	3
Sosnowiec	20	14	6
Ljubljana	12	7	5
Aveiro	6	3	3
Liguria	20	11	9
Total	82	46	36

3.1 Reflections on current air quality and climate policy

Below we present a synthesis of the three questions discussed at the start of the PW in Amsterdam, Sosnowiec, Aveiro and Liguria.[1] These discussions served to set the context for the workshop.

[1] Ljubljana did not carry out this exercise and the design of the PW in Bristol did not include this activity.

3.1.1 Do the participating policy makers consider current policy measures as sufficient in order to reach the goals set?

Three out of four cities (Amsterdam, Sosnowiec, Liguria) state that current policy is not enough to achieve goals set by the city. Amsterdam believes further/stricter energy and transport measures are necessary to achieve air quality and climate goals set by the city. Sosnowiec would like to see more subsidies for homeowners in order to improve their heating systems. Liguria argues that an update of the regional plan for air quality and greenhouse gases is necessary. In Aveiro the feeling is that the region is already doing what is at their hands to improve air quality and reduce carbon emissions, although the effectiveness of measures is questioned as illustrated in the quotes below.

"There are measures being already implemented across all municipalities. However, the effectiveness of some of them is doubtful." {Aveiro}

"There is a tendency to follow popular trends (i.e. in one municipality a cycle lane was built and was quite well received by the population; after that everyone is building cycle lanes)." {Aveiro}

3.1.2 Are air quality and climate policies too expensive?

Amsterdam is the only city that thinks air quality and climate policies as such are not too expensive. Amsterdam also considers mobility and energy are to be way too cheap, leading to people consuming lots of these. Sosnowiec, Ljubljana and Aveiro think air quality and climate policies are expensive both for the city and for citizens, and cities as well as citizens lack funds for implementing such. Liguria states that the local and regional budget needs to be supported by national and European funds. An interesting remark from Liguria is that currently very high costs are incurred for emergencies while mitigation policies could prevent risks and hence reduce emergency expenses.

In the cities that considered air quality and climate measures expensive to implement, the cost of measures was raised again (a few times) when discussing measures and barriers to their implementation in the exercise that followed.

3.1.3 Do policy makers feel that air quality and climate policy have enough support from citizens?

Policy makers in the four cities consider that citizens support air quality and climate goals overall but at the same time experience that citizens are not too keen on policies that require tinvestments or a change of behaviour from their side ("not in my backyard").

"There is a lot of citizen support for measures such as the environmental zone and the banning of scooters and mopeds in particular" {Amsterdam}

"The interest of residents in the exchange of stoves is high, but there is a serious financial barrier (it is not profitable for citizens)"{Sosnowiec}

These thoughts came back in the exercises when discussing the measures and barriers for these (e.g. unwillingeness to change behaviour from citizens).

3.2 Reflection of policy makers' views on citizens-proposed policies

The composition of policies that result from the PW is the same as the composition of policy measures selected by citizens at the SDW. PW participants do not have the power to veto measures but can set the level of ambition choosing between the HIGH and the LOW ambition measure. The following table provides a snapshot of these data per city.

Table 3-1 Number of policies per category in each city

City / Region	PUBLIC TRANSPORT policies	PRIVATE VEHICLES policies	ACTIVE TRAVEL policies	ENERGY policies	OTHER policies
Bristol[2]	2	4	1	2	2 (property development, equality)
Amsterdam	3	3	1	4	-
Sosnowiec	3	3	1	2	1 (industry)
Ljubljana	4	3	3	-	-
Aveiro	3	4	2	-	1 (industry)
Liguria*	1	3	1	1	1 (other transport measure)

**One measure i.e. "" addresses both 'public transport' and 'private vehicles'. This measure has been counted in both categories.*

Overall, there is a mix of policies in each city selected by citizens in each city, with public transport and private vehicles policies slightly more represented compared to active travel policies. The most energy policies are found in Amsterdam, which also reflects the importance of energy in the public discussion. In Ljubljana, deliberately no energy policies were generated by the SDW which reflects the dominance of transport policies in the public debate[3]. Private vehicle related policies were proportionally most important in Liguria. Four out of the six case studies (Bristol, Amsterdam, Ljubljana and Liguria) discussed measures around a so-called "environmental zone". Measures regarding rail transport were addressed explicitly only in Ljubljana and Liguria. Liguria was the only case with an explicit measure on electro-mobility for private cars.

[2] The policy deck discussed in Bristol included: 1. Ban most polluting vehicles, 2. Buses greener & cleaner, 3. Cheaper public transport, 4. Good alternatives to car use (walking & cycling), 5. Charge polluting vehicles entering the city, 6. Reduce private car road space, 7. Improve energy efficiency in housing, 8. Promote electrical vehicles, 9. Increase solar & wind, 10. Property developers to consider air quality and climate changs, 11. Spread economic opportunities across the city.

[3] Ljubljana and its suburbs used to suffer from much more fog and unpleasant smell due to heating and this is no longer the case so heating related pollution is no longer a priority. Energy tends to be half a year at the center of interest, during the heating season.

Overall, mobility related policies dominate the measures discussed at the PW (whether these are public transport policies, policies targeting private vehicles or policies to foster active travel). Active travel policies mostly regard cycling, with only Aveiro proposing a specific measure to foster walking. Energy policies were input for the PW in Sosnowiec and Amsterdam only. Ljubljana exclusively focused on transport measures. Bristol is the only city with an 'equality' policy namely *'spread economic opportunities across the city'*. The set op policy measures of a few of the cities / regions included measures that do not require behaviour change of citizens. More specifically Sosnowiec and Aveiro included industry measures.

3.2.1 Analysis of level of ambition chosen for specific policies

Table 3-2 Ambition levels of policies chosen by policy makers

City/Region*	Total measures (#)	# of LOW ambition policies chosen	# of HIGH ambition policies chosen
Amsterdam	11	3	8
Sosnowiec	10	7	3
Ljubljana	10	6[4]	4
Aveiro	10	4	6
Liguria**	6	3	3
Total	48	24	24

***The design of the Bristol PW did not include choosing ambition levels for policies – Refer to D6.5 Policy Workshop – First City for the Bristol PW design.*
***Liguria worked with a CURRENT vs HIGH scenario (instead of a LOW & a HIGH scenario) where CURRENT ambition means existing/planned policy ambition. For the sake of comparison the CURRENT has been considered the LOW ambition scenario.*

The PW showed differences in the ambition level of policy makers across the six cities (Table 3-2). While in Amsterdam and Aveiro policy makers backed more high ambition options than low ambition options, in Sosnowiec and Ljubljana the lowest ambition level was chosen more often. It should be noted that Ljubljana gave a MEDIUM ambition to four of it's measures (meaning the HIGH ambition was too high and the LOW ambition was too low) which we have counted on the table as LOW, given that a MEDIUM option officially was not allowed in the excercise. Also Liguria has a slightly different design, where policy makers had to decide between the CURRENT and a HIGH ambition. For the sake of comparison between cities we have considered the CURRENT ambition as the LOW option.

Table 3-3 shows which HIGH and LOW measures were in each city/region. The combination of these measures per city forms the Unified Policy Scenario (UPS) of that city/region.

Table 3-3 Overview of LOW vs HIGH ambition policies per city

City/Region	LOW ambition policies	HIGH ambition policies
Amsterdam	- Half of the buses emission-free (100% electric or hydro-powered) by 2025	- Increase public transport network density and increase frequency by 2030

[4] All 'medium' rated policies have been considered LOW for comparison purposes, as 'medium' was not an option to be considered.

	- Price of public transport remains the same until 2030 - All houses belonging to housing associations reach an energy label B or C by 2050	- 60,000 new bike parking spots by 2025. Improving current bike paths and fast bike routes (bike highways) by 2022 - Adding an environmental zone for private cars and making current environmental zones more stringent - Remove 7,000-10,000 parking spots (approx. 10% of the current parking spaces in the city centre) and charge €7.50 per hour everywhere in the city by 2020 - Cars in the city centre are only allowed for people living there - Ban wood stoves and fireplaces in both new buildings and existing buildings from 2025 - Mandatory solar panels in all suitable roofs and provide subsidies for it - €10,000 subsidy per household in order to facilitate renovation to become gas-free. Mandatory gas-free building sector by 2030.
Sosnowiec	- Free public transport on days with high level of air pollution by 2020 - Replace 10% public transport fleet with zero-emission vehicles by 2030 - 90% public transport journeys on schedule and most areas catered for by 2020 - Replace 10% cars with EVs and 100 EV charging points installed by 2025 - Ban diesel cars from the city centre on days with level of air pollution by 2050 - Ban on domestic coal heating in districts with the highest concentration of air pollution by 2025 - Reduce industrial emissions by 25% by 2025	- 20 km of new cycle lanes and 15 new cycle parking spaces by 2020 - 80% modal shift from private to public transport or active travel by 2025 - Replace 100% heating systems > 10 years old by 2021
Ljubljana	- Half of the public transport fleet fulfils standard EURO VI by 2025 - Increase of public transport for 10% by 2027 - Public transport is made 50% more expensive to finance and co-finance other sustainable transport solutions in the city. - New and modified cycling routes - 10% by 2021 - No increase in the number of dead	- Designing new areas with limited access for vehicles and strengthen requirements for access to existing areas. - Incentives and subsidies for car-free neighbourhoods by 2027. - Parking norms (reduced to 0.5 per new apartment by 2020. - Implementation of the Railhub solution by 2027.

	and injured pedestrians and cyclists until 2027 within the ring road - Electromobility is left to the market	
Aveiro	- Ban diesel cars/HGVs in urban centres - Impose stricter regulation on polluting industries - Encourage replacement of older public transport fleets - Subsidise public transport tickets	- 300 km of new urban cycle lanes and 200 new cycle parking spaces by 2035 - 50% modal shift from private cars to active travel and public transport by 2025 - 100 km of new/renewed pedestrian routes by 2025 - Transform 100% of the current parking spaces to free parking for EVs by 2035 - 10% commuters work from home 1 day a week by 2030 - 100% public transport journeys on schedule with all urban areas catered for by 2025
Liguria	- Ban diesel cars and light vehicles less than or equal to the EURO 5 category by 2025 in urban areas - Reduction of heavy vehicle traffic by 30% by 2035 and by 50% by 2050 - Reduction of residential consumption by 10%, and consumption in the service sector by 16% in 2030	- Increase integrated local public transport network use (including car sharing), from 25.4% to 31.5% by 2029, and from 31.5 in 2029 to 45% by 2050 - Install an adequate number of charging stations for 50% of the circulating electric vehicles (including car sharing) and replace 50% of vehicles circulating in urban areas with electric cars and motorcycles by 2050. - Increase in % of private trips by bicycle or on foot in the metropolitan area from 23.2% in 2029 to 35% in 2050

3.2.2 Analysis of types of policies chosen

The vast majority of measures across all cities can be seen as 'mitigation' measures aimed to reduce air pollution structurally. Only Sosnowiec included two more "reactive" measures that can be considered rather 'adaptation' measures namely *'Free public transport on days with high level of air pollution by 2020'* and *'Ban diesel cars from the city centre on days with level of air pollution by 2050'*.

There is, however, neither a set of preferred measures, nor a general ambition level for measures that can be concluded for all the cities. In other words, each city/region has different priority measures and views on how far they can go implementing those measures.

A few patterns can be seen though. For example *cheaper / subsidised public transport* did not get back up from policy makers in any of the cases (it received a LOW ambition level in all cases). At the same time Ljubljana was the only city that had a policy option to make transport more 'expensive' (the rest of the cities either had a policy to make public transport 'cheaper' or didn't have a measure on price of public transport at all). Also *cleaner public transport*, was given the LOW ambition in all cases. Generally, the reasons for opting for a LOW ambition level (in these

two cases but also for the rest) were the cost of measures and the fact that the timeframe proposed in the HIGH option was unrealistic. Amsterdam, Ljubljana and Liguria are ambitious when it comes to policies to discourage car use; Sosnowiec and Aveiro less so.

An interesting finding is that overall policy makers found the measures presented to them (which emerged from citizens in each city/region) reasonable, and discrepancies lied mostly on timeframe/ambition level for those (citizens typically want more ambitious measures and faster implementation). This shows that there is quite some common ground between what citizens want and what policy makers think they can implement. Against this backdrop,

two conclusions that can be drawn are:

> **(1) The ClairCity method provides a co-creation model of policy making between citizens and policy makers which seems feasible in all cities;**
>
> **"(3) The ClairCity process funnels and refines policies from the citizens to the policymaker. This results in a set of fairly ambitious policies, but it also filters out the most radical / innovative policies."**

On a city by city basis, the decisions on whether a LOW or a HIGH ambition policy was selected were justified as follows:

Amsterdam is the city which chose the highest number of HIGH ambition measures. The reason why for some of the policies a HIGH ambition has been selected is achievability (e.g. the option for introducing an *'environmental zone for polluting cars'* is already being researched; having a *'Ban wood stoves and fireplaces in houses and bars & restaurants'*, although hard to enforce, has gained more and more public acceptance; for the *'uptake of solar panels in the built environment'* a higher ambition is credible as solar panels are very popular in Amsterdam). An exception is *'Amsterdam gas-free*' for which the LOW ambition level was considered too low and the HIGH ambition level was considered too high – but closer to reality. The most realistic way to approach it according to policy makers is to maintain the current implementation target (2040), making switching as attractive as possible to the frontrunners and then gradually switching to a policy that increasingly taxes the laggards. Measures for which a LOW ambition was chosen concern just the introduction of *'cleaner buses'*, *'accelerating energy-efficient house renovations'* and '*cheaper public transport'*. For the first it was considered that the current ambition[5] is already very high and that the HIGH ambition options (going beyond current policy) were unrealistic. The HIGH option on *'cheaper public transport'* was considered "reckless and not in line with other policy ambitions". Rather make driving a car more expensive in order to change relative costs of public transport versus the private car as an alternative.

In **Sosnowiec**, the HIGH ambition option was chosen mainly for policies that were already binding (e.g. Replacing 100% of the heating systems that are >10 years old by 2021 is already imposed by the anti-smog resolution) or underway to being achieved (e.g. cycling has already high acceptance and is explanding fast enough to rich the HIGH ambition option). The reason to

[5] All buses emisison free by 2025 and all housing with an average label C and B by 2030 respectively

go for the LOW ambition in the remainder of the policies is mostly cost (a financial barrier has been identified for *'Make public transport free/cheaper'*, '*Reduce emissions from public transport'*, *'Encourage/incentivise electric vehicles'* and *'Reduce emissions from domestic heating'*). Another justification to opt for the LOW option the fact that the timeframe proposed by the HIGH scenario was unrealistic (this is the case for *'Improve the public transport service/connectivity'* and *'Reduce emissions from domestic heating'*). Education / awareness raising is an improtant enabler identified in Sosnowiec in order to convice citizens about sustainable mobility and heating options.

In **Ljubljana** policies scored HIGH are those that have to do with '*New areas for non-motorized traffic (pedestrian and bicycling areas)*', '*Change of parking norms*' and '*Regional public passenger transport'* and *'Rail transport increase'*. The change in parking norms is already a planned measure and the rail transport increase is seen as essential to support the huge increase in the number of passengers, mainly student, expected in the coming years. To protect the areas for non-motorised traffic, policy makers think that "penalties against offenders should be clearly defined and further enforced". The *'Greening of the fleet for public transport'* was given a LOW ambition due to the lack/cost of charging stations. *'Cheaper public transport'* was also given a LOW ambition as it was considered that a decrease in price would not really increase the number of users of public transport. *'New cycling routes and connections'* was given a LOW priority mainly because the target / timeline was too ambitious in the HIGH option.

In **Aveiro** the ambition is highest for virtually all policies directed at facilitating active travel and improving public transport. *Lowering the fees of public transport* and *replacing the bus-fleet for cleaner buses* are unpopular measures among policy makers primarily for costs reasons. A few policies have been rated HIGH because they are "easy to implement" according to policy makers (e.g. *Promoting working from home, increasing space for pedestrians*). For other measures the HIGH option has been chosen because external factors are favourable (e.g. the current real estate market situation is favourable to *investments in cycling lanes and storage*). Barriers to the measure *'Increase provision and reliability of public transport services'* for which the HIGH option was chosen are the fact that a private operator has the monopoly, which in turn leads to a lack of competitive alternatives and to a lack of inspections on performance. The way to stimulate the also HIGH rated measure on '*Creating school and workplace travel plans'* would be mainly awareness raising to change current habits (e.g to increase uptake of active travel and public transport instead of private cars).

In **Liguria**, the ambition is HIGH for measures discouraging private cars by *improving public transport* and *encouraging active travel*. A change in behaviour of citizens (i.e. shift from private cars to public transport) is seen as a major barrier, partly due to public transport not being optimal, which relates to the lack of space and the costs implied in improving the network. However the recent collapse of the Morandi bridge in the city of Genoa has brought opportunities, unlocking new investments for the modernization of the bus fleet and providing an opening to the development of new transport habits and ways of organising city. Policymakers in Liguria think that reduced rates for public transport could also help encourage people to step out of their private cars. Shifting to *electric mobility* is also considered a HIGH priority for private vehicles and it is partly being facilitated – through financial incentives – since the Morandi bridge collapse. '*Banning diesel vehicles and the most polluting motorcycles in the city'* and *the 'Reduction of energy consumption in housing and buildings'* were given LOW ambition. The former have to do

with the resistance of citizens to change (partly due to habits, partly due to comfort) and could be overcome, according to policy makers, by raising awareness on air quality and carbon emission issues as well as by implementing policies that discourage private car use (and that way encouraging public transport use). The latter faces financial barriers both for citizens as well as the region and also requires awareness raising.

4 Amsterdam Policy Workshop

The PW in Amsterdam took place on 27 March 2019. In total six participants (three male; three female) attended the workshop consisting of policy advisors on air quality (from environment and health department), transport advisors and emission-free public transport experts (from transport and public space department). From ClairCity, three City Buddies (from Trinomics) and two City Partners (GGD Amsterdam) attended.

4.1 Result of Policy Workshop activities

4.1.1 Short introductory discussion about current Amsterdam policy

Statement 1 - *"The set of air quality and climate policies currently in Amsterdam are sufficient to achieve the goals set by the city"*

Responses / discussion:

- No, at this moment they are not enough. The new city council coalition is even more ambitious than the previous one. Policy makers/ civil servants are currently writing the roadmaps on how to achieve the revised policy ambitions. Unless specific measures are taken, the objectives aimed at won't be achieved.
- Climate objectives will be harder to achieve than the air quality objectives.
- Population increase is a hindrance – while energy use decreases per capita, increased population can offset this.

Statement 2 - *"Air quality and climate policy in Amsterdam is too expensive"*

Responses / discussion:

- No, it's not too expensive (unanimous response);
- Mobility and energy are actually too cheap and therefore we consume a lot, drive a lot etc.
- The city budget is probably too limited.

Statement 3 - *"Air quality and carbon policy in Amsterdam has not enough support from citizens"*

Responses / discussion:

- There is a lot of citizen support for measures such as the environmental zone, and the the banning of scooters and mopeds in particular[6].
- There is less support for measures that require investment and behavioural changes from citizens.

[6] Although in the public consultation process carried out by the Amsterdam municipality previously there were also many negative reactions, particularly related to making helmets obligatory but also about the environmental zone.

4.1.2 Working session: discussing policy scenarios from citizens

In the working session, all 11 measures were discussed one by one. For each measure, one out of two ambition levels selected by citizens was chosen and comments were made on the way this ambition could be best realised.

Participants considered all measures to fit well together. There were no specific remarks on details that stood out when seeing all chosen ambition levels together, nor remarks on ambition levels that would mutually exclude each other.

In practice, too little time was dedicated to the question “who needs to do what?”. It was therefore advised to the four remaining cities (where the PW still had to be held), to pay more attention to this question.

Table 4-1 Policy Workshop Unified Scenario in Amsterdam based on Policy Workshop outputs and current policy baseline

#	Measure	Low option	High option	Chosen	Comments ('Main barriers to be overcome, ways to overcome these barriers = 'implementation plan')
1	**Cleaner buses**	Half of the busses emission-free (100% electric or hydrio-powered) by 2025	All busses emission-free (100% electric or hydro-powered) by 2022	Low option	• This has to be achieved by 2025 (current policy) because the alternative is to buy diesel busses again and that is very undesirable. • Not the low and not the high seem suitable. The low scenario is achievable, but not ambitious enough (it should be 100% - so current policy) but the high scenario is too ambitious, not achievable. Most realistic therefore is the low option. • Important barrier so far is that there are no fast-charging stations for busses – next year 7 charging polls will be installed, for 200 buses of the total fleet now. • GVB, the municipality and the Vervoerregio Amsterdam are the three parties involved that have to share costs. Policy issue at the moment is who has to pay for what exactly. • Total electricity demand is not a problem at the moment – there are only 200 buses and overall they do not require much electricity compared to other sources (planned data centres are a real issue in terms of electricity consumption). • Hydrogen is staying behind as an energy source for buses. There are 2 hydrogen buses now . 20 more will be running soon in the Netherlands (Groningen). This is currently heavily subsidised, by EU funds. But other than this it's very expensive, there are no fuelling possibilities yet etc. • Current batteries are not yet strong enough for the larger buses in Amsterdam. Night buses do have a charging problem (as the same buses are currently also used during the day, but would need time to recharge) • The electric busses can ride 80 km at the moment (which is not enough for a full day service). That means more busses and more charging points are needed. Finding charging points and permits for that take long. • The flix-bus (Amsterdam-Brussels) goes apparently electric • Touring cars (coming to Amsterdam from elsewhere) unlikely to go electric
2	**Better public transport**		Increase network density from the net and increase frequency by 2030	High option	• Nobody is against this really, but against what costs? • Higher density might lead to problems: More stops in a bus-line lead to more commuting time and then public transport becomes less appealing. • Inside the Amsterdam "ring" network density is really high (highest in the Netherlands, according to participants) but outside the ring travelling times are an issue. • There is currently no vision on how the public transport network will look like in 2030, not even at the Municipality. • There are also compaints about noise in certain streets where tram transport has been increased. Trams make a lot more noise than other means of transport.
3	**More bike paths and bike parking spots**	40 000 new bike parking spots by 2030. Improving current bike pats and fast bike routes (bike highways) by 2025	60 000 new bike parking spots by 2025. Improving current bike pats and fast bike routes (bike highways) by 2022	High option	• Not pleasant to ride a bike in Amsterdam anymore – very busy, not safe, uncivilised behaviour. • Additional comments David Gelauff, manager biking programme Amsterdam: next to 40 000 places aimed for in previous programme, current ambition now is to realise 40 – 60 000 places on top of that in new policy document 'Meerjarenprogramma Fiets'. This programme is also more ambitious in terms of new infrastructure and behavioural and innovation aspects aimed at. Most ambitions are outside the ring, where current cycling percentage is 25-30%. That should be increased to get close to levels within ring, currently 56-57%.
4	**Cheaper public transport**	Price of public transport remains the same until 2030	Price of public transport becomes 50% cheaper for everyone	Low option	• High option ('cheaper public transport') is reckless and not in line with other policy ambitions. • Rather make driving a car more expensive in order to change relative costs of public transport versus the private car as an alternative.
5	**Environmental zone for polluting cars**	Maintain current environmental zones	Adding an environmental zone for private cars and making current environmental zones more stringent	High option	• The high ambition is achievable and ways of implementation of a environmental zone for cars are currently investigated since this is the ambition of the new city council coalition. • How much support there is from citizens for an environmental zone for cars hasn't really been researched. • Only %24 people in Amsterdam own a car, which is very low. The zone would therefore affect in particular commuters.
6	**More parking for cars**	Maintain the current number of parking spots	Remove 7.000-10.000 parking spots (approx. 10% of the current parking spaces in the city centre) and charge € 7.5 per hour everywhere in the city	High option	• High option with a 'but' – Participants fully agree with the removing parking spaces part, but a high parking tariff outside the ring (centre) is probably not feasible.

			by 2020		
7	**Limiting car-traffic in the city centre**	Maintain current legislation for cars (i.e. reducing car traffic by one-way roads and splitting up traffic routes)	Cars in the city centre are only allowed for people living there	High option	• High option with a 'but' – What it's mean by 'city centre' should be more exactly specified and there should be exemptions for people who need access for e.g. medical reasons, for deliveries to shops and for clean cars.
8	**Accelerating energy-efficient house renovations**	All houses belonging to housing associations reach an energy label B or C by 2050	All houses belonging to housing associations reach an energy label A by 2050	Low option	• The question behind these options is "how fast can we isolate our houses"? It's very expensive to isolate all houses to an A level. • Housing associations and Municipality need to pay for this. • Distinction needed between the kind of houses. 17th century monumental buildings in the city centre (although usually not owned by housing corporations) and other older buildings will be very hard to isolate to the desired levels. • Probably the current level of policy ambitions is already very high, therefore rather the lower option seems realistic to achieve.
9	**Ban wood stoves and fireplaces in houses and bars & restaurants**		Ban wood stoves and fireplaces in both new buildings and existing buildings from 2025	High option	• Good option to develop policies here, but they will be very difficult to enforce. • The current alderman is slightly more open for this (previously it was really a no-go) • Public opinion on this issue is changing rapidly, leading to increasing support for measures (e.g. there's been a recent research in Utrecht about a national ban on this and public support for a ban was quite high).
10	**Accelerate the uptake of solar panels in the built environment**	Maintain current regulation. No incentives from the Municipality of Amsterdam to promote solar energy (except for housing associations)	Mandatory solar panels in all suitable roofs and provide subsidies for it	High option	• There is scope for a higher ambition, as solar panels are very popular in Amsterdam. • Bigger projects are already subsidised (SDE Subdidy) • Making something "mandatory" is always very difficult issue, but can be used as a last resort. However, making non-solar more expensive by way of taxation would be probably more feasible than an obligation. • Outside Amsterdam the fact that the network cannot sustain all capacity is an issue but in Amsterdam city this is not a hurdle.
11	**Amsterdam gas-free**	€2,500 subsidy per household in order to facilitate renovation to become gas-free. No obligations for the building sector.	€ 10.000 subsidy per household in order to facilitate renovation to become gas-free. Mandatory gas-free building sector by 2030.	High option	• The HIGH option is rather unachievable (2030), it's 10 years before current policy and "mandatory" but the LOW option is not ambitious enough so the high option is closer – <u>but needs reformulating</u>. • Most realistic is to maintain the current implementation target (2040), making switching as attractive as possible to the frontrunners and then gradually switching to a policy that increasingly taxes the laggards. • If people are going to be burderened in some way (e.g. noise, difficult appliances – heat pumps), that needs to be taken into account and mitigated.

5 Sosnowiec Policy Workshop

The PW in Sosnowiec took place on 12 June 2019. A total of 20 participants (14 male; 6 female) attended the workshop: 11 councillors; a plenipotentiary of the Mayor for Air Quality; a plenipotentiary of the Mayor for External Funds and Social and Municipal Policy; the chairman of the City Development and Environmental Protection Committee; the chairwoman of the Health, Family and Social Policy Committee; the chairwoman of the Budget Committee; the Head of Road Administration Department; the Head of Environmental Protection Office, Ecology and Waste Management Department; an Employee of the Municipal Economy Department (district geologist); an Employee of the Municipal Energetics Office, Municipal Economy Department. Participants from ClairCity consisted of one Moderator and three facilitators.

Figure 5-1 PW in Sosnowiec

5.1 Result of Policy Workshop activities

5.1.1 Short introductory discussion about current Sosnowiec policy:

Statement 1 - *" The current activities undertaken in Sosnowiec are sufficient to achieve the objectives set by the current policy"*

Responses / discussion:

- The biggest problem in Sosnowiec is that there is not enough governmental money for the replacement of the oldest furnaces. Residents cannot afford the cost of a new heating system, as only the replacement of the furnace is subsidized. In addition, only houses inhabited by a minimum of two families are eligible to this subsidy. There is a need to extend this support to carbon-heated houses inhabited by more than two families.
-
- There is no legal obligation to join the heating network. It is necessary to introduce national regulations that oblige residents the to join such a network where it exists (under the same conditions as the statutory obligation to join the sewage network).
- The quality of the public transport fleet is good, but traveling by public transport is unattractive - there are too few connections, buses and trams do not arrive on time, residents do not want to use this type of transport because of the long travel time and

the fear of being late. One of the participants proposed raising ticket prices in order to improve the frequency of connections for the money obtained; funds for improving public transport can also be obtained by introducing paid parking lots in the city.
- There are few trees in the city. More trees and green belts should be planted along the roads. It is necessary to tighten the regulations regarding permits for construction projects that go at the expenses of green areas.
- There is a need to strengthen educational activities involving people for direct actions, e.g. planting trees, ecological tours for children, because such activities give the best results. These activities should be directed at (raising awareness of) young generations, as these are the future adults.

Statement 2 - *"Air quality policy in Sosnowiec is too expensive"*

Responses / discussion:

- Clean air activities are very costly, the city is unable to cover their costs with own funds, external financing is. We also need EU funds.
- The city makes a lot of efforts to obtain external funds, e.g. we have obtained significant funds for the development of tram transport - fleet modernization and expansion of connections. This is very important because tram is one of the most important means of public transport in the city and in the region. The city allocates its own financial resources for subsidies for residents, for replacing furnaces and installations for renewable energy sources, but this is not sufficient. Residents also have the option of using co-financing from national and regional programs, such as the Clean Air Program, but this not sufficient..

Statement 3 - *"Activities for air quality undertaken in Sosnowiec by the city have not enough support from citizens"*

Responses / discussion:

- The interest of residents in the exchange of stoves is high, but there is a serious financial barrier (it is not profitable for citizens) - only replacement of the furnace is subsidized, and the costs of installation have to be covered by own funds and subsequent payments related to the new fuel (gas, electricity) are expensive.
- We do not need individual emergency measures but a lot of aggregated activities - paid parking lots, zones excluding car traffic, development of a public tram network in such a way that it is accessible to all residents.

5.1.2 Working session: discussing policy scenarios from citizens

The main criterion for the selection of measures (LOW vs HIGH option) was the financial situation of the city, solutions for which the city has adequate resources were taken into account. Seven decisions were made by consensus, and in case of discrepancies in opinion, the decision was made by voting.

Table 5-1 Proposed Policy Workshop Unified Scenario in Sosnowiec based on Policy Workshop outputs and current policy baseline

#	Measure	Low option	High option	Chosen	Comments ('Main barriers to be overcome, ways to overcome these barriers = 'implementation plan')
1	Make public transport free/cheaper	Free public transport on days with high level of air pollution by 2020	Free public transport by 2025	Low option	• Too big of a financial barrier. The local government is not able to cover the costs of implementing free public transport from its own budget. For transport enterprises and for the metropolis, which is responsible for organizing the public transportation in the whole region, it will be too much financial burden. • Ticket prices are not high plus there are already discounts for youth, free transfers for senior citizens, monthly and quarterly passes. • Free public transport passes will probably not increase the number of people who use it.
2	Reduce emissions from public transport	Replace 10% public transport fleet with zero-emission vehicles by 2030	Replace 50% public transport fleet with zero-emission vehicles by 2022	Low option	• The biggest constraints are the lack of charging stations (plan being prepared at the moment) and the financial barrier. • When it comes to the individual vehicles, the barrier is also economic – it is hard to induce inhabitants to replace their diesel cars with very expensive electric cars.
3	Improve the public transport service/connectivity	90% public transport journeys on schedule and most areas catered for by 2020	100% public transport journeys on schedule and most areas catered for by 2020	Low option	• Low scenario has been chosen because the timeframe proposed by citizens is too short for implementing this measure. To reach 100% of journeys that are on schedule and with connections in most areas, it needs a longer time perspective than 2020.
4	Create/increase cycle lanes and infrastructure (storage, security)		20 km of new cycle lanes and 15 new cycle parking spaces by 2020	High option	• No barriers. The program of bicycle lanes expansion in Sosnowiec is developing very good, at present, the city is almost reaching the ambitious measure established by this scenario.
5	Encourage/incentivise electric vehicles	Replace 10% cars with EVs and 100 EV charging points installed by 2025	Replace 50% cars with EVs and 500 EV charging points installed by 2030	Low option	• Financial barrier – high costs of buying electric cars for individuals – it needs government subsidy for purchase as well as for the construction of charging points enabling traveling on longer distances.
6	Restrict (polluting) vehicles	Ban diesel cars from the city centre on days with level of air pollution by 2050	100% ban on fossil fuelled vehicles by 2025	Low option	• Participants have chosen the low option, but they would like to ban diesel cars from the city centre on days with level of air pollution in a faster perspective – by 2025, except for public transport – because the transport company has just bought new diesel buses). • The way to overcome the barrier is education of residents, consulting the plans for introducing the ban with them and gradually convincing them to such solution.
7	Raise public awareness of health/environmental impacts of air pollution	10% modal shift from private to public transport or active travel by 2030	80% modal shift from private to public transport or active travel by 2025	High option	• The main barrier is the lack of support from residents, who do not want to give up the convenience of driving their cars. • Another obstacle is poor quality of public transport – low frequency, bad accessibility in some areas. • The city intends to allocate funds for social campaigns aimed at convincing residents to give up driving a car and and more frequently use of public transport, cycling or walking.
8	Reduce emissions from domestic heating	Ban on domestic coal heating in districts with the highest concentration of air pollution by 2025	100% ban on domestic coal heating by 2020	Low option	• A low scenario has been chosen because 2020 is too short for implementing this measure. • Participants decided, however, that it should be possible to introduce such a ban sooner than the low scenario assumes. • The ban should cover the entire city. Introducing it only in specific districts, where the greatest emission of pollutants from coal-fired households occurs, will not bring the expected results, because the wind transfers pollution. • The main barriers relate to finance - as already mentioned earlier, the costs of installation and

					subsequent exploitation are high - and the associated resistance of residents. In addition, from the next year, co-financing from the municipal budget for replacement of the furnace will not include coal-fired furnaces (currently old coal stoves are replaced with newer-generation coal stoves). The municipal financing program will be continued on changed conditions. • Another barrier is the fact that heating networks are not available everywhere.
9	Replace old domestic heating systems	Replace 75% heating systems > 10 years old by 2025	Replace 100% heating systems > 10 years old by 2021	High option	• The high scenario has been chosen because the measures contained in it are imposed by the binding anti-smog resolution. • Obstacles hindering the implementation of this scenario is social resistance and associated financial barrier (financial situation of both residents and municipality) - stoves replacement is in 80% co-financed by the city. • Ways to overcome barriers: through an educational campaign, convincing residents of the benefits of such a solution for their health and quality of life, and the introduction of a control system and penalties for residents polluting the air – municipality will continue activities related to the control of stoves exchange and enforce it from residents.
10	Reduce industrial emissions	Reduce industrial emissions by 25% by 2025	Reduce industrial emissions by 50% by 2025	Low option	• The low option has been chosen because the high one is unrealistic. Currently industrial plants are concerned with increasing their production, which causes more pollution. In addition, Sosnowiec is also polluted by plants from other cities that are in the immediate vicinity of Sosnowiec. • A legal barrier has been recognized - the municipality does not have legal means to enforce the reduction of emissions. We cannot impose on the plants greater reduction of emissions than the legal provisions regulate.

6 Ljubljana Policy Workshop

The Policy Workshop (PW) was organized in Ljubljana on the 21st of June 2019. The PW was attended by 12 participants (7 male; 5 female) representing Ljubljana City municipal departments and units responsible for energy efficiency, planning, environment, transport, EU cohesion and EU projects, urban institutes on national, regional and city level, representative of Ljubljana public transport. One representative from the Ljubljana City Hall and one City Buddy (formerly from REC, currently subcontracted by trinomics) facilitated the session.

Figure 6-1 Participants of the PW in Ljubljana

6.1 Result of Policy Workshop activities

6.1.1 Short introductory discussion about current Ljubljana policy

Ljubljana did not carry out this first (warm-up) activity and proceeded directly to discuss the policy and political feasibility of the scenarios resulting from the SDW (developed by citizens).

6.1.2 Working session: discussing policy scenarios from citizens

Each of the measures were discussed with policy makers answering the three guiding questions namely ‘What is the most realistic ambition level for each measure?’, ‘What does it take to implement such and who should take action?’ and ‘What are barriers to be overcome?’.

In addition to discussing the measures, some other issues that influence city policy were pointed out. For example, that city policy should be harmonised with state legislation and strategies, which sometimes differ from city ambitions. It was also mentioned that transport in the region is expected to drastically increase in next five years and that this should be taken into account in planning. According to policy makers, national companies (e.g. state rail company) should be more involved in city policy. An issue which was not mentioned at the PW was traffic regulation, which in the past years has changed notably in Ljubljana, among other to improve roads.

The group of participants concluded that PW provides a good tool for discussion of the possible vision, strategies and measures for improvement of air quality in the city. Therefore, it seems desirable for city authorities to run such a workshop on a more regular basis.

Table 6-1 Proposed Policy Workshop Unified Scenario in Ljubljana based on Policy Workshop outputs and current policy baseline

#	Measure	Low option	High option	Chosen	Comments ('Main barriers to be overcome, ways to overcome these barriers = 'implementation plan')
1	Green fleet for the Ljubljana Passenger Transport (LPP)[7]	Half of the public transport fleet fulfils standard EURO VI by 2025	Low-emission public transport fleet until 2027	Low	• Lack of electricity charging stations. • High investment. • A plan needed to decide how to finance the activities. • Need to investigate the construction of a metro in Ljubljana.
2	Higher frequency of buses and inclusion of train transport in city traffic	Increase of public transport for 10% by 2027	Increase of public transport for 100% by 2027	Medium (30 % by 2027)	• Public transport is the backbone for the transportation in Ljubljana, but the Slovene rail company is not prepared to take the transport from the regional and even wider area to Ljubljana. As such, smaller buses with higher frequency should be introduced in Ljubljana for within the city travel. • There are discrepancies between national and municipal decision makers around transport policies. • A committee should be established to adress challenges and find the solutions.
3	Cheaper public transport	Public transport is made 50% more expensive to finance and co-finance other sustainable transport solutions in the city.	Public transport is made 50% cheaper for all.	Medium	• The eligibility criteria for the Eco-fund calls should be adapted so public companies can also apply. This doesn't guarantee lower transport prices as efficiency is not a criteria taken into account for granting subsidies (so the criteria for efficiency should be made mandatory when tendering). Currently, yearly loses of LPP are covered by the municipality. • The majority of employees are already compensated for transport as part of their income. • Vulnerable groups, like unemployed and disabled have free transport already. • Another possibility is to have free transport and to pay the compensation subsidies' amount directly to public company. • A decrease in the price of transport would not necessarily lead to an increase use of public transport, so the ambition of the chosen measure is medium.
4	New areas for non-motorized traffic (pedestrian and bicycling areas)	Maintaining the current range of pedestrian areas.	Designing new areas with limited access for vehicles and strengthen requirements for access to existing areas.	High	• New areas for non-motorized traffic should be introduced outside the city center. • The policy of penalties against offenders should be clearly defined and then also implemented. • To tackle the problem of massive amounts of delivery vans – coexisting with pedestrians in rush hour- good practices from other cities should be explored (e.g. pickup points and delivery by city carts with manual delivery).
5	New cycling routes and connections	New and modified cycling routes - 10% by 2021.	New and renovated cycling routes - 50% by 2021.	Medium (30 % by 2021)	• An integrated territorial plan has been and includes also new cycling routes. More cycle lanes will lead to more cyclists. • The most challenging is how to integrate lanes for bikes with car roads. There is currently also tension between pedestrians and cyclists. The width of the lanes for buses and cars need to be adjusted.
6	Safe cycling and walking in the city	No increase in the number of dead and injured pedestrians and cyclists until 2027 within the ring road.	0 dead or heavily injured pedestrians and cyclists until 2027 within the ring road.	Medium	• The commitment is zero deaths the inner ring. That would need to implement a real speed limitation to 50 km/h in the inner ring and 30 km/h in the city centre. • The law does not follow technology. Modern electric vehicles (like scooters and boards) are supposed to go on the sidewalk and not on bike lanes -according to the law- whereas they can readh higher speeds than bikes themselves. The legal system should be flexible and should accommodate new technological development.

[7] Public transport company

7	Independence from the car	Car sharing is left to the market.	Incentives and subsidies for car-free neighbourhoods by 2027.	High	• The measure should be aimed to make a roadmap for car-free neighborhoods. • If we want neighborhoods without cars, this means that people do not own their cars. Instead there would be car-sharing. • Construction of houses require until today the building of parking places. This will now be changed from municipality spatial plans (OPN – občinski prostorski načrt). • The developers should allocate money into a fund that helps finance the mobility plan for the neighbourhood. In parallel, an awareness campaign has to be carried out.
8	E-mobility	Electromobility is left to the market.	Each neighbourhood has a mobility plan and shared ownership of e-vehicles by 2050.	Low	• Elektro Ljubljana just started to charge for the charging of electric vehicles • Emissions of particles do not come only from motor, but also from brakes and so on. • Today, the technology is available for public transport to run on electricity. • An integral assessment should be performed to understand the impacts of e-mobility on air quality.
9	Change of parking norms	Parking norms remain the same (1 parking space per 1 new apartment).	Parking norms (reduced to 0.5 per new apartment by 2020.	High	• Parking standards for new buildings are 0.5 paring per apartment in Ljubljana (this measure is planed) - see description in Measure 7.
10	Regional public passenger transport	Expansion of motorway and AC ring.	Implementation of the Railhub solution by 2027.	High	• Uncertaintly of whether there is enough capacity for daily commuters, now estimated to be about 160.000. • Ljubljana has “park and ride” areas at the main entrances to Ljubljana, they are used. • The frequency of buses would need to be increased. • The population of students is expected to rise radically in the next 5 years. Pressure on regional public passengers’ transport may be doubled in the next 5 years. This peak will last for 8-10 years. The city i not ready for that and yet there is no discussion about this challenge at the moment. It should be investigated how current public transport should be adjusted to the future situation and where the bottlenecks are. • Rail transport should be increased.

7 Aveiro Policy Workshop

The Aveiro PW took place on 19 July 2019, at the CIRA facilities in Aveiro.

The group of six participants (3 male; 3 female), from the municipalities of Anadia, Estarreja, Ílhavo, Oliveira do Bairro, Ovar and Sever do Vouga, consisting of political advisers, had the following municipal competences:

- Anadia - Education and Protection of Children and Youth;
- Estarreja - Financial and Public Expenses; Public Works and Environment; Supply and Warehouses);
- Ílhavo - Regional and Urban Planning; Natural Resources, Environment and Heritage; Mobility and Accessibility
- Oliveira do Bairro - Planning and Urbanism; Geographic Information Systems; Industrial Areas; Fees and Licenses - namely Advertising, Markets and Fairs, Cemeteries, Metrology, Operation Hours, Occupation of Public Spaces, Various Activities; Water and Sanitation; Environment and Urban Hygiene; Forests and Agriculture; Green Spaces and Municipal Parks; Communications Management, Energy and Public Lighting, Traffic and Toponymy; Urban union; Trade shows and other similar events; Innovation space;
- Ovar - Youth and Entrepreneurship;
- Sever do Vouga - Territorial Administration / Urbanism, Mobility and Transport, Planning, Environment, Industrial Areas, Energy and Sustainability.

The ClairCity team (from the University of Aveiro and the CIRA), was composed of two moderators, five facilitators (one from CIRA), and 1 photographer.

Figure 7-1 Participants pf the PW in Aveiro

7.1 Policy Workshop activities

7.1.1 Short introductory discussion about current city policy

Statement 1 – "*The current activities undertaken in the Aveiro region are sufficient to achieve the objectives set by the current policy*"

Responses / discussion:

- The Aveiro Region is generally working on towards the improvement of air quality.
- There are measures being already implemented across all municipalities. However, the effectiveness of some of them is doubtful.
    a. Often, cycle lanes are built outside the urban area, for leisure purposes and not for commuting;
- There is some integrated public transport, but with residual use and with time constraints.
- There is a tendency to follow popular trends (i.e. in one municipality a cycle lane was built and was quite well received by the population; after that everyone is building cycle lanes).
- Mobility is a very important issue in the Region, with critical problems which are difficult to solve at a regional level. Municipalities are very different in terms of orography. Overall problems with electric car batteries should not be forgotten.
- Since the car is still the easiest/more comfortable option, people prefer it over public transport.
- The PW participants were a bit surprised with the outcomes from the Delphi exercise for the Region, mainly in terms of future visions for mobility (with less cars) as people are currently very attached to their cars. Behavioral changes need to start at individual level. Since in Aveiro Region you do not have any difficulties to park your car (only in Aveiro municipality you will find a payed parking), it is hard to change citizen's behavior.
- The PW participants showed some doubts about the applicability of European legislation on the limits and requirements for the Portuguese case.
- We need to support and promote citizens awareness campaigns. There is a great need to increase citizens awareness.
- Scientific studies could be more effective when focused in specific problems (e.g. already identified), proposing a specific set of mitigation measures with a high level of effectiveness to tackle the problem. In that way, policy and decision makers will be much more open to scientific outcomes.

Statement 2 – "*Air quality and climate policy in Aveiro is too expensive.*"

Responses / discussion:

- Renewing a fleet for electric and hybrid vehicles requires a great financial effort, although there is acceptance that this is the trend.

- In the Aveiro region it is easy to drive.
- Municipalities have low own income and the financial effort is very high.

Statement 3 – "*Air quality and carbon policy in the Aveiro region has not enough support from citizens"*

Responses / discussion:

- The quality of the public transport fleet is good but traveling by public transport is unattractive.
- There is a need to strengthen educational activities involving people and policies.

7.1.2 Working session: discussing policy scenarios from citizens

Participants reflected on each measure at a time by answering to the three guiding questions (What is the most realistic ambition level for each measure? What does it take to implement such and who should take action? Which are the barriers to overcome?) and chose an ambition level from the two levels (low and high). Decisions were made both by consensus and through voting.

The 10 selected ambition levels, constituting the Final "Unified Policy Scenario", were presented in a PowerPoint slide that was being prepared by a facilitator during the workshop. The measures were generally discussed together. No specific comments were made, and no additional measures were suggested.

Table 7-1 Proposed Policy Workshop Unified Scenario in Aveiro based on Policy Workshop outputs and the current policy baseline

#	Measure	Chosen ambition	Chosen policy measure	Comments ("Main barriers to be overcome, ways to overcome these barriers = 'implementation plan'")
1	Build segregated urban cycle lanes and create secure cycle storage/parking	High	300 km of new urban cycle lanes and 200 number of new cycle parking spaces by 2035	• Financial effort of cycle lanes in urban areas is greater (greater constraints in the public space) when compared to cycle lanes in leisure areas. • At the moment, external factors (real estate market situation) favorable. • Bigger accountability required from municipalities.
2	Create school and workplace travel plans to increase uptake of active travel and public transport	High	50% modal shift from private cars to active travel and public transport by 2025	• Cultural problem. • Public transportation is hard to implement and is unpopular. • The region has different characteristics among municipalities. • Raising awareness in schools (to younger people). • School transport network is already available financed by the Municipalities (with high cost) but it is not used as expected. • A lot of people think that they only have rights and no obligations, and just request and complain. • Younger generations more aware, that can induce the change of behaviour.
3	Reallocate road space to pedestrians and improve safety	High	100 km of new/renewed pedestrian routes by 2025	• Easy to implement from the perspective of urban regeneration. • Work has been done to remove physical barriers from the sidewalks (to make walking more pleasant) but barrier free sidewalks lead to people parking their cars in those areas. • Resistance of the population to the replacement of the typical Portuguese sidewalk by other cheaper, more practical and friendly for pedestrians.
4	Ban diesel cars/HGVs in urban centres	Low	10% ban of diesel cars and 25% HGVs in urban centres by 2025	• Lobby of electric vehicles against diesel vehicles, despite the efforts and investment of the transport industry in the reduction of emissions. • Limited application of the measure in some municipalities due to lack of alternative routes (e.g. Sever do Vouga). • Alternatives are a government responsibility. • Lack of compliance by some heavy-duty drivers. • Requires more inspection.
5	Allow free parking for electric vehicles only	High	Transform 100% of the current parking spaces to free parking for EVs by 2035	• The current policy measure is that '50% of parking spaces should be transformed into to free parking for EVs by 2035', while the LOW ambition level in the citizens scenarios aims only for 25%'. Policy makers unanimously agreed that the scenario should be at least the same as the current policy measure and so opted for the most ambitious option. • Most of the parking spaces are free. The few paid parking sites are usually managed by the private sector. • Municipalities do not have human resources available to carry out the supervision. • This measure seems more suitable for larger cities. Due to the cahracteristics of the CIRA, this measures is difficult to implement.
6	Promote working from home	High	10% commuters work from home 1 day a week by 2030	• It has no big economic costs. • It has mainly costs of adaptation. • It does not apply to certain services in the tertiary sector.
7	Impose stricter regulation on polluting industries	Low	Reduce industrial emissions by 15% by 2030	• Municipalities do not have much intervention room at this level. • Much of what could be done has already been done. • The central administration is the main responsible.
8	Encourage replacement of older public transport fleets	Low	Replace 15% public transport fleets with zero-emission vehicles by 2030	• A private company (Transdev) has the monopoly of the public road transport sector in the region. • There are no alternative companies. • The differences between the cities in the region poses difficulties in implementing an intermunicipal service. • Electric buses are very expensive; have autonomy problems; a lot of time is required to charge batteries.

#	Measure	Chosen ambition	Chosen policy measure	Comments (“Main barriers to be overcome, ways to overcome these barriers = ‘implementation plan’”)
9	Subsidise public transport tickets	Low	Public transport fares reduced by 50% by 2021	• Problems of financial sustainability of the measure after 2021. • Low rate of use. • Problems associated with population density and dispersion in the territories.
10	Increase provision and reliability of public transport services	High	100% public transport journeys on schedule with all urban areas catered for by 2025	• For this measure no HIGH or LOW were presented but only one one option was given namely “100% public transport journeys on schedule with all urban areas catered for by 2025” namely the high option, as at the SDW all citizens groups decided in that ambition level for that measure. Policy makers raised a few issues regarding this policy: • Monopoly of the Transdev company. • Lack of competitive alternatives. • Lack of inspection (municipal responsibility) with scarce human resources. • Data of the transport service are manipulated by the operators, to show that they comply with the schedules. • Permanent justifications for non-compliance with schedules: traffic issues, breakdowns, lack of drivers. • Creating a public mobility company would have serious cost implications, management problems, and increased charges for the end-users.

8 Liguria Policy Workshop

A total of 20 people (11 female; 9 male) particited in the Liguria workshop excluding the staff of ClairCity project (3 from Liguria Region, 2 from Techne Consulting). More specifically the participants were the following:

- 11 from Liguria Region (different departments: environment, infrastructure, health):
- 1 from IRE (company of the Region that deals with infrastructures, building renovation and energy)
- 3 from ARPAL (Environment Agency of Liguria region)
- 1 from Western Ligurian Sea Port Authority (which includes Genoa, Savona and Vado Ligure ports)
- 3 from Genoa Municipality
- 1 from AMIU (Multiservice and urban hygiene company)

Figure 8-1 PW in Liguria

8.1 Results of the Policy Workshop activities

8.1.1 Short introductory discussion about current city policy

Statement 1 - *"The set of air quality and climate policies currently in Genoa are enough to achieve the goals set by the city"*

Responses / discussion:

- The current air quality policies, to date, have not yet been sufficient to comply with regulatory limits for some pollutants such as average annual concentration NO_2. Exceedances of the EU O_3 target values also occur. Although urgent measures have been adopted to limit traffic between now and 2025, it would be also necessary to update the regional plan for air quality and greenhouse gases.

Statement 2 - *"Air quality and climate policy in Genoa is too expensive"*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 689289

Responses / discussion:

- The budget available to local and regional authorities for air and climate needs to be supported by national and European funds and strategies.
- At present, very high costs are incurred for emergencies. Mitigation policies involve investments but can prevent risks and hence reduce emergency expenses.

Statement 3 - ***"Air quality and carbon policy in Genoa has not enough support from citizens"***

Responses / discussion:

- Measures for road mobility and energy consumption of housing and tertiary buildings, which require initial investment costs, are not sufficiently supported by citizens.

8.1.2 Working session: discussing policy scenarios from citizens

For the measures listed in Liguria, policy makers were asked to discuss and choose between the CURRENT ambition level and a HIGH ambition level (this latter resulting from the SDW[8]). Overall the package of measures is consistent. A remark made was that technological scenarios for 2050 are difficult to imagine and seem rather unpredictable.

[8] Unlike in the other cities, the SDW scenarios were created with all participants in one table and so only 1 scenario could be derived from that: the HIGH scenario. Hence that the Liguria PW did not have a LOW citizen scenario to present to policymakers and therefore presented the HIGH ambition measures against the CURRENT ambition of measures.

Table 8-1 Proposed Policy Workshop Unified Scenario in Liguria based on Policy Workshop outputs and current policy baseline

#	Measures	Current policy	High option	Chosen	Comments ('Main barriers to be overcome, ways to overcome these barriers = 'implementation plan')
1 - 2	Improve collective transport services (local public transport and sharing) Improve integration between local/shared public transport and private transport	Increase the movement in the metropolitan area, on the integrated local public transport network, from 25.4% to 31.5 by 2029	Increase integrated local public transport network use (including shared vehicles), from 25.4% to 31.5% by 2029, and from 31.5 in 2029 to 45% by 2050	High	• Barrier: costs, travel time related to public transport. • Barrier: connections to the hill districts. • Barrier: insufficient infrastructure (railways / subway / electric lines) • Barrier: narrow roads, lack of space for differentiated lanes and road congestion which slows down public transport . • Difficulty changing transport habits • Opportunities: high % of use of local public transport in Genoa. • Opportunities: Strong investments for the modernization of the bus fleet (thanks to the emergency resources due to the collapse of the highway viaduct) and for the purchase of electric vehicles. • Opportunities: establishing new transport habits and organizing city / smart working schedules following the collapse of the highway viaduct. • Building of important works such as Genoa railway junction and metro extension. • Introducing service Contracts for the management of public transport services could be a way to overcome current barriers. • Implementation of urban sustainable mobility interventions related to electrified power lines in the protected area • Encourage shared mobility initiatives (bikes, cars, vans, motorcycles), alongside the use of public transport. • Reduced rates, integrated bus-train-extra-urban lines, electronic payment systems. • 5 new large Park & Ride areas are being built (Large parking lots with capacity up to 1000 parking spaces) linking to the large urban routes, the major motorway toll booths and the inclusion of local public transport in the main lines.
3	Prohibit diesel vehicles and the most polluting motorcycles in the city	Ban diesel cars and light vehicles less than or equal to the EURO 5 category by 2025 in urban areas	Ban diesel cars and light vehicles less than or equal to the EURO 5 category by 2025 in urban areas	Current Policy	• Difficulties of citizens to renounce to private vehicles due to necessity and habit. • Difficulties related to the application of adequate controls and the borders of areas. • Opportunities: seize traffic restriction policies as opportunities to establish habits in alternative and modern modes of transport by reducing distances on the road. • Opportunities: the growing sensitivity to the problem of climate change. • Adequate communication towards and awareness raising of citizens is necessary.
4	Encourage electric mobility (purchase and use of vehicles + charging points)	500 charging stations for electric vehicles installed by 2029	Install an adequate number of charging stations for 50% of the circulating electric vehicles (including car sharing) and replace 50% of vehicles circulating in urban areas with electric cars and motorcycles by 2050	High	• Encourage electric mobility with particular reference to 2 wheels-vehicles, given the high use of the motorcycles for private trips in Genoa; • In the case of cars, shared vehicles would be prioritised given the life-cycle impact of electric vehicles. • Charging stations are needed; • Threat: electric does not solve the problems of congestion and safety on the streets of Genoa; • Information for citizens regarding the technologies and benefits of electric vehicles;

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 689289

5	Encourage active travel (bike / walking)	Increase in % of private trips by bicycle or on foot in the metropolitan area from 22.9% to 23.2% by 2029	Increase in % of private trips by bicycle or on foot in the metropolitan area from 23.2% in 2029 to 35% in 2050	High	• Difficulty: Narrow roads, lack of spac. Hence the creation of cycle paths and sidewalks / pedestrian areas is in competition with other uses of roads (parking, car lanes, sidewalks) • Opportunity: recent development of electric bike technologies. • Need to create adequate routes / bicycle paths / parking lots / bike sharing systems • Adapt public transport to transport bikes • Adequate communication and awareness towards more active lifestyles to stimulate a change of habits among citizens starting from the younger generations • Increase safety and spaces dedicated to pedestrians
6	Transfer part of the goods traffic from road transport to rail transport	Reduction of heavy vehicle traffic by 30% by 2035 and by 50% by 2050	Reduction of heavy vehicle traffic by 50% by 2035 and by 70% by 2050	Current policy	• Difficulty: age and lack of lines and rail connections. • Difficulty: the trend is for port traffic to increase. • Opportunity: noise reduction. • Construction of infrastructure and rail connections with ports. • Improve logistics of port goods. • The goal depends on strategies and policies beyond the region.
7	Reduction of energy consumption in housing and buildings	Reduction of residential consumption by 10%, and consumption in the service sector by 16% in 2030	Reduction of residential consumption by 10%, and consumption in the service sector by 16% in 2030	Current policy	• Difficulty: high initial investment costs, low consumer awareness of the potential benefits of energy savings. • Difficulty: rather expensive incentive mechanisms for the Region. • Difficulties, regarding renewable energies, in reconciling production objectives with environmental objectives (safeguarding biodiversity, landscape constraints, dust emissions ...) • Future policies will have to consider the forecasts that energy consumption for winter heating will decrease and that electricity consumption for summer cooling will increase; • Opportunities: adaptation of regional policies to the new national strategy (SEN and PNIEC) • Innovation and competitiveness in the sectors of renewable sources production and energy efficiency. • Communication and public awareness.

9 Annex 1 – Internal facilitators' guide

0 **Set-up and registration**

Materials needed	Responsible
ClairCity banner	
Tables arranged in U-shape or similar and enough chairs	
Registration list for all attendees to sign	
Participants list, email addresses (for workshop team only)	
Consent form	
Badges for all participants	
Coffee / tea / water	
Laptop	
Pointer (optional)	
Beamer	
Microphone (optional)	
Printed template & pens for facilitator(s) to record conversations	

1 **Welcome (10')**

A ClairCity Buddy or City Partner to present ClairCity objective, place of the workshop in the overall project, workshop programme and practicalities.

Materials needed	Responsible
PowerPoint presentation	

2 **Presentation of activities with citizens and modelling results (20').** Presentation of the scenarios developed by citizens and their foreseen impacts on emissions / concentrations / health / costs.

See the presentation in annex 4.

Q&A

Materials needed	Responsible
PowerPoint presentation	

3 Short warming up discussion on current policy (15')
3 statements presented to participants who are asked to comment on each in a plenary fashion:

Statement 1 - "The set of air quality and climate policies currently in Amsterdam are enough to achieve the goals set by the city"

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 689289

Statement 2 - “Air quality and climate policy in Amsterdam is too expensive”

Statement 3 - “Air quality and carbon policy in Amsterdam has not enough support from citizens”

One facilitator at least (minute taker in this case) should note down discussions.

Materials needed (for each table)	**Responsible**
PowerPoint presentation (one slide which each statement)	

4 **Working session – policy scenarios from citizens (45’)** Presentation of the scenarios of citizens (per measure) for voting and discussion. 1. What is the most realistic ambition level (from the two presented) for each measure? 2. What does it take to implement such? 3. What are barriers to be overcome?

In a plenary fashion per measure a slide will be shown presenting two policy options per measure. Participants need to vote to choose for one. Once the counting of votes is done, participants are encouraged to raise a couple of ideas of what it takes to implement such. After a couple of participants have commented, immediately jump into the next question and so on. Once that’s done for all measures, the Final ClairCity Unify Policy Scenario has been defined.

One facilitator at least (minute taker in this case) should note down discussions as well as count the votes for each option – and write that down on the flipchart.

Materials needed (for each table)	**Responsible**
PowerPoint presentation (one slide with two policy options per measure)	
1 flipchart sheet - already marked with policy option A and policy option B (colum headings) per mesure (rows) to do the counting of votes	
Black marker	

5 **Break (10’)**

Materials needed	**Responsible**
Coffee / tea / water	
Biscuits	

6 **Continued working session (40’).** Continuation of the working session until all 11 measures have been decided upon.

Materials needed	**Responsible**
PowerPoint presentation	

7 **Wrap up (10’)** Discussion on the whole picture.

The Final ClairCity Unified Policy Scenario is presented in one slide. Participants are encouraged to discuss the whole picture (by means of a few pre-set questions such as: Do the chosen ambition levels fit together? Are there any crucial policy measures missing?

One facilitator at least (minute taker in this case) should note down discussions.

Materials needed	**Responsible**
PowerPoint presentation	

8 **End**

Closing workshop. Networking drinks when possible.

Materials needed	**Responsible**
Drinks (optional)	

After the participants have left the room:

- Short evaluation session between City Buddies and City Partners
- Minutes to be worked out directly after the workshop by facilitators if possible and sent to the modellers and to Trinomics. The qualitative part can be sent a couple of days after within on week of the workshop but the Final Unified Policy Scenario should be sent to WP5 and Trinomics immediately.

10 Annex 2 – Invitations to the PW

The following is the Policy Workshop invitation in Amsterdam (translated to English)

Dear colleague,

Hereby we invite you to a workshop on March 27 from 14.00-16.30 in which we discuss the view of “Amsterdammers” on policy measures for better air quality and energy saving. We would greatly appreciate your presence and therefore hope that you can participate!

Amsterdam will take significant steps in the coming years to improve air quality in the city and to reduce CO_2 emissions. But what do residents think of that policy? In the European ClairCity project, residents of Amsterdam and five other European cities were asked about what policies they would like to see implemented in their city. The results of the Amsterdam activities are presented in this workshop.

The measures chosen by residents concern cleaner buses, better public transport, reducing and cleaner cars, wood burning, energy-efficient homes, solar panels and natural gas-free.

You as a policy maker / advisor are invited in this workshop to comment on the feasibility of the ambitions of citizens and to indicate specific steps that would be needed for these ambitions could be realised.

Please confirm your attendance by accepting the outlook appointment invitation. Feel free to send the invitation to a colleague if you are unable to come.

Date & time: March 27, 14.00-16.30

Location: GGD, Nieuwe Achtergracht 100.

Room: B7.01 (7th floor)

Sincerely,

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 689289

11 Annex 3 – Consent forms example

This is the English version of the consent forms that each city translated and adapted to their context.

University of the West of England

Stephan Slingerland and Enda Hayes

stephan.slingerland@trinomics.eu

enda.hayes@uwe.ac.uk

www.claircity.eu

ClairCity: Citizen Led Air Pollution Reduction in Cities

Policymakers' Consent Form

I have read the information on the Participant Information Sheet and consent to taking part in the ClairCity project. ☐

I understand I will be interviewed and notes will be made about this interview. ☐

The quotes will be anonymised and then grouped with other participants, so my answers are not identifiable to me. ☐

In a very limited number of cases, the use of direct quotes that are identifiable to me might be considered. If so, I will be asked for separate consent. ☐

I understand I am free to withdraw from the study. ☐

Name _____

Position _____

Signature of Participant _____

Date _____

This study was given ethics consent by the Faculty Research Ethics Committee of the University of the West of England, UK, on behalf of the EU Commission. researchethics@uwe.ac.uk.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 689289