ClairCity received funding for the European Union's Horizon 2020 research and innovation programme under grant No. 689289.

Citizen-led emission reductions: Behaviour change intention is positively correlated to citizen enjoyment and learning in public engagement activities

Presented at the Public Communication of Science and Technology Conference 2023

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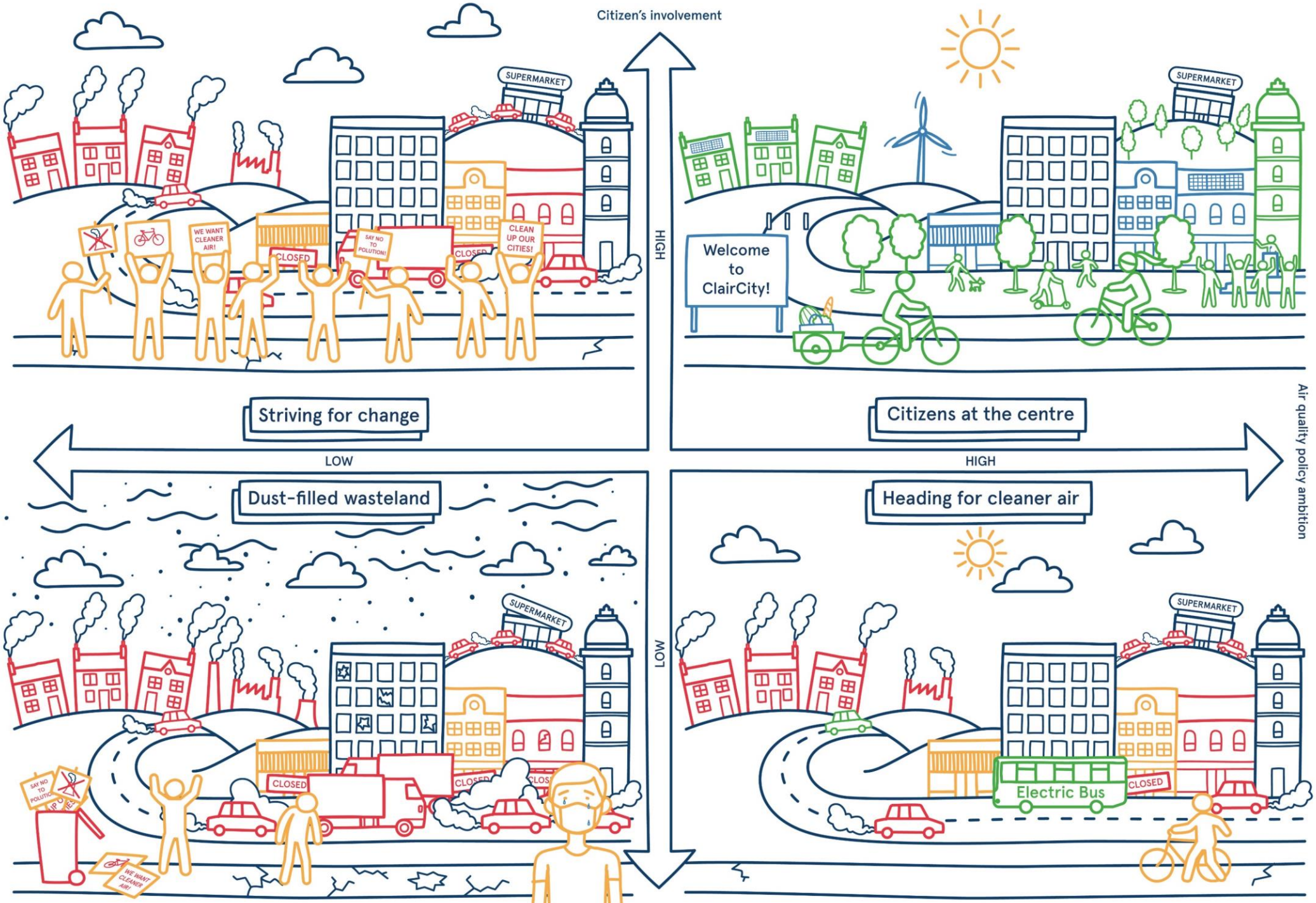
Citizens at the Centre

We need diverse citizens engaged in visioning our transition to a low carbon Europe



How to engage: the Community Engagement Continuum

Inform	Consult	Involve	Collaborate	Empower
To provide stakeholders with balanced and objective information to assist them in understanding the problem, alternatives and solutions.	To obtain stakeholder feedback on analysis, alternatives and/or decisions.	To work directly with stakeholders throughout the process to ensure that their concerns and aspirations are consistently understood.	To partner with stakeholders in each aspect of the decision from development to solution.	Shared leadership of community-led projects with final decision-making at the community level
"Here's what's happening"	"Here are some options, what do you think?"	"Here's a problem, what ideas do you have?"	"Let's work together to solve the problem"	"You care about this issue and are leading an initiative, how can we support you?"

Top Tip

Aim to cover the full spectrum of approaches in your work in order to appeal to different audiences.

www.tamarackcommunity.ca/library

Citizen-led air pollution reduction in cities

Everyday, air pollution and carbon emissions are produced through our commutes to work, by heating our homes, or through our daily lifestyles.

The ClairCity aim was to create a major shift in public understanding towards the causes of poor air quality, inviting citizens to give their opinions on air pollution and carbon reduction to shape the cities of the future.

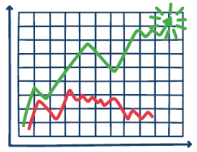
The project ran from 2016-2020 in 6 countries.

How the ClairCity process engages with a city & its citizens

Phase 1: Establish the Baseline Evidence

Benchmarking behaviour

Quantify the baseline



Assessment of policy

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

The GreenAnt app

City Events

Public engagement and awareness

Community films

Schools Engagement: My City, School, & Home

ClairCity Skylines Game

Mutual Learning Workshop

Citizen and Stakeholder Engagement & Co-creation of Scenarios

Delphi Method

Stakeholder dialogue

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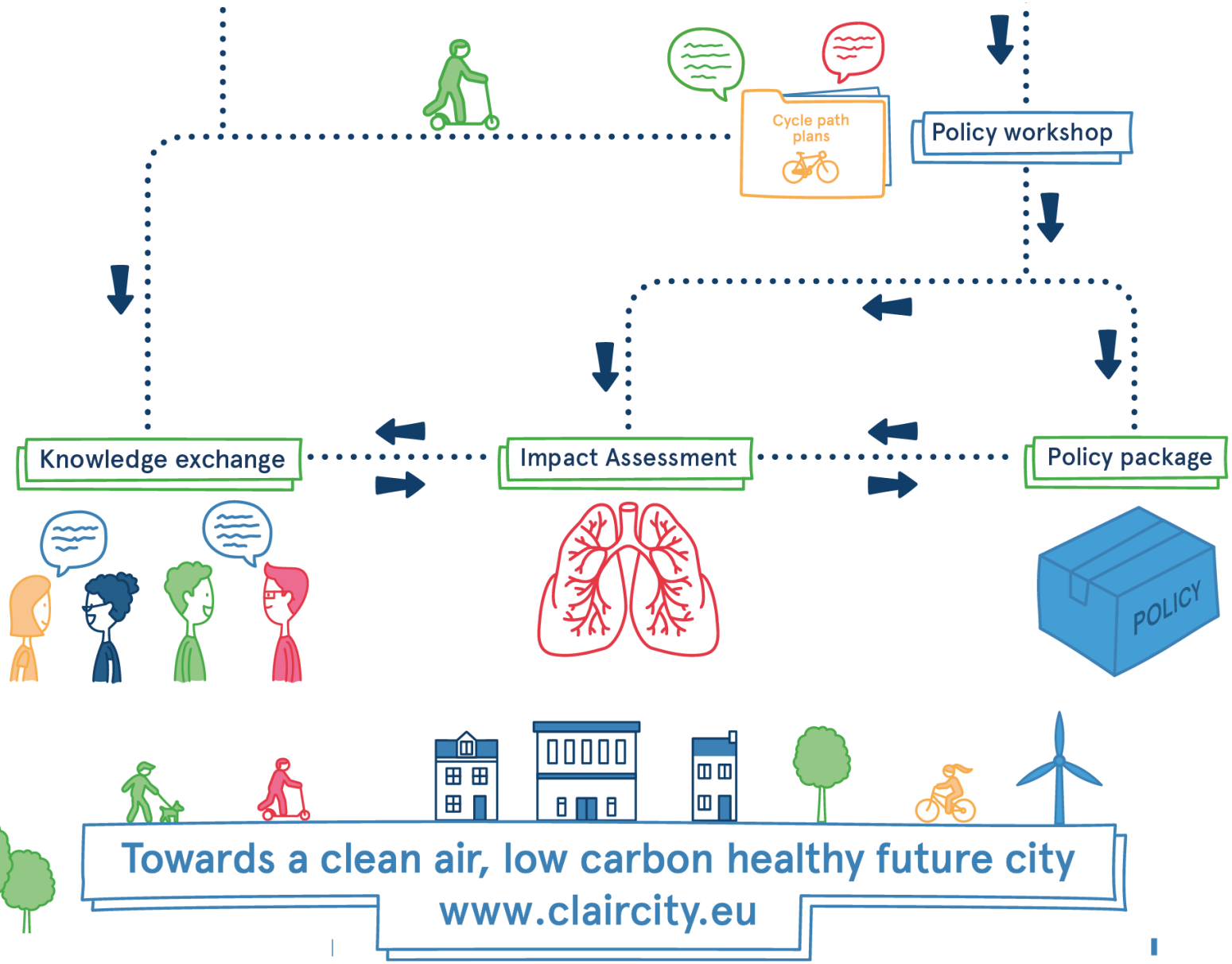
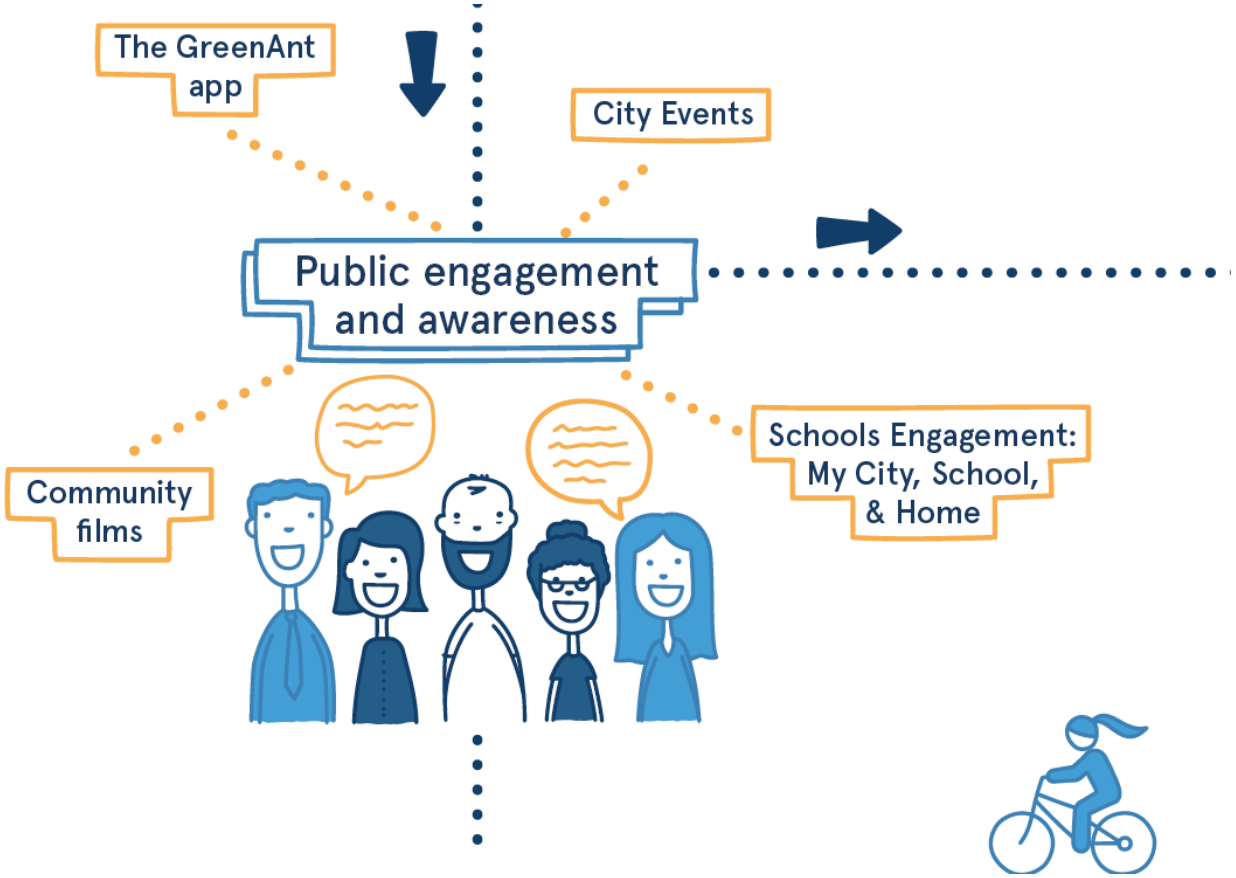
ClairCity

How the ClairCity process engages with a city & its citizens

Phase 3: Quantified Policy Package & Knowledge Exchange



Consult and Involve



Community films

Schools Engagement:

City Events

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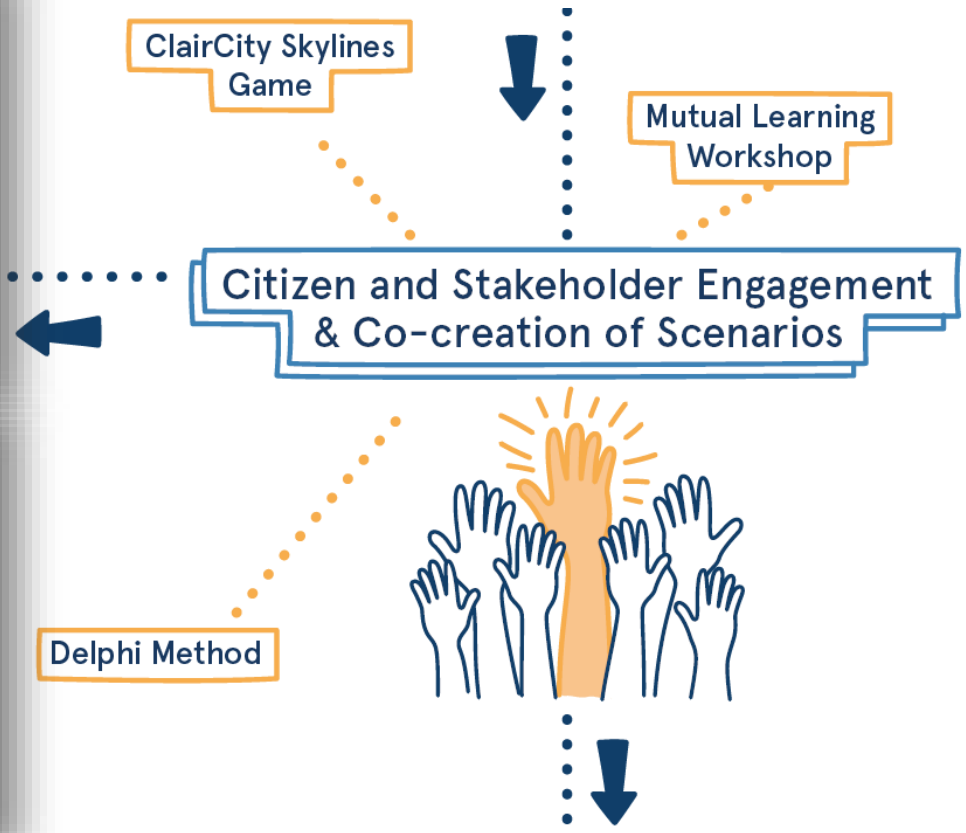
Collaborate and Empower

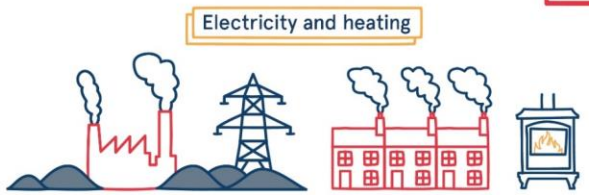
ClairCity Skylines

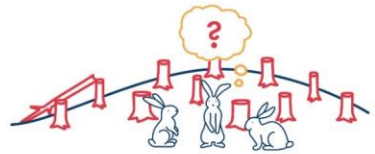
Delphi Method

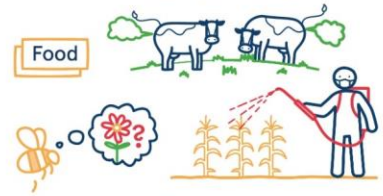
Mutual Learning Workshop



Climate change – what's it all about?

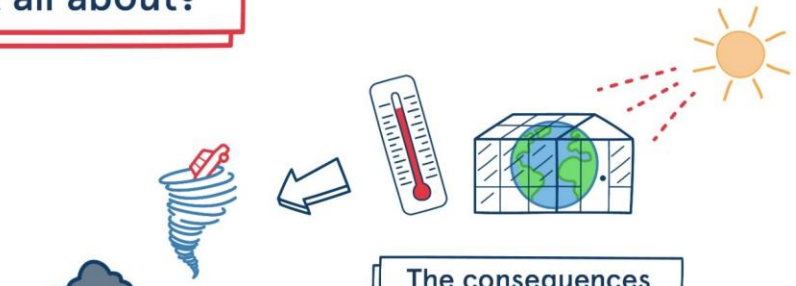






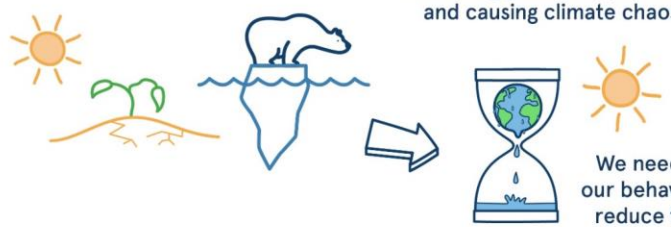
Our actions

Many of our daily actions result in burning fossil fuels – when we drive our cars, fire up a gas boiler, or use electricitcy from non-renewable sources



The consequences

These activities produce greenhouse gases like carbon emissions and methane. The gases form a layer which traps heat, increasing global temperatures and causing climate chaos



We need to change our behaviours now to reduce the impacts

A better future is possible - how will you play your part?

ClairCity

WHAT IS AIR POLLUTION AND HOW DOES IT AFFECT US?

It's Your Health

Breathing polluted air raises the chances of heart attacks, strokes, and lung cancer. It makes respiratory conditions like asthma or bronchitis worse.

Diesel vs Petrol

Diesel cars cause more air pollution than petrol cars, but have lower carbon emissions.

1 in 8 Deaths

Air Pollution causes one in every eight premature deaths worldwide.

Fogg-Rogers, L.; Hayes, E.; Vanherle, K.; Pápics, P.I..; Chatterton, T.; Barnes, J.; Slingerland, S.; Boushel, C.; Laggan, S.; Longhurst, J.. Applying Social Learning to Climate Communications—Visualising 'People Like Me' in Air Pollution and Climate Change Data. *Sustainability* **2021**, *13*(6) 3406 *doi.org/10.3390/su13063406*

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

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Research Questions

Question 1: Who did the project engage with?

Question 2: How well did the project raise awareness of air pollution, carbon emissions and health?

Question 3: Are people who have engaged with the project planning to or doing something different? (e.g. walking instead of driving, planning to contact their council

Question 4: What differences can we see across countries, demographics and Communication Platforms?

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

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

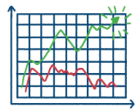
Objective 3: Investigate if the project has reached any other audiences

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

Objective 5: Examine indicators of planned behaviour

Objective 6: Examine audience make-up between the Platforms and Cities

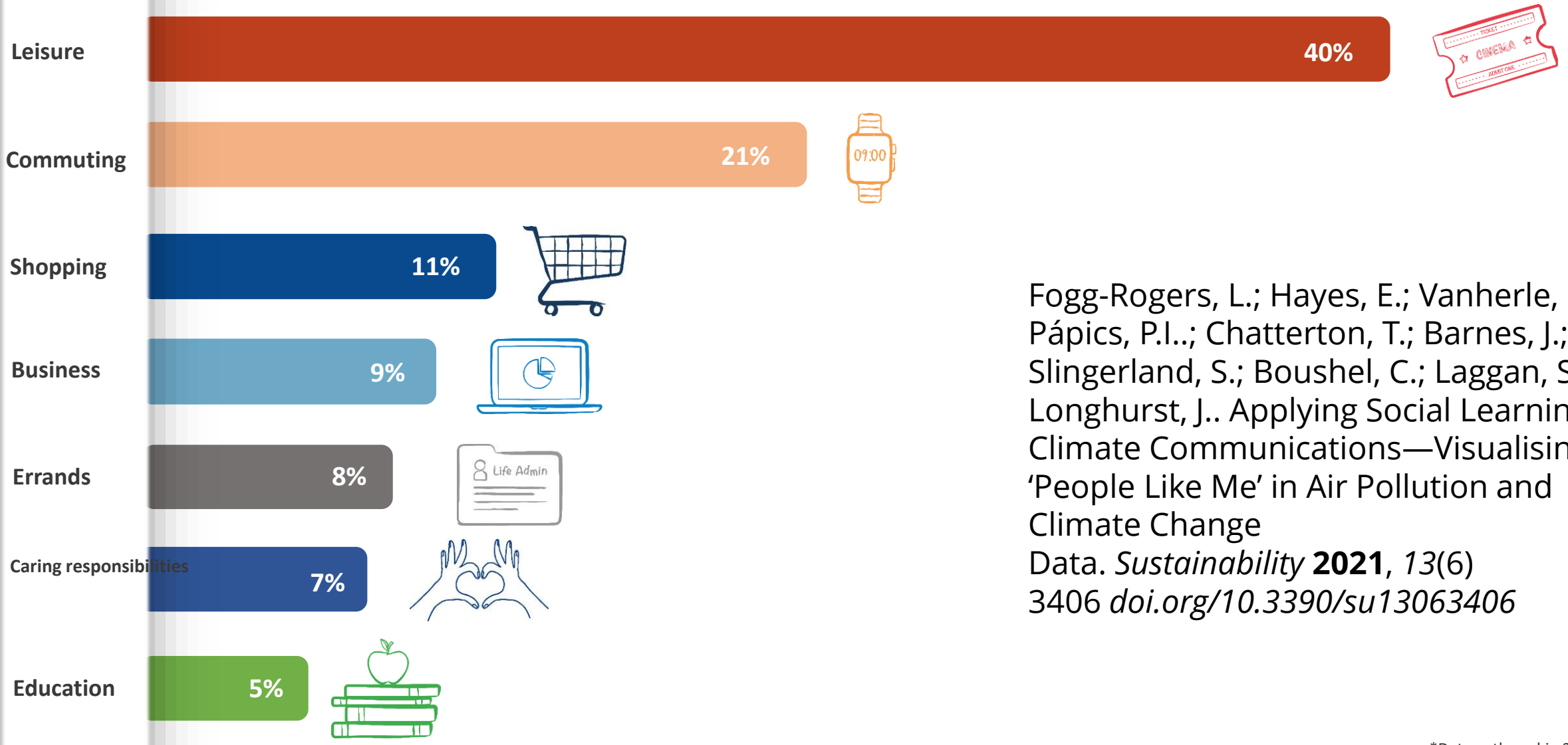
Objective 7: Stratify indicators of awareness, attitudes, knowledge, skills and planned behaviours according to Platforms and Cities



Evaluation methods

Engagement method and recruitment	Intended audience	Evaluation method	Topics assessed
Delphi process – advertisement and self-selection, some targeted recruitment	Ordinary citizens (over 18) Expert Stakeholders	Online survey	Age, Gender, Education, Enjoyment, Understanding, Behaviour
Skylines Game – advertisement and self-selection	Young people (aged 13-17) Ordinary citizens (over 18)	Pop-up mini survey	Age, Gender, Expertise, Enjoyment, Understanding, Behaviour
App – targeted recruitment	Ordinary citizens (over 18)	Pop-up mini survey	Enjoyment, Understanding, Behaviour
Schools Competition – targeted recruitment	Young people (aged 13-17) Teachers	Online survey for teachers	Age, Enjoyment, Behaviour
My City Videos – targeted recruitment	Older adults (over 60)	Online survey	Age, Gender, Enjoyment
Workshops – advertisement and self-selection, some targeted recruitment	Ordinary citizens (over 18) Expert Stakeholders	Paper and online survey	Age, Gender, Education, Enjoyment, Understanding, Behaviour

Baseline reports e.g. why we travel… relative distance contribution of our travel activities in Bristol



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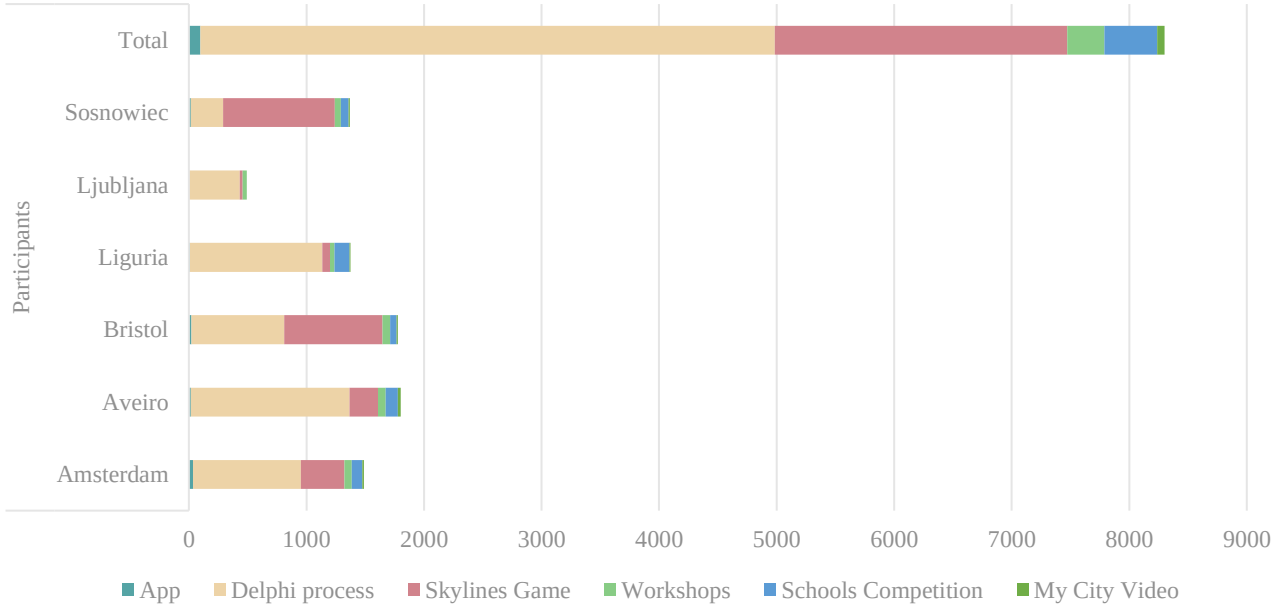
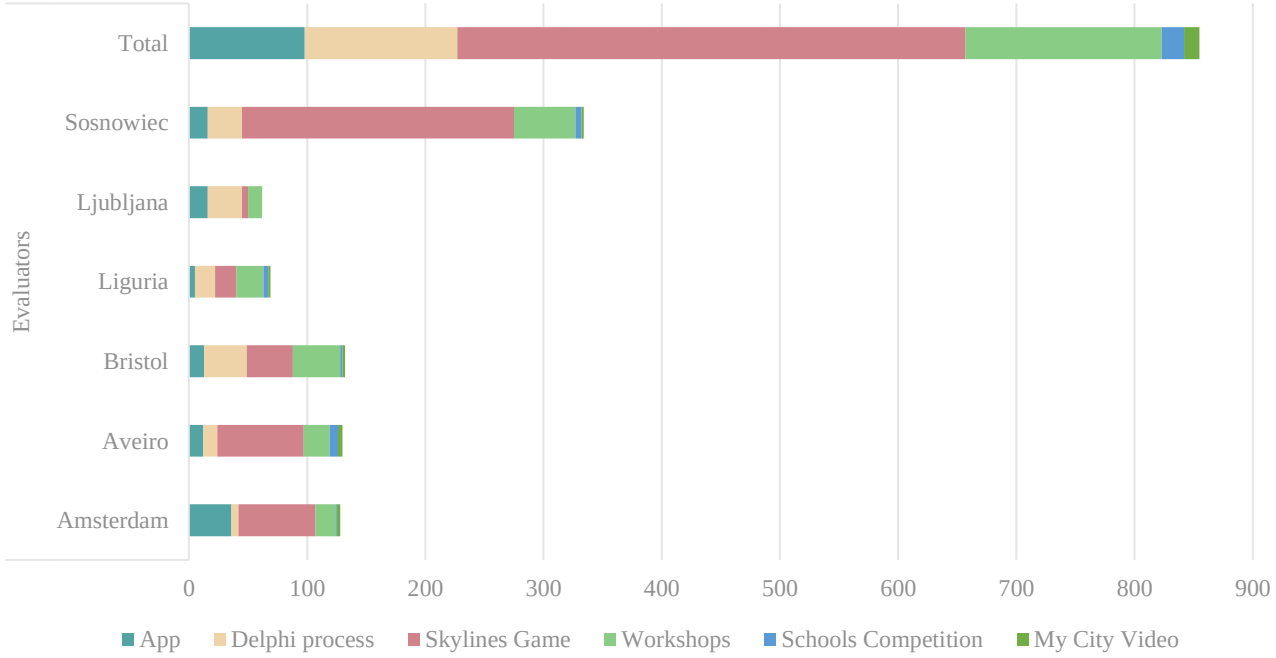
*Data gathered in 2015 to show baseline behaviours (% rounded)

Evaluation results

8302 engagement participants

855 evaluation returns



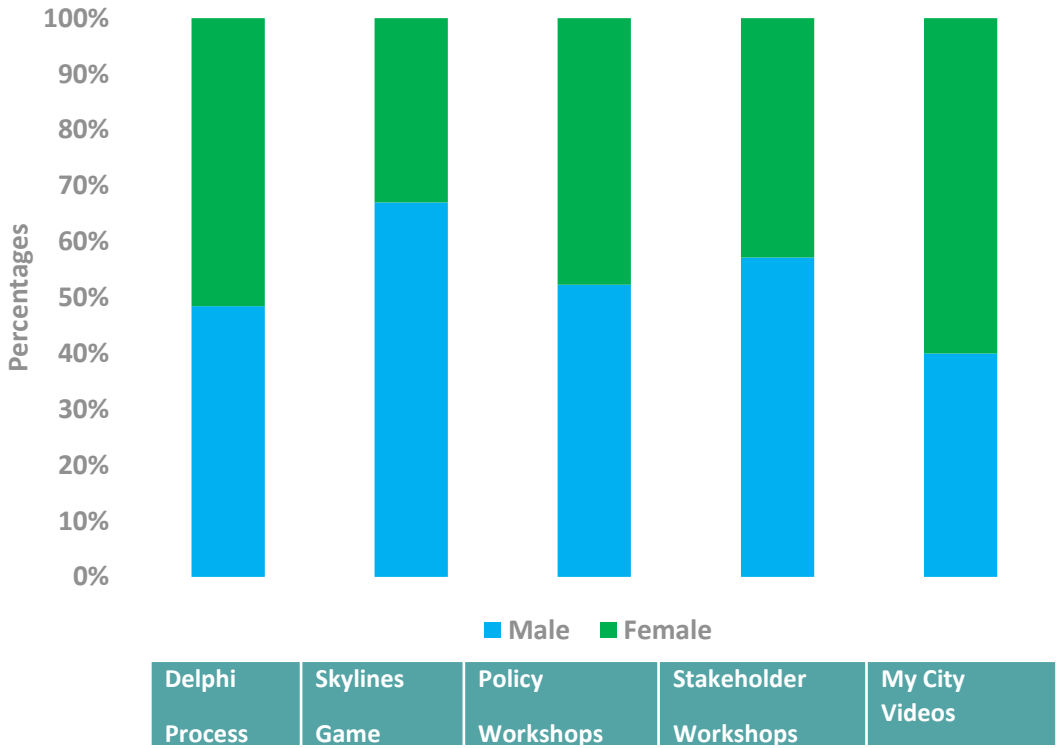


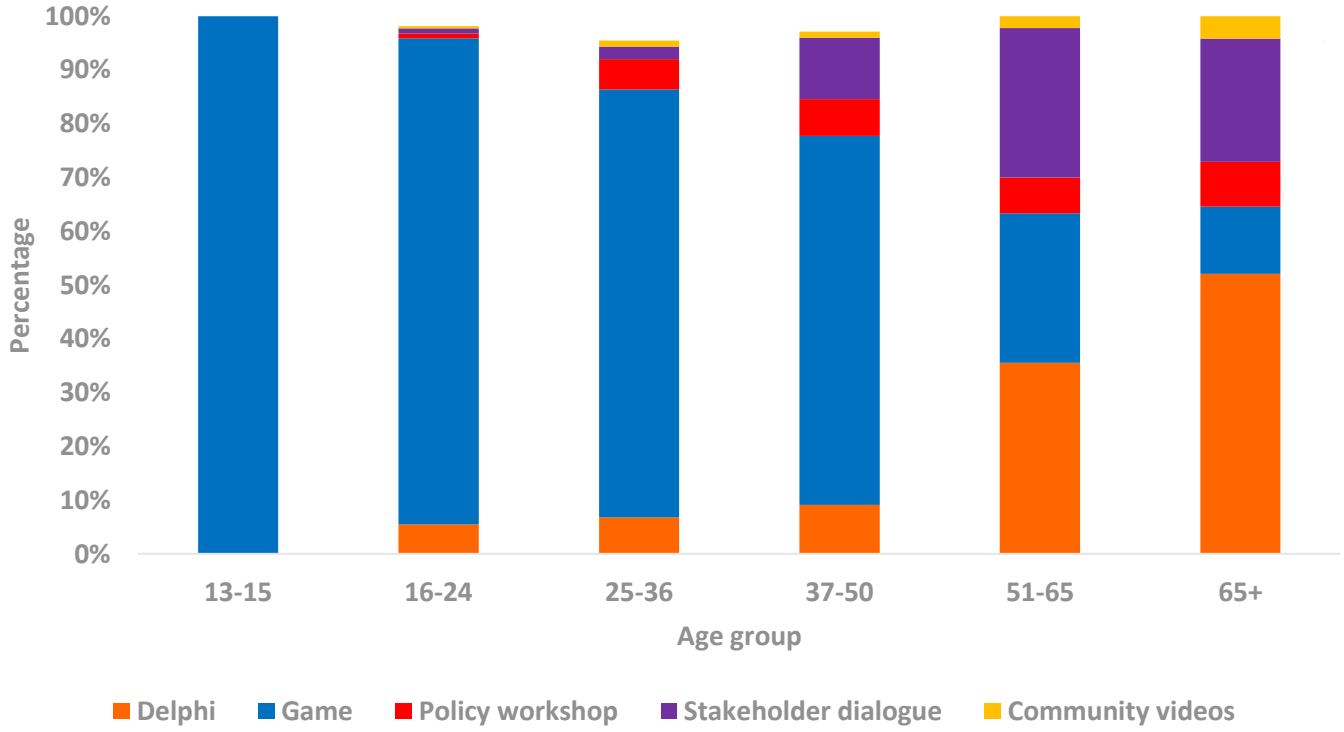
Participant characteristics

62.5% Men

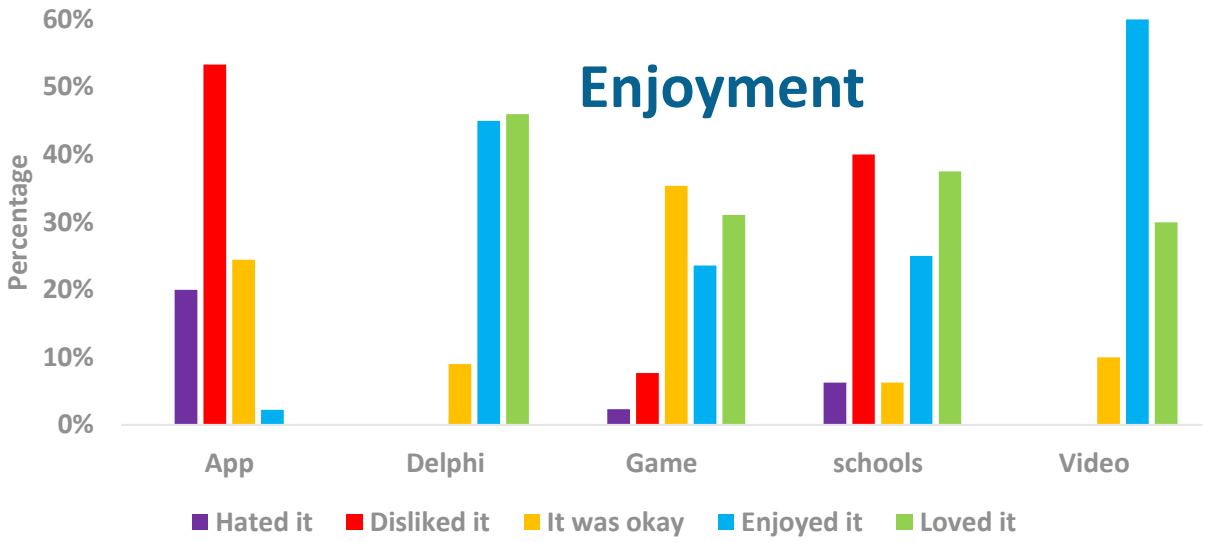
25% 16-24

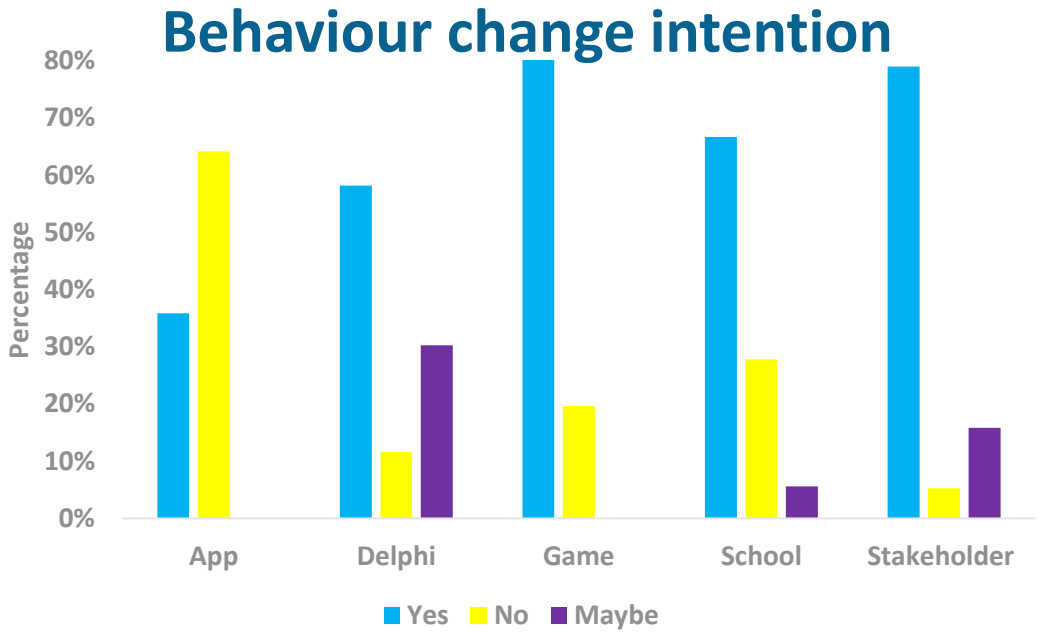
81% workshop participants older men





Learning evaluation

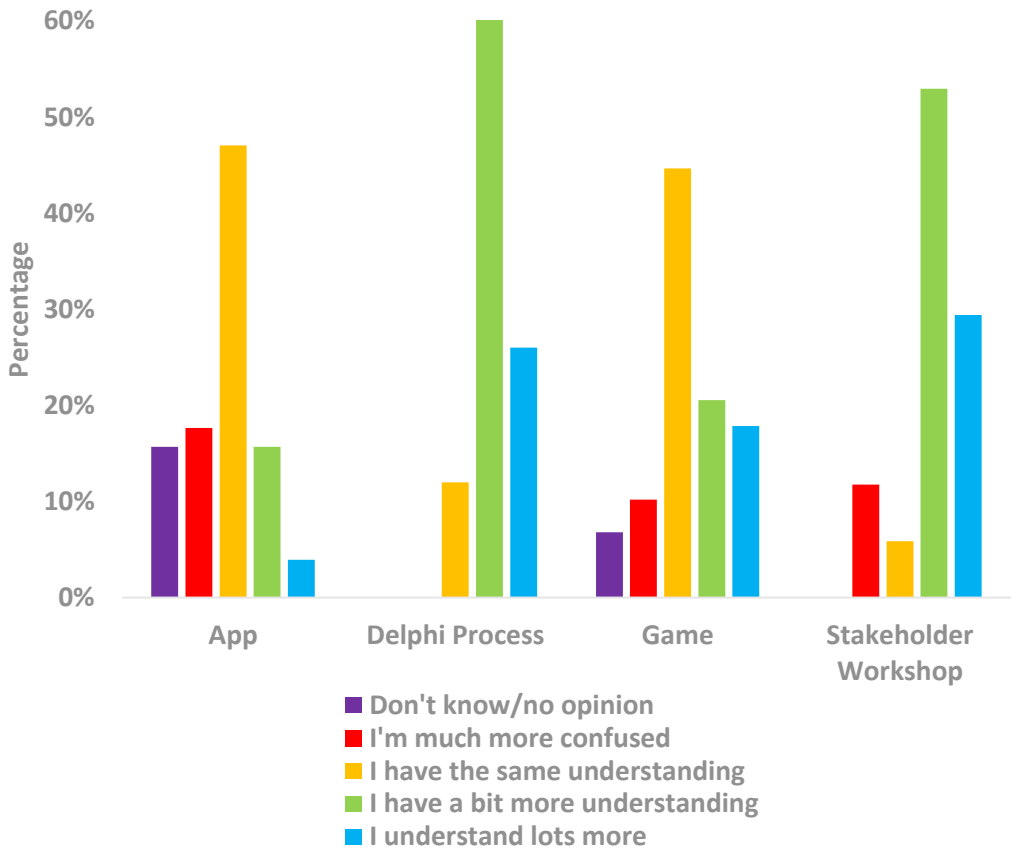




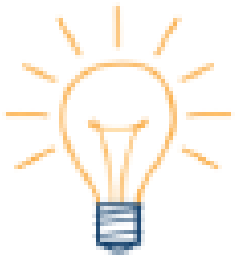
74% intend to change their behaviour

98% found policy workshop useful

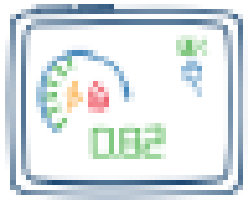
21% knowledgeable before playing



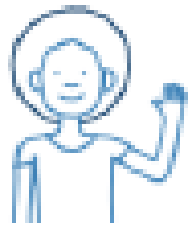
Evaluation findings



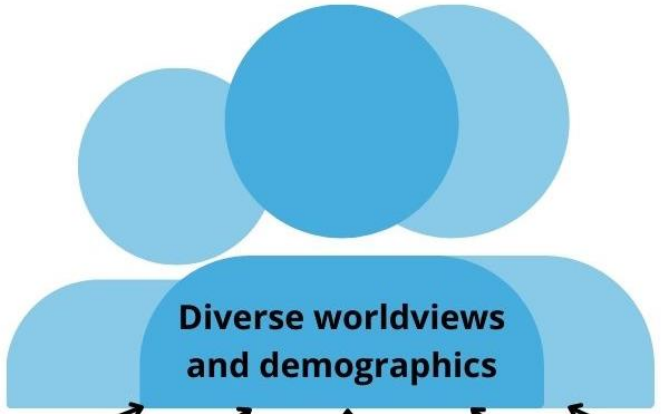
Activity enjoyment was significantly positively correlated to understanding.
A Pearson product-moment correlation coefficient was computed across all activities and indicated a significant positive correlation between **participants' enjoyment of the activities and their subsequent understanding of air quality [r = .587, n =705, p < .000]** i.e. no matter which activity people took part in, the more participants enjoyed the activity, the more they reported that their understanding of air quality had improved.



Understanding was significantly positively correlated to behaviour change intent.
A Spearmans' Correlation was computed across all activities and indicated a significant positive correlation between **understanding and behaviour change intent [rs(716) = .401, p<.000]** i.e. no matter which activity people took part in, the more participants reported that their understanding had improved, the more likely they were to say they were going to change their behaviour.



Different activities appeal to different ages, genders and communities. While climate change and air pollution are serious topics, **learning and engagement needs to be enjoyable!**



- **Diverse communities need representation in climate/air pollution policymaking**
- **One size does not fit all: engagement activities attracted different demographics**
- **Policymakers should plan varied activities to appeal to segmented social groups**

Attitudes and values

Different worldviews require we:
- Segment activities
- Engage role models to connect communities
- Include marginalised communities, including women.

ClairCity found enhanced effort is needed to include those most impacted by development.

Enjoyment

Comprised of intrinsic motivation to participate via playability, social participation, social persuasion and improved efficacy.

ClairCity found increased enjoyment relates to increased understanding.

Knowledge and understanding

These aspects help us make informed decisions.

ClairCity found 1) it is important to understand audiences' baseline before engaging them and 2) sharing their lived experiences with policymakers improves policymaker knowledge and understanding.

Skills

People have different capacities to change based on skills, connections, finances, technology, and policies.

ClairCity found that co-developed solutions can overcome some of these barriers and spark behaviour change.

Behaviour

Citizen-led solutions can reduce emissions, in some cases with greater speed and ambition.

ClairCity found that increased understanding relates to increased intention to change behaviour.

Engage diverse participatory methods for emissions reductions

Surveys

Engages more educated people. Need to focus on policy setting type questions as well as policy shaping. Can complement other approaches.

Serious games

Engages young people, in particular young men. Appeals to those with less expertise on the topic.

Educational challenges and videos

Fun ways to involve communities, perhaps as a precursor to community workshops.

Community workshops

Designed with and for communities. Can focus on specific issues and be light touch or in depth.

Policy workshops

Engages older people with higher expertise.

www.claircity.eu

ClairCity

Community resources

www.claircity.eu/take-action/community-activator

@Claircity
@WecountH

www.claircity.eu/take-action/educator

http://www.claircity.eu/take-action/science-communicator/

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Fogg-Rogers, L., Sardo. A.M, Csobod, E., Boushel, C., Laggan, S., Hayes, E. (Submitted). Behaviour change intention is positively correlated to citizen enjoyment and learning in public engagement activities. *Environmental Science and Policy.*

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