Air Pollution and Cremation

Dissertation MSc Environmental Health

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Is the current environmental permitting process effective in protecting the health of the population and reducing air pollution surrounding crematoriums?

Aim and Objectives

The aim of this study is to assess whether the current environmental permitting regime is adequate in protecting the health of the population living near crematoriums now and in the future with the inevitable increase in demand.

- Identify the current environmental permitting regime for crematoriums and what impact emissions/potential emissions can have on the public's health.
- Evaluate the current issues surrounding crematoriums and emissions worldwide.
- Explore industry and regulators perceptions of environmental permitting as a method of managing air pollution from crematoriums.
- Assess the adequacy of the environmental regime and its perceived effectiveness in reducing air pollution and formulate recommendations for future management of crematorium emissions.

Methodology

- **Qualitative Approach**
  - Qualitative Interview
    - Face to Face Interview

- **Participants**

- **Data Analysis**
  - Coding and Thematic Analysis

Discussion

- Air Pollution and Health
- Environmental Permitting
- Cremation
- COVID-19 Pandemic and Excess Death

What are the alternatives?

- Natural Burial
- Human Composting
- Alkaline Hydrolysis
- Promession

Debate

How is disposing of the dead going to look in the future?

- ✓Ethical
- ✓Sustainable
- ✓Environmental

ClairCity
Citizen-led air pollution reduction in cities

UWE Bristol | University of the West of England

With:

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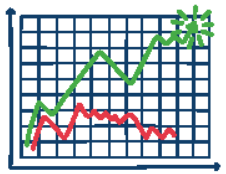
How the ClairCity process engages with a city & its citizens

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

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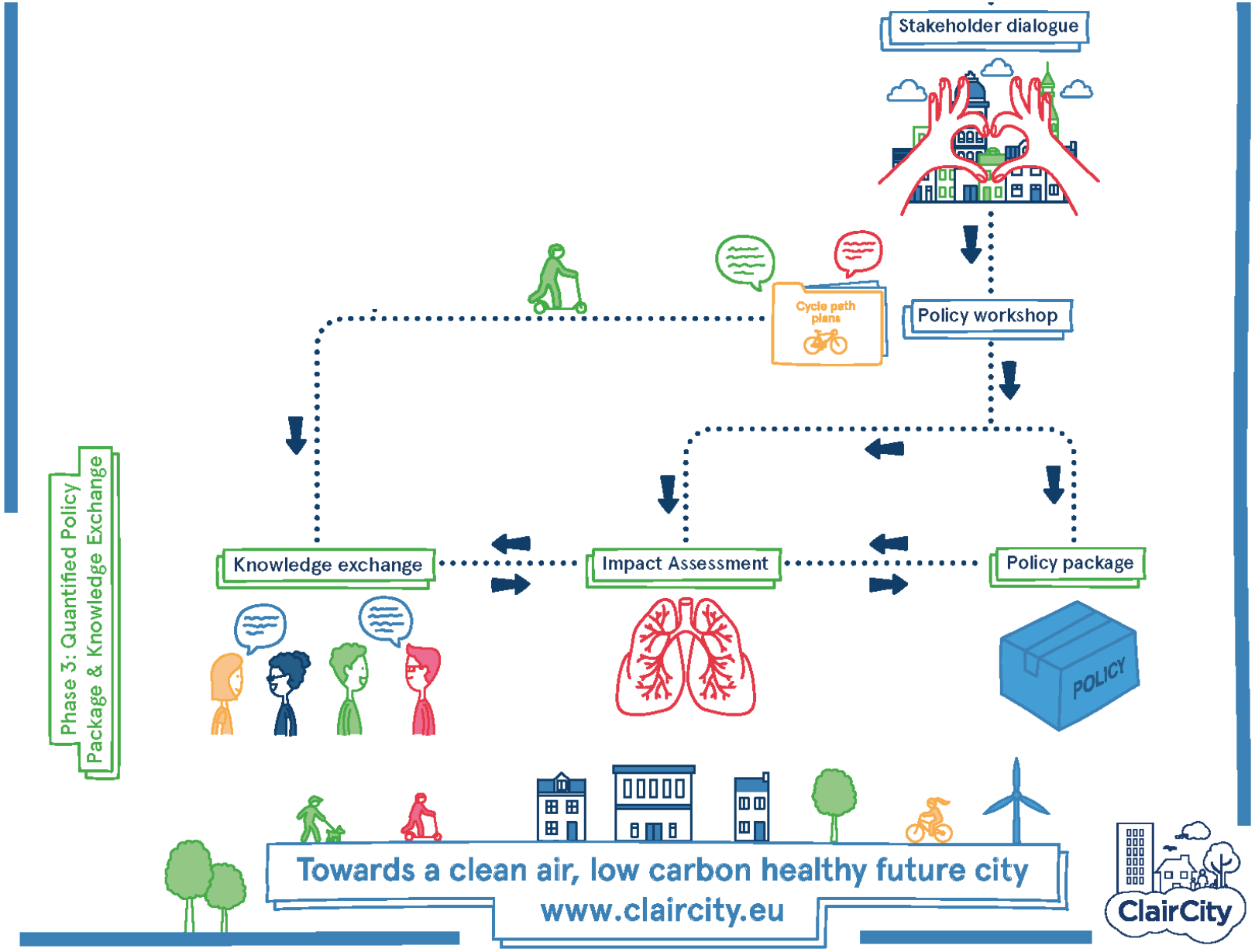

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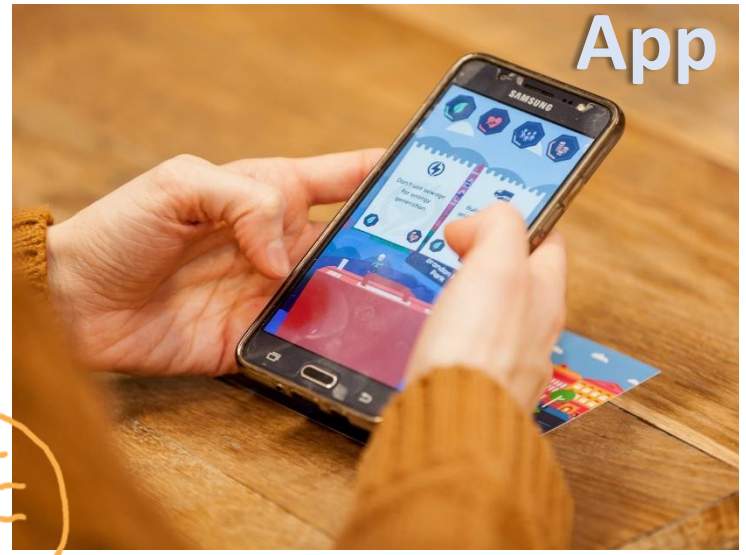

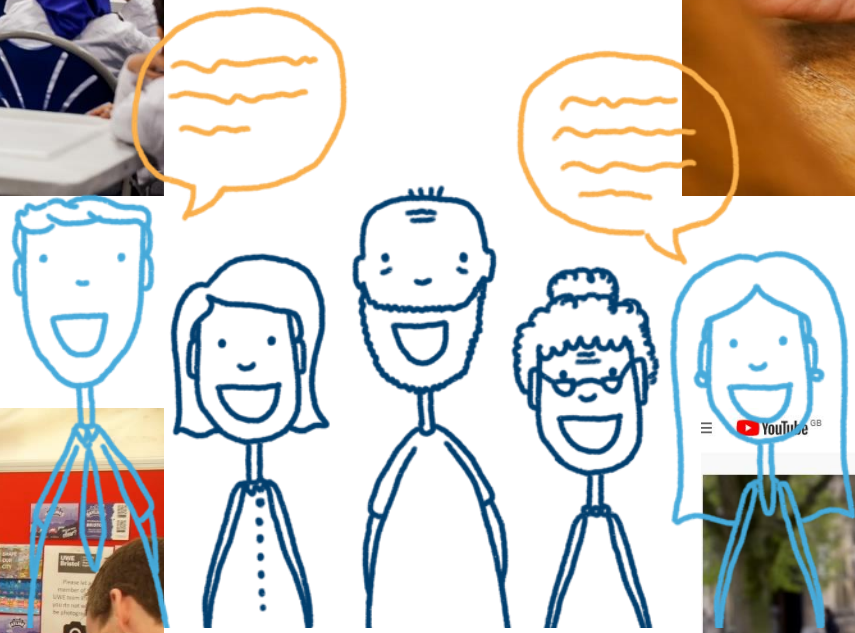

ClairCity

City Hall

Bishopston

Brislington

Barton Hill

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“Unfortunately, I use my car…“

“Not enough public transport (train and bus) in terms of frequency and diversity. Current public transport are too expensive and I am living too far away from work to be able to cycle. I do want to change! Unfortunately it’s too challenging at the moment.”

(Female, BME, degree qualification)

“Have you tried going to the countryside with two kids but without a car? No cycle lanes, no acceptable buses at most places.” *[Male, white, degree qualification)*

COMMUTING	High polluting choice in future (conventional car only)	Low polluting choice in future (car and walk; walk and bus, EV, etc)
High polluting choice in present (conventional car only)	31 Entrenched	85 Looking for positive change
Low polluting choice in present (car and walk; walk and bus, EV, etc)	22 Getting worse	279 Staying positive

LEISURE	High polluting choice in future (conventional car only)	Low polluting choice in future (car and walk; walk and bus, EV etc)
High polluting choice in present (conventional car only)	47 Entrenched	71 Looking for positive change
Low polluting choice in present (car and walk; walk and bus, EV, etc)	21 Getting worse	321 Staying positive

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Citizens seek more ambition from policymakers

Overall preferred policy measures of Bristol citizens from ClairCity engagement process

Measures	Clean Air Zone	Active transport	Public transport	Cleaner transport	Energy measures	Other measures
Mentioned in all three main ClairCity engagement activities *)						
1. Ban/phase out most polluting vehicles (not just charge)	x			x		
2. Make buses greener and cleaner	x		x			
3. Cheaper public transport			x			
4. Create good alternatives to car use – walking and cycling		x				
Mentioned in two out of three main ClairCity engagement activities						
1. Reduce vehicle road space – increase public transport space			x			
2. Improve walking environment in Bristol		x				
3. Charge older/ more polluting vehicles entering the city	x			x		
4. Promote electric vehicles				x		
5. Awareness raising to promote active and public transport		x	x			
6. Make it easier for employees to work from home						x
7. Make property developers consider air pollution and climate change						x
8. Building housing close to major employment zones						x
9. More local shops and facilities in neighbourhoods						x
10. Organisations to provide more flexible working hours for employees						x
11. Improve energy efficiency for housing (rented/existing/new)					x	
12. Increase generation of solar wind and power					x	
13. Spread economic opportunities across different areas of the city						x

*) main ClairCity engagement activities: Delphi process (3 rounds citizen engagement in questionnaires, interviews, workshop), Mutual Learning Workshop (expert workshop), Skylines game (mobile phone game for citizens)

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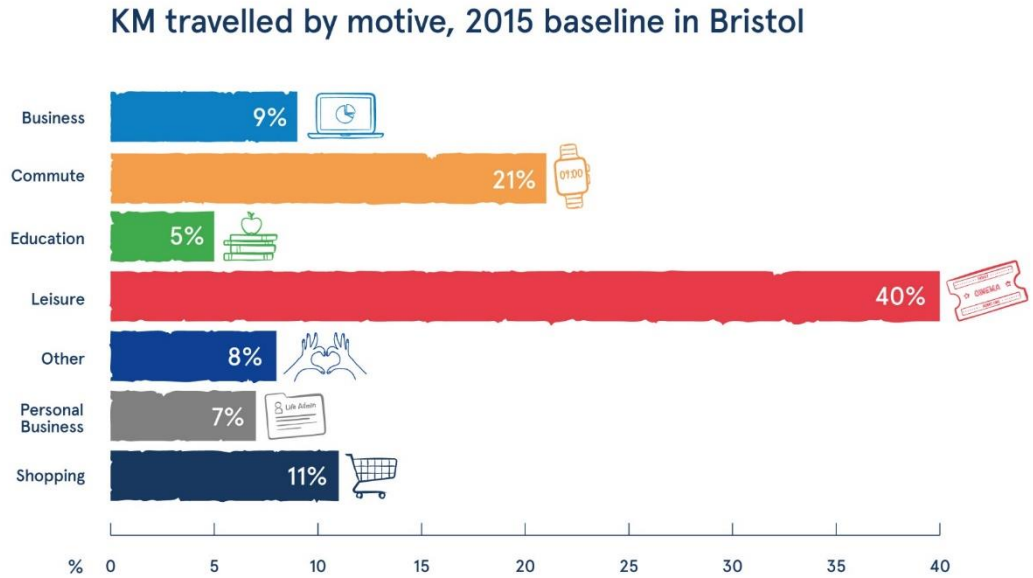
ClairCity Policy Summary

Bristol's future with clean air

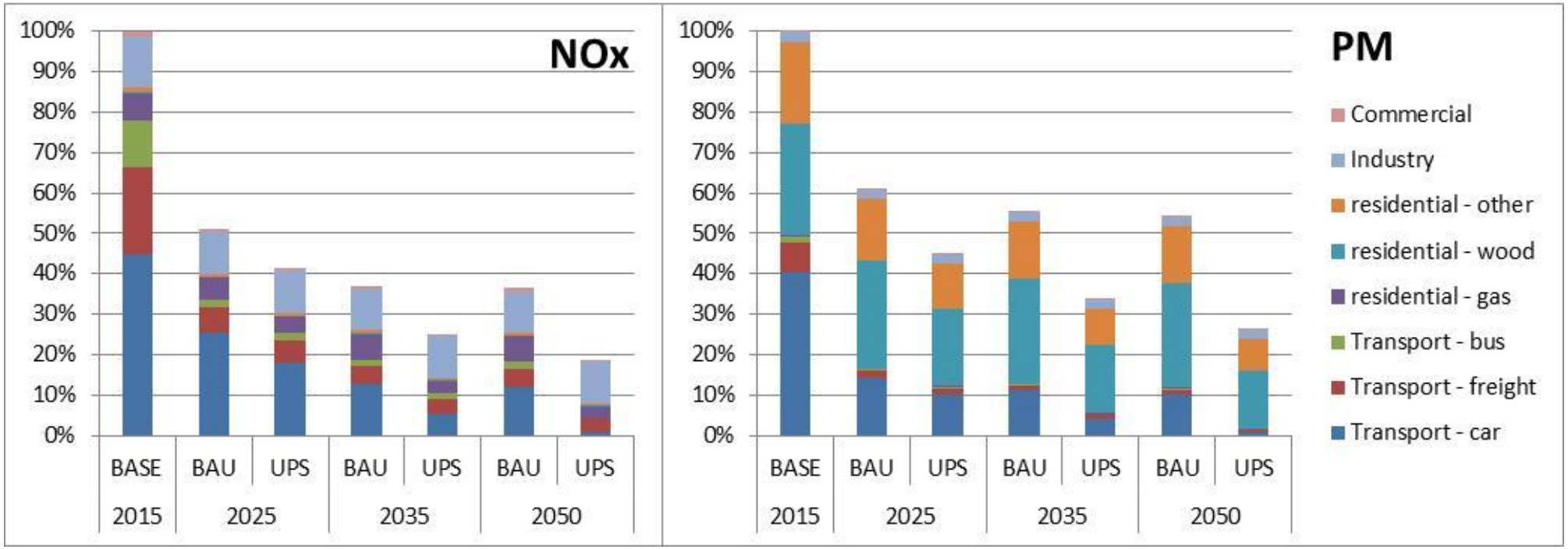
Citizen-led air pollution reduction in cities
www.claircity.eu



This graph shows the relative contribution of each motive to total KM travelled in Bristol in 2015.

IN BRISTOL, LEISURE AND SHOPPING ACCOUNTS FOR HALF OF ALL TRAVEL JOURNEYS IN A CAR - THAT'S MORE EMISSIONS THAN BUSINESS AND COMMUTING COMBINED

Citizens' Unified Policy Scenario



ClairCity modelled these Unified Policy Scenarios (UPS) and compared them to our Business As Usual (BAU), leading to compliance with legal NO_2 limit values in 2025.

The number of premature deaths would be reduced by about 50% in the UPS scenario.

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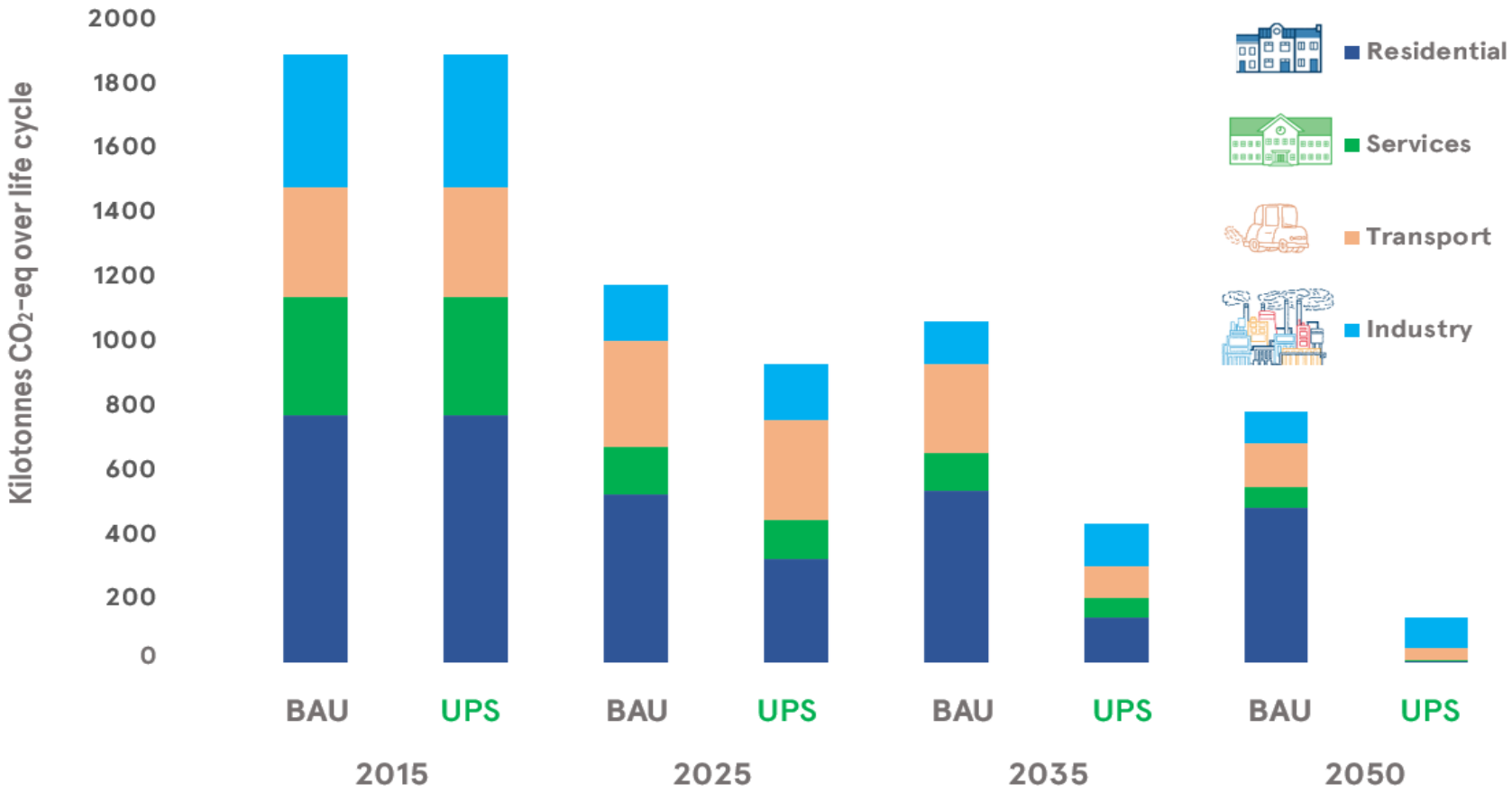
Carbon UPS reductions by 2050 (kilotonnes CO_{2e})



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Our future with clean air

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Sensor.Community is

a contributors driven

global sensor network that

creates Open Environmental Data.

Our mission is

to inspire and

enrich people’s lives by offering

a platform for the

collective curiosity in nature that is

genuine,

joyful and

positive.