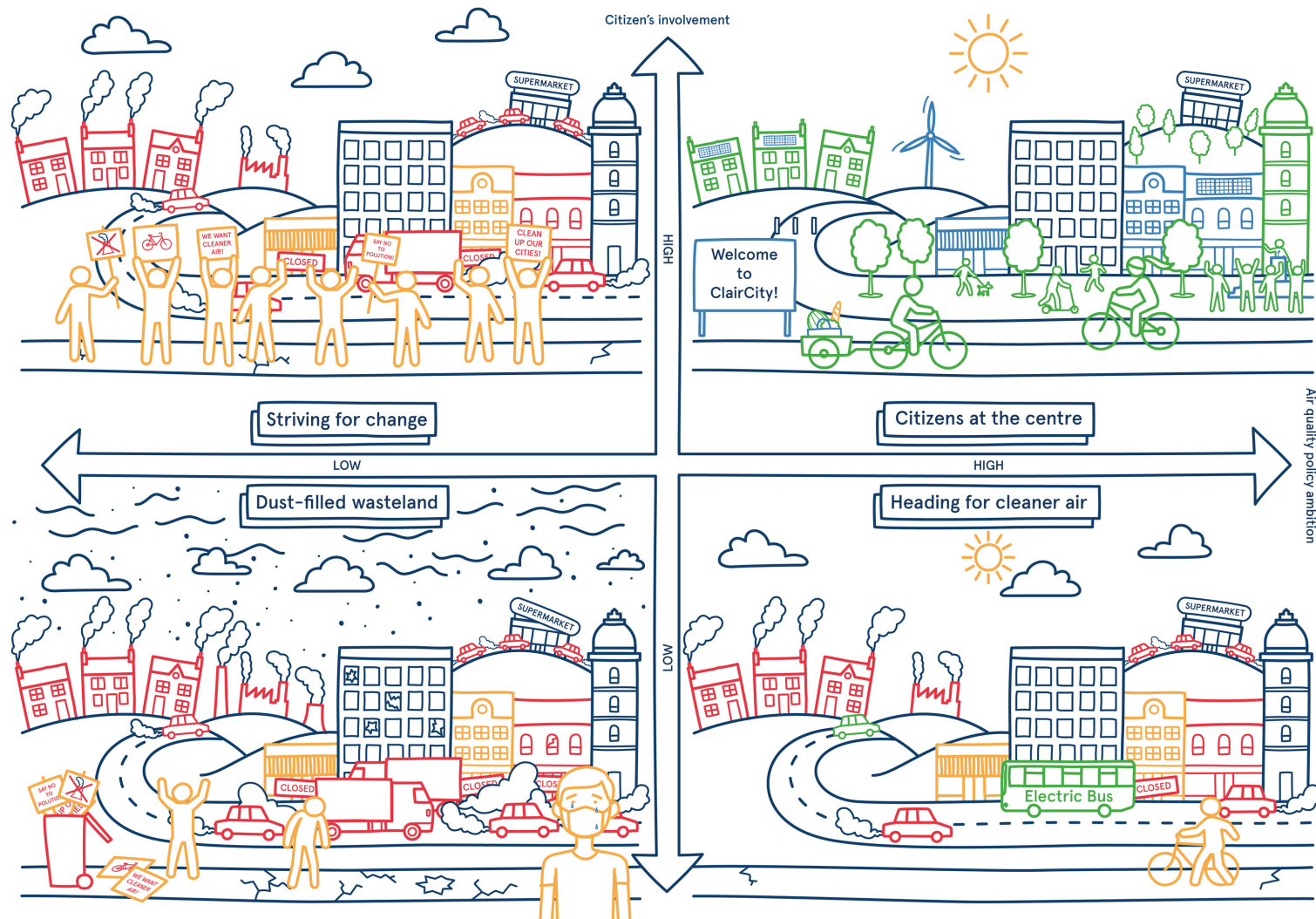




ClairCity Evaluation Report

Engaging citizens in health and sustainability decision making

Which future do you want to help create?



Content

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Air pollution infographic developed by ClairCity

Executive summary

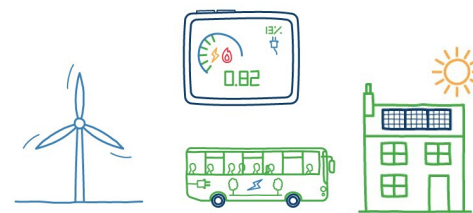
"Every day, air pollution and carbon emissions are produced by our commutes to work, by heating our homes, or through our daily lifestyles. Understanding how we live - and the restrictions we face in those choices – is key to improving air quality. Solutions at a local level can make a big difference" - ClairCity

855 participants volunteered their time to evaluate the engagement activities. 63% were male, given over half of the evaluators (534) came from the mobile game survey, a tool that traditionally has more male users. The game also appealed to a younger audience than other activities, meaning that overall, 25% of evaluators were aged 16-25 years old. However, given the wide ranging and often targeted activities developed, all age categories are represented in the project. For instance, the workshop activities (Delphi, policy, and stakeholder workshops) attracted 66% of 45-54 year olds and 83% of 55-64 year olds.

Overall, participants tended to enjoy the activities in which they took part; the younger the participants, the more likely they were to say that they enjoyed the activity. The activities also had an impact on behaviours, with 74% of participants said that they would now make a change to their lives to improve air quality.

The more participants enjoyed the activity, the more they reported that their understanding of air quality had improved. Similarly, the more participants reported that their understanding had improved, the more they reported that they would change their behaviour. Younger people and those with lower education to start with were more likely to say they would change their behaviour. All of these relationships were highly statistically significant.

To fully realise the goal of citizen-led air pollution reduction in cities, researchers and policymakers need to work hard to ensure engagement participation is reflective of city demographics. This evaluation shows the importance of designing engagement activities which appeal to a wide variety of audiences to ensure that a broad cross-section of society can participate in engagement with policymaking. The more enjoyable the engagement activities, the more people gain understanding about the issues, and the more likely people are to make a change to their behaviour to reduce air pollution and carbon emissions, and improve the health of our cities. We hope this evaluation report proves useful to other policymakers working towards a future with clean air.



The big question

How do you want to live, work,
and travel in your city of the future?

That's the question citizens in six cities and regions across Europe were asked in this four-year EU research project. ClairCity aimed to raise awareness about air pollution and carbon emissions in cities and understand how day-to-day practices, activities and behaviours contribute to the problems. Uniquely, the project put the power in the hands of residents to determine the best local solutions.

So what's the problem?

Air pollution is the cause of one in eight premature deaths worldwide. Poor air quality disproportionately harms children and the elderly, causing respiratory diseases, cancer and exacerbating heart conditions. People living in cities are particularly affected, with 80% of urban residents exposed to harmful levels of air pollutants according to the World Health Organisation.

The activities polluting our air are also the same ones producing carbon emissions. The EU now has a target of reaching net zero carbon emissions by 2050, with action urgently needed to improve the health of citizens and the environment. While the effects of poor air quality are felt worldwide, the sources are usually local and regional.



The full evaluation report can also be found [online](https://www.claircity.eu)

The ClairCity process

Six partner cities directly shaped the project: Amsterdam in The Netherlands; Bristol in the UK; Ljubljana in Slovenia; Sosnowiec in Poland; the Aveiro Region of Portugal; and the Liguria Region of Italy.

Local residents in each case study got involved through social media, a mobile game, an app, schools activities and a competition, city events, community films, and local workshops. In sharing their preferences and aspirations for the future, residents contributed to the future scenarios which our modelling team simulated for each case study. Comparing citizens' desires for the future alongside proposed local and regional plans helped the policy team to then further define tailored solutions for each city and region. At every stage of the ClairCity journey, citizens were involved.

Eight different audience groups were identified and each were involved in different ways (see table opposite). This was a conscious decision, as different things appeal to different audiences. In addition to traditional methods (surveys, workshops), distributed dialogues were held in community spaces. The project worked with educators to produce schools resources, with developers to produce games and Apps, and with older at-risk groups to produce films documenting their lived experiences.



Engagement activities and their target audience

CITIZENS (18+)	
Delphi process, game, city events, app, stakeholder workshop	
YOUNG PEOPLE (13-18)	
Schools competition, game, city events	
FAMILIES AND CHILDREN (UNDER 13)	
City events	
OLDER PEOPLE (60+)	
Film competition, city events, Delphi, game, stakeholder workshop	
NGOS AND LOCAL GOVERNMENT	
Mutual learning workshop, policy workshop, stakeholder workshop	
LOCAL COMPANIES/ORGANISATIONS	
App	

Evaluating engagement

Evaluation is crucial to understand if a project's aims and objectives are achieved, and to critically reflect on the activities and delivery processes. For ClairCity, evaluation meant the team could assess whether they met the objective of raising awareness of air pollution, carbon emissions, and health.

How was the project evaluated?

To determine if the project raised awareness, the following generic learning outcomes were evaluated :

1. Knowledge and understanding
2. Behaviour and progression
3. Enjoyment, inspiration, and creativity
4. Attitudes and values

Participants from each engagement were invited to evaluate their chosen activity, either through paper or online surveys - the game and app benefited from inbuilt surveys. In addition, interviews were conducted with ClairCity staff to understand whether their views on science communication have changed (see p17). Media coverage (press and social), academic conferences, journals and reports, and photos were also documented and analysed, which have since gone on to inform science communication publications. The full set of publications are available on the website.

Note: All research participants gave informed consent before participating in ClairCity's activities or evaluation methods. The evaluation process was approved by the UWE-Bristol (UK) Research Ethics Committee.

Evaluation questions

Q1: Who did the project engage with?



Objective 1: determine participants' age, gender, level of education and country of origin



Objective 2: examine whether the project engaged with the identified audiences



Objective 3: investigate if the project has reached any other audiences

Q2: How well did the project raise awareness of air pollution, carbon emissions and health?



Objective 4: examine indicators of awareness, attitudes, knowledge and skills

Q3: Are people who have engaged with the project planning to or doing something different? (e.g. walking instead of driving)

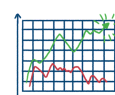


Objective 5: examine indicators of planned behaviour

Q4: What differences can we see across countries, demographics & engagement tools?



Objective 6: examine audience make-up between platforms and cities/regions



Objective 7: stratify indicators (objective 4 + 5) according to platforms and cities/regions



in numbers

818,736

**Citizens involved
across 6 cities and
regions**

4,887 in Delphi process
>1,000 children

82 policy makers
65 older people filmed

Demographics

63%



Men

25%



16-24

Activities

74%  **intend to change their behaviour**

98%  **found policy workshop useful**

21%  **knowledgeable before playing**

61%  **found schools activities useful**

**And scientists, too,
benefited:**

It's good to be on the street
and to talk with people and to
hear the voices that you
normally don't hear... it gives
you a different insight than
[with a standard
questionnaire]

Engagement Findings



- the more participants stated their understanding had improved, the more likely they were to intend to change their behaviour



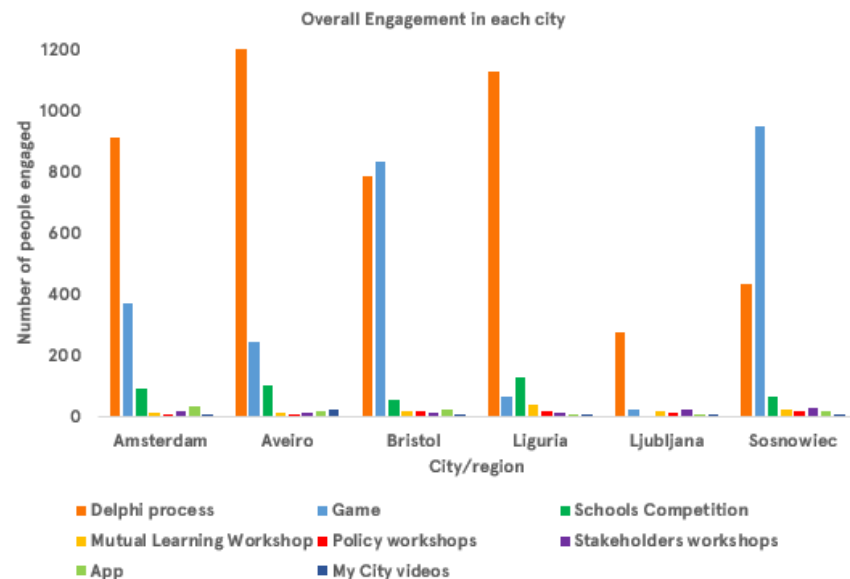
- the more participants enjoyed the activity, the more their understanding of air quality improved



- the younger the participants, the more likely they were to say that they enjoyed the activity

The results

Due to the wide arrange of engagement tools developed, and the hard work of the team in directly recruiting participants and marketing the tools, over 818,000 citizens got involved in some way. A total of 8,302 people were directly engaged, with 103,494 views of the project website, and over 770,000 social media impressions. The engagement reach across case studies and tools (see figure) aligned with original targets (see table).



Tool	Objective	Actual reach
Social media	Reach over 50,000 citizens	7770, 253 Twitter impressions 1,418 Facebook followers
Delphi workshops	Over 500 completed online surveys + 200 participants	3297 completed online surveys + 4887 participants (149 in workshops)
Skylines game	Over 1500 players	2,800 players worldwide (2489 from participating case studies)
GreenAnt app	Over 1500 players	Did not reach full roll out due to technical issues. 98 tested app
Mutual learning workshops	150 participants	138 participants
Schools competition	60-90 schools	1247 children (26 schools) + >102,000 downloads of <u>British Science Association pack</u>
Film competition	Over 60 older people	65 older people
Stakeholder and policy workshops	Up to 60 policymakers	113 stakeholders and 82 policymakers

Evaluation demographics

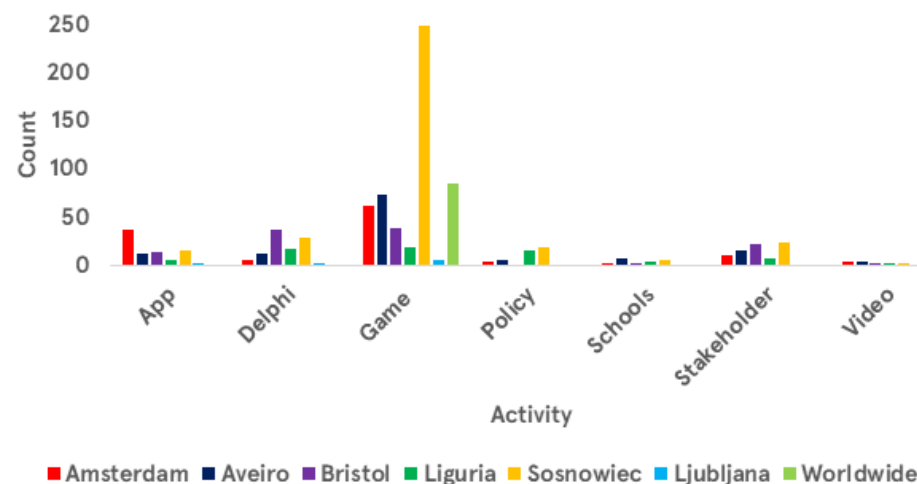
855 took part in the evaluations process across seven activities (Delphi, App, Game, Stakeholder workshops, Policy workshops, Schools competition and community 'my city' videos). This is equivalent to 10% of total participants - an average return rate for science communication samples.

The cities which recruited the most evaluation participants were Sosnowiec (353) and Aveiro (137), while the game was the activity with the highest number of evaluators (534, see below).

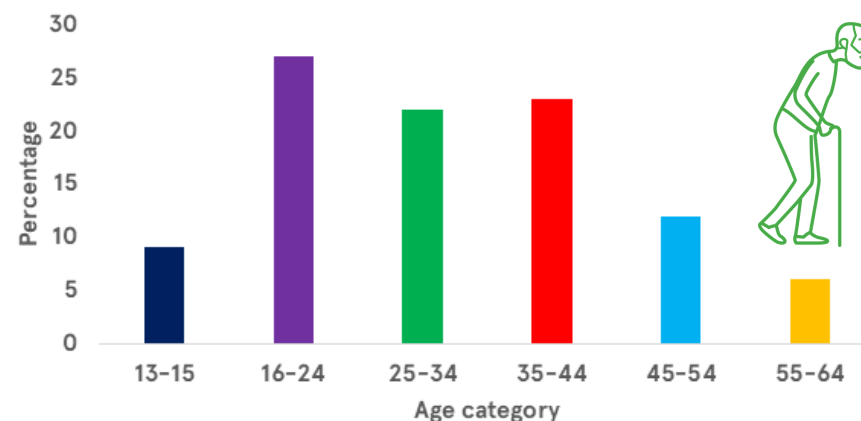
Age

Overall, the mode age category was 16-24 year olds, encompassing 25% of participants, due to high participation in the game. Cities which recruited a higher number of game players tended to have younger evaluation participants. However, overall, all age categories are quite well represented due to the diversity of activities on offer. For instance, the workshop activities (Delphi, policy, stakeholder) attracted 66% of 45-54 year olds and 83% of 55-64 year olds. A similar spread was observed across genders and engagement tools, with a slightly younger skew among women and for the game.

Total number of evaluation responses across all engagement tools, and cities and regions



Overall spread of all evaluation participants' ages



Gender

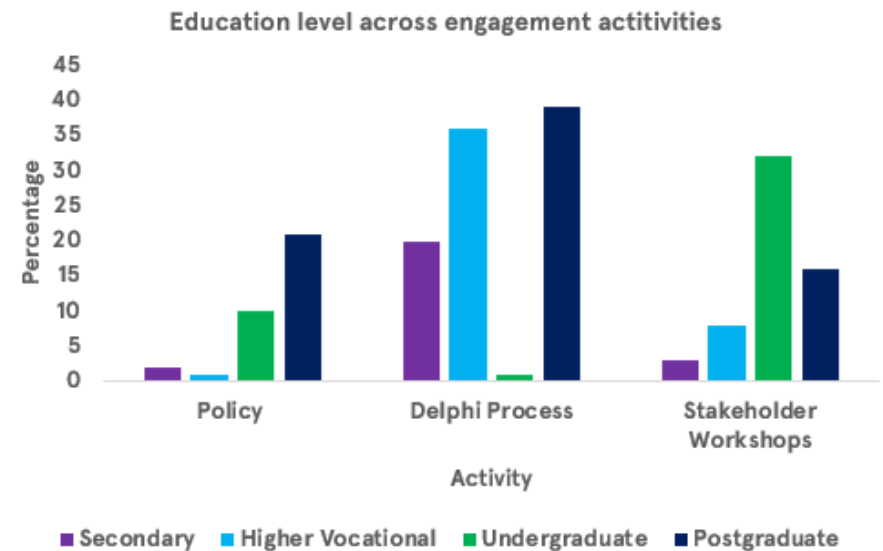
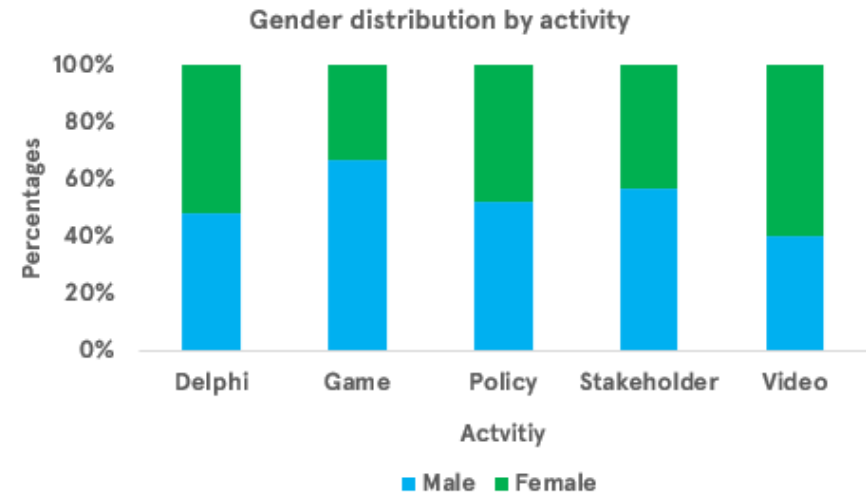
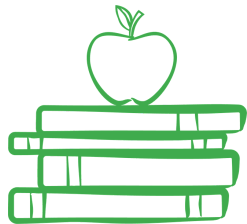
Most activities were fairly evenly split between male and female evaluators with the exceptions being the Stakeholder workshops (attracting more senior members of organisations, who tended to be men) and the game. In total, 281 females (37.5%) participated in the evaluation, compared to 469 males (62.5%) (with 109 participants preferring not to identify themselves).

The high level of male gamer has meant the overall evaluation sex ratio is skewed towards men. Case studies which recruited a high number of game players therefore showed a similar skew towards more male, such as Bristol and Sosnowiec.

Education and expertise

Delphi, Policy and Stakeholder workshop evaluators (209) were asked their education level. Overall they were very highly educated, with 81% holding a Bachelor or Postgraduate degree.

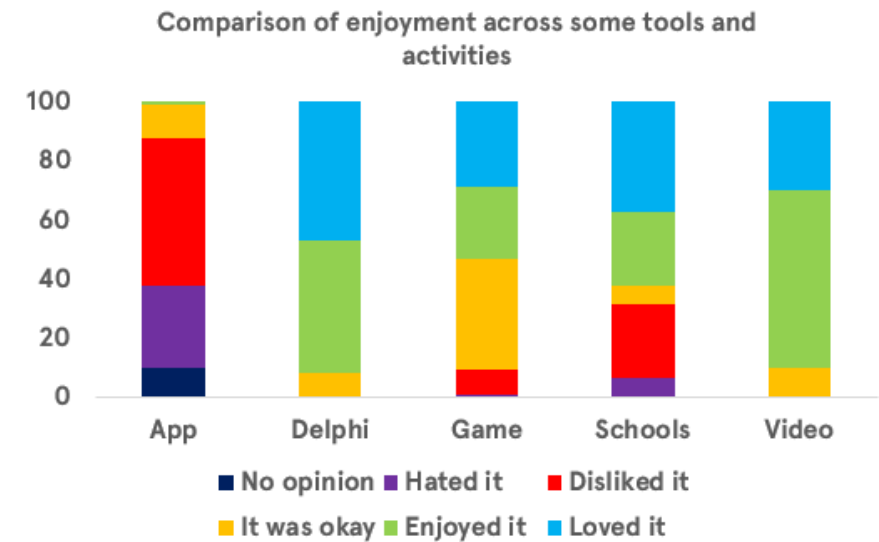
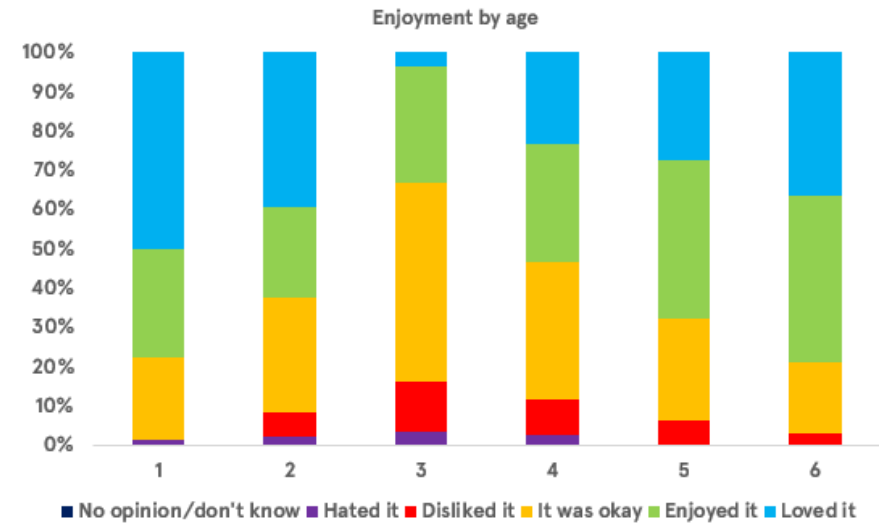
Similarly, participants in the game (560) were asked their self-rated expertise about air quality; conversely only 21% rated themselves as being well informed or having expert knowledge.



Enjoyment

Overall, 731 participants were asked if they enjoyed an activity, and the mean value was 3.7 out of 5, indicating that there was a high level of enjoyment. The activities which achieved the highest enjoyment scores were the Delphi workshops and videos, with 91% and 90% (respectively) of participants either enjoying or really enjoying the activity. Of the game participants, 55% indicated that they enjoyed or really enjoyed the activity. The GreenANTS app was the least liked by its participants, with 53% of participants indicating that they disliked it.

There were no statistically significant differences in the enjoyment levels between men and women. However, there were highly statistically significant differences between how different age groups enjoyed engaging with ClairCity activities. This is probably due to the types of activities the younger and older participants participated in; 16-24 and 25-34 years were more likely to say that some hated the activities, and some loved them. A key finding has been the younger the participants, the more likely they were to say that they enjoyed the activity.



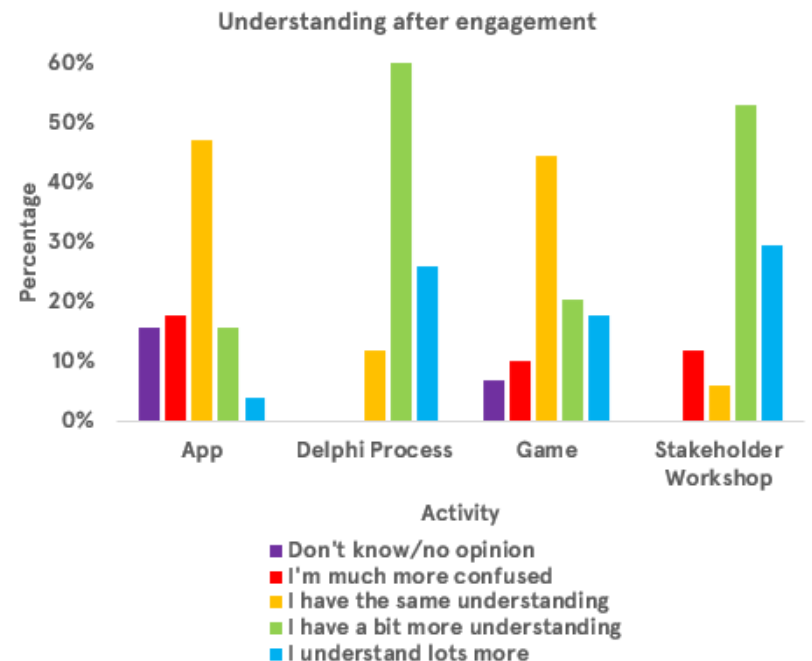
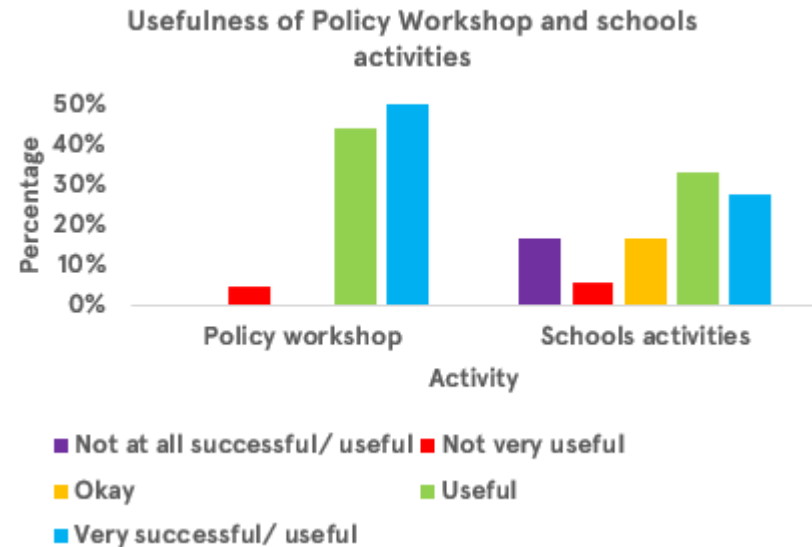
Usefulness

Policy workshop and school activity participants (62) were asked if the activities were useful for their work. 98% and 61%, respectively, found the tools to be useful or really useful.

Understanding

The app, Delphi process, game and stakeholder workshop evaluation participants (733) were asked if their understanding of air pollution, carbon emissions and health impacts had changed after participating. The mean score of 3.4 out of 5 indicates their knowledge largely stayed the same. The large numbers of game participants rating their understanding as staying the same (45%) explains this, with most coming into the game with little expertise in air quality. This may be a result of the game asking participants to run the city straight away and not focusing on explaining these issues. The Delphi was rated the most highly for improving understanding (62%) of air quality.

16-24 and 25-34 year olds were more likely to say that their understanding stayed the same. It was also found that the more participants enjoyed the activity, the more they reported that their understanding of air quality had improved - this was highly statistically significant.

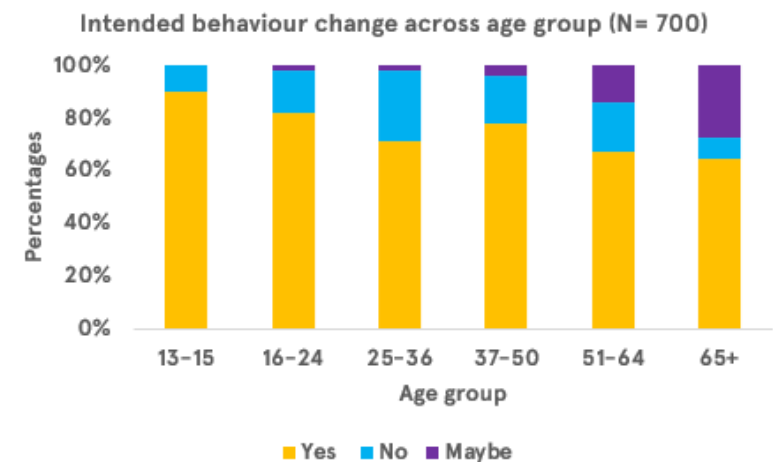
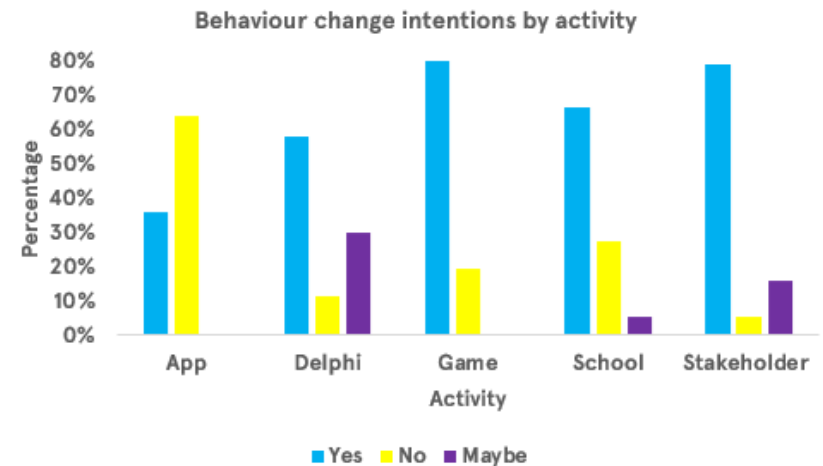


Behaviour change intentions

755 evaluators were asked if they would do anything differently to improve air quality after participating in the activities. Overall, 74% said that they would. The Stakeholder workshop and the game had the most impact on participants, with 79% and 80% (respectively) saying yes. Liguria was the city with the highest ratio of change makers, while the lowest were in Amsterdam. This may be because people in Amsterdam are already living relatively green lives and feel they have fewer changes to make.

There were no differences between genders; however, there were between age groups. This does not seem to be related to the types of activities, and is probably more related to the perceived capacity people have to take action at different life stages. Younger (13-15 and 16-24) and older (55-64) groups had higher intentions to change, with the lowest in the 25-34 age bracket.

The less educated the participants, the more likely they were to say they were going to change their behaviour. While the more participants' understanding improved, the more likely would they state they would change behaviours - this was highly significant..



Social media and online presence

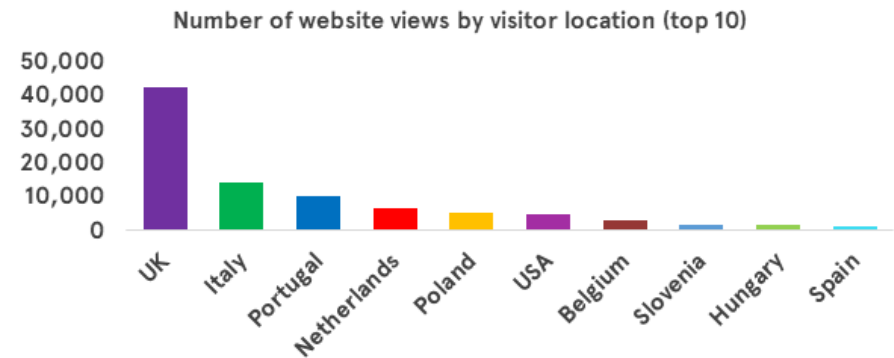
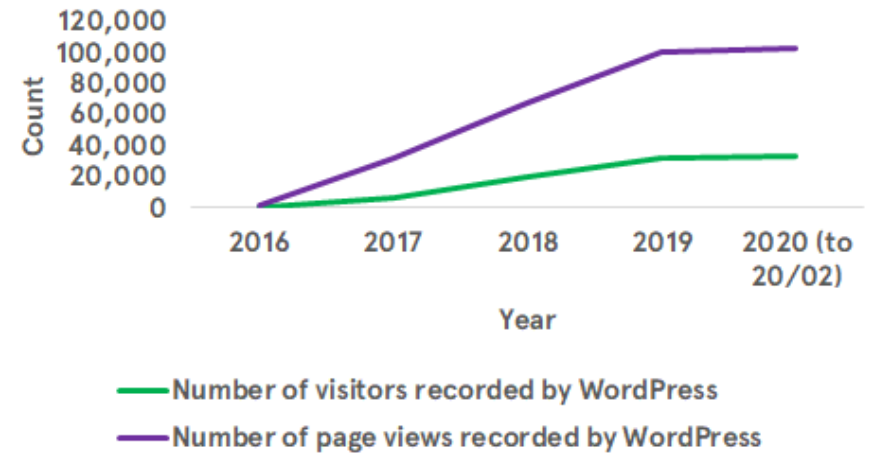
To generate citizen-led solutions, the use of social media and online information was important. Each city and region selected platforms most relevant to them, allowing them to successfully target interactions and awareness raising with local citizens, as well as to engage more generally with a global audience through sharing results and project information (see below).

1,000s of citizens followed the project, and many more became aware of ClairCity through media coverage of key activities and events, and the website (top right).

Each year the number of visitors to the website grew. The nationalities of all case studies were included in the top 10 most popular locations to visit the site, with the UK being the top (bottom, right). This was possibly due to the disproportionate amount of content available in English.






Website visitors and views



Note: Due to the availability of statistics from Wordpress, this data shows the location per view, not per visitor. For example, a person located in the UK who looked at five pages on the website while browsing will count as five views in this data.

ClairCity's social media reach

	Platform	Total	Cities/region
	Twitter	1,389 followers 770, 253 impressions	Bristol and Liguria
	Instagram	203 followers 29 posts	Liguria
	Facebook	1,418 followers 1,344 likes	Amsterdam, Aveiro, Bristol, Liguria, Sosnowiec
	YouTube	31 videos, 5,747 views	All six
	Website	33, 678 visitors	One site, with sub-sites for each case study in local language

Community films



Videos appeal to a wide audience and are shareable (YouTube). 13 surveys informed the following reflections:

What worked

Dedicated and targeted promotion and partnerships to spread the message

Allowed (some) older people to share their experiences with younger people

Working with a camera team capable of producing high quality content

Improve by...

Working with local campaign organisations to increase reach and amplify call to action

Asking participants how they would like to share their story, as some people are camera shy

Exploring free editing software or working with film students

City events



1000s of citizens were engaged on the streets, attracting new audiences the project not have otherwise engaged with

What worked

Participating in existing, well-established events or working with affiliated organisations

Having fact sheets to take away and being honest when you don't know the answers.

Providing hands on activities to capture people's attention quickly

Improve by...

Consider combining with pre-existing events (e.g. local festivals) in a variety of locations

Providing a brief for ambassadors beforehand with frequent questions and answers

Capturing participants intended behaviour change (e.g. through pledges) or ask them to take action on the day (e.g. write to PM)

Schools activities



20 teachers provided feedback to these activities. Working with schools allows you to engage pupils on multiple occasions to deepen their understanding

What worked

Developing lessons that could satisfy curriculum requirements and testing in different schools

Developing both online and analogue materials so that different learning styles could be satisfied

Teachers thought activities would increase pupils understanding and motivation to act

Improve by...

Approaching educators, to ask what works best for them. Work together to create a tailored plan for the context

Experimenting with analogue versions, or making the digital element more flexible

Document the actions pupils take as a result of their involvement

Workshops



108 surveys and lots of informal feedback was gathered from our workshops. Bringing together different city stakeholders, including citizens, allowed for in-depth discussion and the co-creation of policy solutions.

What worked

Agreeing on time, location and access requirements with the audience

A great way to bring together different expertise

Dividing up tasks between staff and having one or several dedicated facilitators

Improve by...

Asking your audience how you can tailor the content to better suit their needs

Inviting participants from business, and allowing more time for discussing visions and actions

Piloting in advance so facilitator can think how best to manage the space and keep activities focused, and evaluating can assess the most appropriate forms of data collection

Delphi method



102 surveys gathered and 13 reflective logs from staff. This is a tried and tested approach that makes use of surveys and workshop activities to allow for robust quantitative and qualitative analysis

What worked

Gathering responses from 1,000s of people, from countries all over Europe

Increasing knowledge about health, air quality and climate change

Inspiring participants to change their behaviour as a result of participating

Improve by...

Targeting community organisations to increase your chances of capturing a representative sample

Keeping theory to a minimum and being clear on how citizens involvement will go on to influence city decision making

Allowing time for participants to network and discuss ways to follow through with their behaviour change.

ClairCity Skylines



526 completed surveys. Engaging participants with no prior knowledge of air pollution and encouraging behaviour change

What worked

Crowdsourcing public opinion from across Europe

Actively reaching out to different groups, such as commuters, minority groups, etc. at public events

Younger participants particularly enjoyed the game

Improve by...

Asking your audience what kind of games they like and co-create the game with them so they continue to use it

Host dedicated games workshops with younger (13-15) audiences to increase their involvement

Invest more time advertising in places where they will see your adverts (schools, young adult magazines, Snapchat and Instagram)

The GreenAnt App



The app was only tested internally, with 98 completed evaluation surveys. The following points are taken from these responses.

What worked

People were able to access air quality data and how this related to health

Participants intended to change their behaviours after interacting with app

Engaging people who are already technologically savvy

Improve by...

Having ethical discussions with expected users to clear up any concerns they may have

Thinking of ways to document/monitor behaviour change intentions

Partner with community organisations, reaching out and testing with different groups

What our staff said:

In addition, 27 staff interviews were gathered to assess how public engagement had influenced their perceptions of science communication

It's good to be on the street and to talk with people and to hear the voices that you normally don't hear... it gives you a different insight than [with a standard questionnaire]

Be less scientist, be more human

Listen to people, simplify and adapt your message to your intended audience

The benefits of working together for clean air

For cities and regions



1. Greater awareness of what citizens do and do not know about issues such as air pollution, and therefore what they prioritise
2. Increased knowledge of and confidence in science communication (e.g. adapting language to suit the audience)
3. New engagement skills (charisma, clear communication, type of language, etc.) and methods
4. Better understanding of how to recruit participants more effectively and get partners onboard;
5. Event management skills (e.g. how to organise and run events, often on multiple occasions, to avoid competition with other local events)
6. Greater awareness of the importance of project evaluation
7. The ability to tailor engagement activities to suit the school curriculum

For scientists and science communicators



1. Ability to connect with thematic groups in the city, or wider regional networks to encourage participation (e.g. through citizen assemblies)
2. Enhanced relationships between universities and the Council
3. Engagement with community groups to capture the voices of more at-risk groups
4. Easier to link activities with other ongoing city/region activities and initiatives
5. Ability to make use of free advertising space (in Sosnowiec, the Council's network of bus stop billboards) to promote activities (e.g. the game)
6. Ability to tap into the social media platform that is most popular for that city/region
7. Possibility to co-develop engagement tools
8. Ability to test out technology in safe incubator spaces (e.g. universities) before releasing to the public



City of
Ljubljana

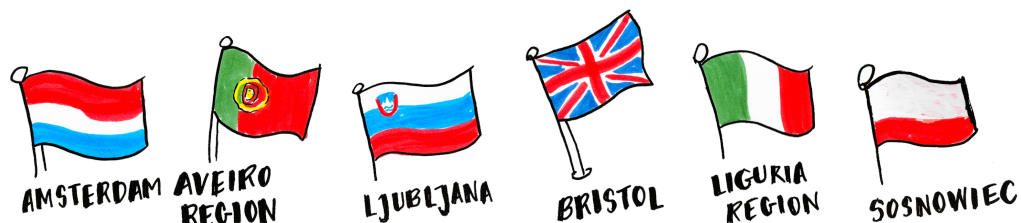


REGIONE
LIGURIA

Thanks to our partners!

1. TECHNE Consulting (Italy)
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3. University of Aveiro (Portugal)
4. Municipality of Amsterdam (Netherlands)
5. Bristol City Council (UK)
6. Intermunicipal Community of Aveiro Region (Portugal)
7. Liguria Region (Italy)
8. Municipality of Ljubljana (Slovenia)
9. Sosnowiec City Council (Poland)
10. Trinomics B.V. (The Netherlands)
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12. PBL Netherlands Environmental Assessment Agency
13. Statistics Netherlands (CBS)
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