1.5°C Life

Pilot Project Report

December 2021

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01

Foreword

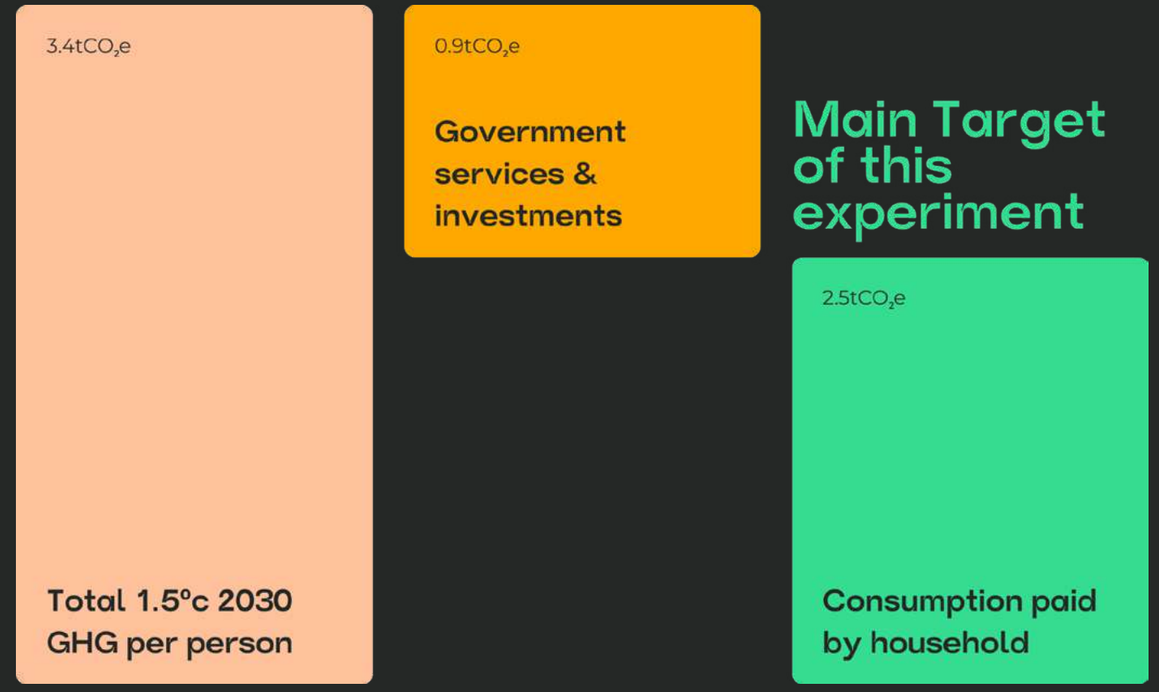
As we write this report, the COP26 meeting in Glasgow has concluded and we are still heading for global heating well above 1.5° Celsius.

WE TALK ABOUT THE IMPORTANCE OF THE 1.5°C GLOBAL CLIMATE GOAL AND THE IMPORTANCE OF EQUITY, BUT WHAT DO THESE CONCEPTS MEAN IN PRACTICE FOR THE WAY WE LIVE AND ORGANIZE OUR SOCIETIES?

The **Intergovernmental Panel on Climate Change (IPCC)** reports estimate the maximum amount of CO2e we can emit to have a chance of staying under 1.5°C. To keep under that budget, every year we will have to **cut our carbon emissions by about 8%**; divide the budget by the population and in **2030** we have a maximum annual budget of **3.4 tonnes CO2e per person.**

THE '1.5-DEGREE LIFESTYLES: TARGETS AND OPTIONS FOR REDUCING LIFESTYLE CARBON FOOTPRINTS' 1 REPORT DETERMINED A PORTION OF THAT TARGET ON WHICH INDIVIDUALS HAVE A MORE DIRECT CAPACITY TO CHOOSE.

Leveraging other studies, it "calculated that on the global level, **72% are related to household consumption**" - the stuff our households directly pay for. This leads to a ´lifestyle carbon footprint´ target of **2.5 tonnes CO2e per person per year**, which was chosen as the focus of this project, while keeping in mind the overall emissions target. Our project team got together to set up a citizen science project, collaborating with volunteers who were keen to participate in the experiment of **living at 1.5°C compatible levels.**



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THE CONCEPT OF 1.5°C LIFESTYLES IS BASED ON AN EQUITY PERSPECTIVE – SUGGESTING A PER-PERSON TARGET RATHER THAN NATIONAL OR GLOBAL AVERAGES.

Our project has also used this equity perspective, translating those 1.5°C lifestyle targets into a daily budget of approximately 6.8kg per person.

The difficulty with equity-based personal carbon budgets is that we each have **different starting points**, in terms of what is possible for us personally as well as the infrastructure, services and social institutions that we live within. We explored this equity-based perspective by analyzing the possibilities for **1.5°C lifestyles for 16 people** with different life circumstances in **six countries.**

AS THIS WAS A SMALL PILOT, WE HAVE NOT BEEN ABLE TO ACHIEVE DIVERSE REPRESENTATION WITHIN PARTICIPANTS OR THE ORGANIZING TEAM:

We have over representation of white, middle class sustainability professionals – and this will have contributed to the finding that about two thirds of participants were able to stay within the 1.5°C lifestyles budget and enjoyed the experience of doing so.

But even with our small and unrepresentative sample, we have been able to explore some of the inequalities that shape people´s ability to live sustainably, most notably, unequal access to services and infrastructure such as household energy and local transport. We plan to explore these aspects in greater depth, and with greater diversity of representation, in future iterations of the project.

Participants were asked to track the emissions impact of all their actions for a month, as well as contributing with stories and photos documenting their challenges and triumphs.

THEIR QUANTITATIVE AND QUALITATIVE DATA HELPS TO INITIATE IMPORTANT WORK ABOUT THE SOCIETAL SHIFTS THAT '1.5°C' AND 'EQUITY' IMPLY: REAL LIFE EXPERIMENTATION HELPS TO PAINT A PICTURE OF WHAT IS POSSIBLE TODAY FOR A VARIETY OF HOUSEHOLDS.

It also highlights those shifts that are only possible through interventions from policymakers, businesses and other institutions. These social and political insights about the necessary systemic changes can be harvested for dialogue with civil society, policymakers and the media.circumstances in **six countries.**

THIS PROJECT IS NOT ABOUT SACRIFICE OR PERSUADING PEOPLE TO CHANGE:

it is celebrating the contribution of early adopters as a test for future mass adoption of various 1.5°C compatible lifestyles. It's not a behaviour change experiment–participants are generating the data that will help initiate deep change while maintaining that critical public acceptance for strong interventions.

As Mike Berners-Lee wrote in his book There's No Planet B,

"We need to think beyond the immediate and direct effect of our actions and ask more about the ripples they send out."

THE 1.5°C PILOT PROJECT SEEMS TO SHOW THAT PERSONAL CHANGE CAN MAKE A DIFFERENCE. BUT MORE IMPORTANTLY, SUGGESTS PRECISELY WHERE SYSTEM CHANGE IS MOST CRITICAL; WE CAN'T EXPECT PEOPLE TO GIVE UP FLYING IF THERE ARE NO TRAINS, TO LIVE IN APARTMENTS WHEN THERE ARE NONE FOR FAMILIES, TO RIDE A BIKE WHEN THERE IS NO SAFE PLACE TO RIDE.

This month-long pilot project has been used to refine the concept, make the technical tools publicly available and start growing a community of citizen scientists. The 1.5°C Pilot Project is a great place to start, but it's just the beginning.

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02

Executive Summary

The first real-world pilot project on living with the 1.5°C targets

AS A UNIQUE REAL-WORLD PILOT PROJECT ON LIVING THE 1.5°C TARGETS INVOLVING A GROUP OF PEOPLE FROM MULTIPLE PARTS OF THE WORLD, THE MOST BASIC CHALLENGE WAS SETTING UP THE PROJECT WITH ENOUGH ROBUSTNESS THAT SOME VALUE COULD BE DERIVED FOR BOTH THE PARTICIPANTS AND MORE GENERALLY FOR SOCIETY.

Participants were from the UK, Canada, Nigeria, Germany, Portugal and the US, and had very different life circumstances, some living in dense cities, others going through health issues, others having access to quality public services, others having difficult access to electricity, etc.

The project was designed by its team members past tracking experiences and carbon emissions calculation knowhow, and supported by recent academic research.

The tools and methods created for this pilot project resulted in a distinctive approach that involved data collection, storytelling and community building. While both participants and the organizing team did point out how the experiment needs to be improved, participants noted its value and learned a great deal from it and the organizing team identified tendencies that could serve as hypotheses for future more robust experimentation, including a greater sample of people and more standardized tracking processes.

Here are the main ways in which the **project was structured**

- Carbon tracking spreadsheet: Participant´s registered their daily actions (e.g. meals), routine actions (e.g. electricity and internet use) and amortized services or goods (e.g. housing, vehicles, appliances, clothes).
- Stories: Participants shared stories about their experiences during the week throughout the month-long experiment, which provide insights into their perceived barriers, victories, and strategies.
- Community Building: through a social platform, participants were able to engage, share and ask questions with other participants and the organizing team.
- Advanced data reporting: we created deeper data-based analysis through comparisons and scenarios, including comparing our results from this pilot with the 1.5°C lifestyles targets for 2050.

4
WEEKS DURATION

16
PARTICIPANTS TRACKING

6
COUNTRIES INVOLVED

36
BLOG POSTS

7.293
ACTIONS TRACKED

392
DISTINCT ACTION TYPES

379
DAYS TRACKED

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This pilot project was focused on creating a proof of concept for this approach that could be replicated or expanded.

Therefore, while some tendencies have been observed from our data analysis, it is acknowledged that no conclusions could be derived from them. Despite known significant limitations, the project has delivered relevant data and its results led us to formulate some hypotheses to be validated by further initiatives.

Hypothesis 1: Most participants are able to live within the 2030 - 1.5°C budget, using various "lifestyle recipes".

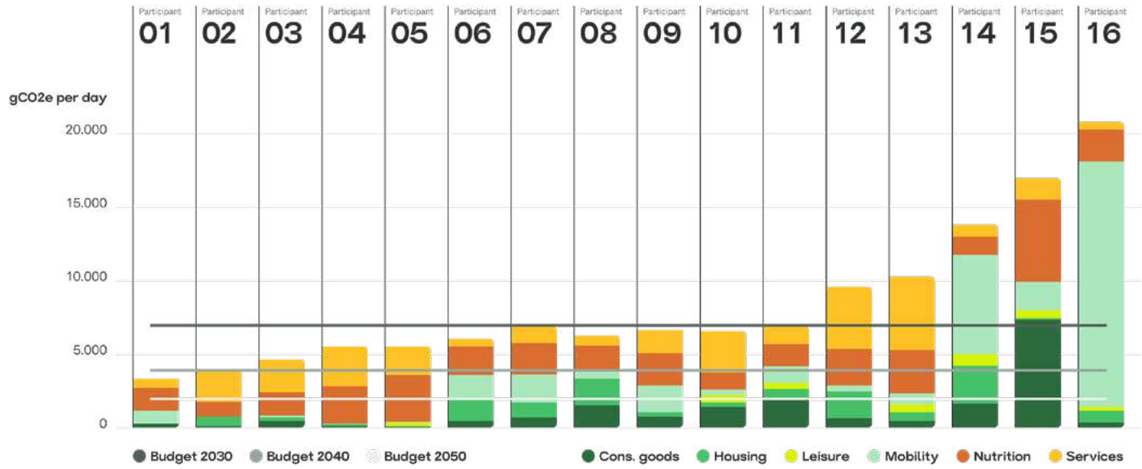
Based on the data and processes from this **4-week real-world pilot** project (while acknowledging the limitations of the pilot) **69%** of the participants (11 out of 16) were able to live within the daily emissions budget of the **1.5°C 2030 targets.**

It is important to note that even though the participants represented a diversity of countries, lifestyles and background, they are mostly already knowledgeable about low carbon living and many had already made significant, long-term lifestyle changes to lower their environmental impacts.

The chart below shows the **participant results** (average 5.591 gCO2e/day) and its comparison with the **2030** (6.845 gCO2e/day), **2040** (3.836 gCO2e/day) and 2050 (1.918 gCO2e/day) – 1.5°C targets.

It also disaggregates the individual impact per each one of the six action categories. This level of detail allowed the identification of several individual "recipes" for a low emissions lifestyle, additionally showing a large variety even within the sub-group of the participants that were within the budget.

GLOBAL RESULTS BY PARTICIPANT



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Hypothesis 2: For many, 1.5°C lifestyles require some learning and adaptation, but can be enjoyable and result in healthier ways of living

Through this 4-week experiment, many reported, in various settings, and for various demographics, that living within the 2030 targets was not only doable but even turned out to be beneficial for the participants. Many mentioned taking more time to nurture relationships, eat better and overall lead more physically active and healthy lives.

> **“Living within the 2030 1.5°C targets definitively foster a healthier, more self-conscious, and cheaper lifestyle. Moreover, it can be also very fun (yes, challenging as well!)”**

> **“It reminded me how much of what I enjoy in life is very low impact — e.g. walking, spending time outside, spending time with people I love.”**

Hypothesis 3: Systemic barriers are the biggest perceived challenge for long lasting emissions reduction by individuals.

Although an encouraging **80% of participants** say they can sustain or even improve the carbon footprint they achieved during this pilot, they mention experiencing important barriers that make it more difficult. **75% of the participants** evaluate systemic barriers (local or global) as the main barrier against their individual achievements.

This was also **highlighted throughout the stories** and group chats between the participants: **challenges around mobility, food, housing, energy, etc.**
In this way, this pilot demonstrates the potential for moving from abstract cries of **“we need systems change”** to more nuanced advocacy for specific changes from relevant stakeholders. These nuances are critical now because the infrastructure and institutional shifts we set in motion now must take us to the massive but necessary challenge of achieving the 2050 targets: we cannot risk advocating “in the dark” for systems changes that may not be sufficient or appropriate to **ensure a good quality of life for all citizens** within the 1.5°C targets.

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03

Project Structure

3.1 PROJECT AIMS

The aim of this pilot was to test the possibilities of living withing the 2030 1.5°C targets in different places, and gather data showing which changes are possible now, and which changes require systemic change.

By collecting stories, real life experiences and challenges of people living within those targets, we aimed to move the concept of 1.5°C lifestyles from a hypothetical analysis to a small but growing movement of people who are learning to live this way – and finding out how we might thrive while lowering our emissions to an equitable and sustainable level.

By working with actual lifestyles instead of abstract concepts, we aim to explore new ways of communicating about 1.5°C lifestyles.

The pilot project is a springboard to consider larger interventions, such as a long-term citizen science initiative connected to policy and advocacy work, a documentary, gamification tools for wider offline and online dissemination, by a growing community of 1.5°C lifestyles pioneers. All the developed tools and methods are publicly available via the 1five.org website.

The general timeline of the project was organized in phases with the following sequence

4 Weeks	2 Weeks	4 Weeks	3 Weeks
Create Website, Track Tool and Documents	Invitation and Training of Participants	Lifestyle Actions Tracking and Sharing	Data Analysis and Project Report

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3.2 PILOT PROJECT DOCUMENTATION AND PRIVACY DATA HANDLING

The key documents used during the project were all directed to frame or describe the participants enrollment.
For this purpose, the following documents were created:

* **Introduction Letter** to be sent in invitation communication to possible participants. [we asked general questions to characterize some differences between our participants (e.g. rural/vs urban, etc)]
* **Template to share stories** to be used by participants to share their weekly lifestyle stories
* **Data Privacy Agreement** to describe the data privacy compliance and to be signed by participants.
* **Tracking spreadsheet** , one per participant. To track the emissions.

All documents were stored in a private Google Drive area with restrict access.

3.3 PARTICIPANTS

A total of 81 invitations were sent to potential participants that could have some or all of the following characteristics, in order of importance:

A. Be able to live, or already living, a low emission lifestyle under the 1.5°C 2030 target.

B. Have the time and commitment for a full 4-week pilot of action tracking and story sharing.

C. Be knowledgeable about the concept of emissions footprints.

THE PILOT AIMED TO INCLUDE AT LEAST FIVE COUNTRIES WITH A MINIMUM OF TWO PARTICIPANTS IN EACH COUNTRY.

In the case of an invitation acceptance, the participant received a Data Privacy Agreement to sign and were introduced to the tracking and story sharing methods in a group video call. Only after this process were the remaining participants enrolled in the pilot.

The table below shows the number of contacted persons per each phase and country.

Country	Invitations	Accepted invitations	Enrolled in pilot
UK	23	8	6
Germany	20	9	9
Canada	12	7	2
US	10	2	2
Portugal	7	6	2
Nigeria	4	4	1
France	4	-	-
Switzerland	1	-	-
Total	**81**	**36**	**22**

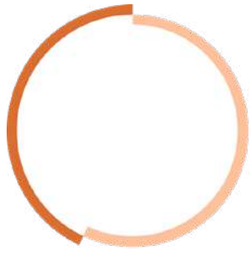
AT THE END OF THE 4-WEEK PILOT PROJECT, WE SENT OUT AN OPTIONAL SURVEY TO ALL THE PERSONS THAT HAD ACCEPTED THE INVITATION.

The participants that did not accept the invitation or were not enrolled gave the following answers to our survey:

How knowledgeable were you of **1.5°C emissions targets** and **budgets** before we reached out to you?

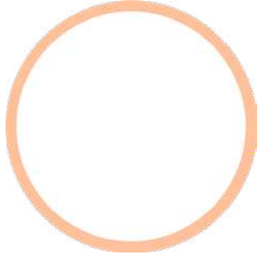
43%
Very much So

57 %
Some notions



Do you work or are actively involved in the **emission reductions** sector and activism?

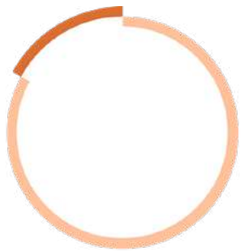
100 %
Yes



Was **perceived time investment** a big barrier for your **pilot** participation?

17 %
No

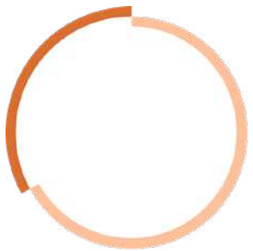
83%
Yes



Was **inability to change lifestyle** a big barrier for your **pilot** participation?

33%
yes

67%
No



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3.4 COMUNICATION CHANNELS

Website

The website was a key tool along various phases of the project to show the project goals to various stakeholders, describe the pilot to the possible participants and partner institutions, inform about the official supporters and host and share the participants weekly stories during the pilot duration.

The main sections of the website are:

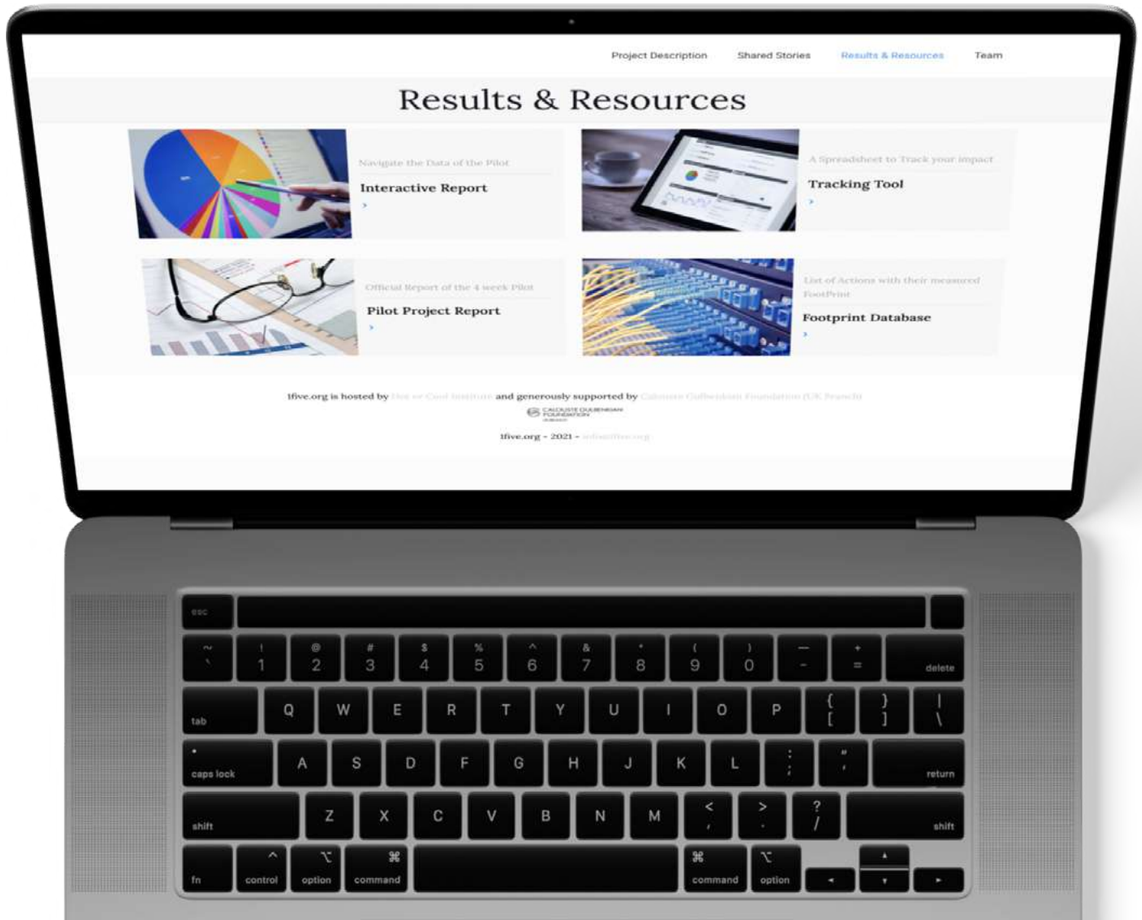
1. Homepage: https://1five.org/
2. Shared Stories: https://1five.org/stories/
3. Team: https://1five.org/team/
4. Others will be added over time (such as resources, FAQ, etc.)

Participants brainstorming

In order to create a community-like experience, all participants were invited into a web-based conversation room (in Slack software).

The room was organized in seven topics:

- Carbonfreebies
- Data-collection-support
- Innovations-inspirations-and-green-ideas
- Introduction-channel
- Random-outoftopic
- Share-your-questions-here
- Sharestories



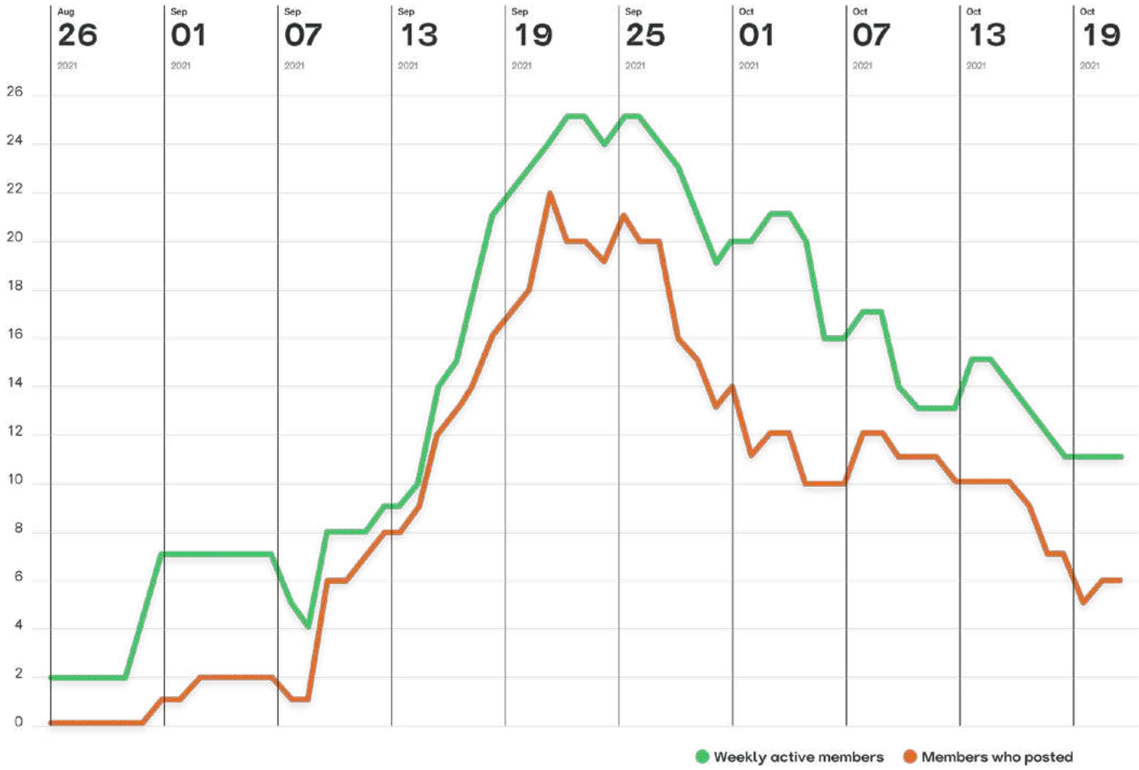
A total of 1.872 messages were exchanged in this chat which accounts for an average of more than 200 messages per week or 30 messages per day.

This high level of involvement of the participants was very encouraging and revealed the sincere interest and dedication that people felt towards this work – whether or not they were able to achieve the emissions target. Participants shared questions, knowledge, ideas, inspiration and moments from their experience. Almost all the active members were not just reading messages but posting and answering (see chart). This group experience was an important motivational tool, and gave a great deal of fun and connection with others.

Participants shared questions, knowledge, ideas, inspiration and moments from their experience.

but posting and answering (see chart). This group experience was an important motivational tool for keeping going with the tracking, and gave a great deal of fun and connection with others.

From a data collection perspective, the group chat enabled us to pick up important technical questions about how to track certain activities, challenge and refine our methodological assumptions, and add additional actions to the database that were not foreseen by us but were important to participants, such as emissions of plant-based milk.



3.4 TEAM

The project team came together from a mix of personal and professional interests and previous network.

The team member's contributions and background are better described in their own words, also stated in the public website.

LinkedIn

Beatrice Meo

I am a project manager with a background in Business and Climate Change studies. After a few years of international experience in a big Berlin-based company, I decided to steer my career path and started a master in Environmental, Social and Economic Sustainability. I have been working on different climate change adaptation and mitigation projects, and I am currently supporting Hot or Cool in project management and coordination.

Why I'm excited to contribute to this project?

After embarking on a sustainability journey with a community of international change-makers in Berlin, I now have the opportunity to contribute to a project that fosters knowledge and experience exchange with citizens from multiple countries, to achieve common targets that I consider critical for our future.

LinkedIn

Kate Power

I'm Kate Power, a consultant on sustainable consumption, behaviour change and sustainable lifestyles. I'm from the UK but now live in Germany with my husband and two daughters. I am the Development Director at Hot or Cool Institute as well as freelance consultant.

Why I'm excited to contribute to this project?

I am excited to be part of a citizen science initiative that shows the different ways of living that are possible with a 1.5-degree lifestyle - and also makes it clear where systemic change led by governments, businesses, local authorities and institutions can make it easier for us to live sustainably. I am also excited to learn from the other participants and pick up new ideas on how to create a sustainable way of living while having the maximum fun!

Twitter

Lloyd Alter

I am a writer for the environmental website treehugger and just completed a book “Living the 1.5 Degree Lifestyle” where I documented my attempt to live within a carbon diet of 2.5 tonnes per year. Previously I was an architect and then a real estate developer. I am a baby boomer in Canada and probably had a 30 tonne footprint a few years ago, and I am part of the generational cohort probably responsible of more carbon per capita than any other; we have to change our ways.

Why I’m excited to contribute to this project?

Because I want everyone to share the experience.

LinkedIn

João Wemans

I am a father of two daughters living in Lisbon - Portugal. I am a Physics PhD in Lasers that followed the entrepreneur route for 10 years. I opened a series of Startups and am currently Director for Data Services in EVISO Spa (Italy). What drives me currently is to deliver actionable insights out of highly complex challenges... like global warming!

Why I’m excited to contribute to this project?

The ambition, complexity and possible impact of the challenge of this project is what excites me more. I am also looking forward to keep sharing a common purpose with a motivated and good spirited team.

LinkedIn

Jean-Christophe Mortreux

I’m passionate about being personally and professionally invested in projects that benefit society. Overtime, that has evolved, from setting up high school associations, to being part of the Green Party, to working in the wind & solar industry, to developing an app which helps people transition to low carbon food habits, to being part of this 1.5oC life project.

Why I’m excited to contribute to this project?

I ’m really curious to see how it’s going to evolve. I think it could become a very popular experiment that has the potential to provide incredible insights to change the system for the better.

LinkedIn

Pedro Almeida

I am an Environmental Engineer and an Entrepreneurship Network Specialist. I currently own a retail business to promote Conscious Consumption around Healthy Eating and Health frameworks. I’m also a consultant in Sustainable Agriculture for dry climates, focusing on ecosystem restoration, conducting experimentation in various terrains In addition, I animate a group to debate the Role of Forests in the Water Cycle and the acceleration of climate change mitigation

Why I’m excited to contribute to this project?

I rely on everyone’s growing participation to revert the Climate Change situation. Lifestyle change has a hugely significant impact on that. Moreover, through household lifestyle change we can influence the government and capital investment, for example with regards to fossil fuels, food, nutrition, and sustainable agricultural.

LinkedIn

Simone Re

I am a student in “Ecotoxicology and Environmental Sustainability” at University of Siena. I will soon complete a master’s degree and I am doing an internship in a NGO in Berlin with the aim to write my dissertation. I am really passionate by nature and sustainability. For that reason, I am writing my thesis on how scientific paper (mostly concerning LCA methods) can be used to influence governance and policy maker in order to achieve the 1.5oC targets.

Why I’m excited to contribute to this project?

Because this project is a concrete attempt to try to live the 1.5oC lifestyle. I’m really excited to be part of this great project with a community of people coming from all over the world with a common purpose.

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04

Creation of the Tracking Tool and Actions Database

4.1 TRACKING TOOL AND PROCESS

The tracking tool was created in Google Spreadsheets to comply with the following guidelines:

- Privately and easily accessible to all participants without the installation of any software or application.
- Allow for improvements during the 4 weeks of the Pilot Project and to be fully editable after the Project.
- Minimize the need for any calculations by the Participants while providing clear insights on lifestyle impact.
- Integrated via search with a database of trackable actions easily understandable by the Participants.

A version of tool is publicly available on the project website: **1five.org**

Input Section – Tracking Actions

Input Section – Tracking Actions

In order to effectively & comprehensively capture the participants emissions, we've created three different tracking sections:

1. One-time actions
2. Routine actions
3. Amortized items.

One-time Actions:

These are actions that can be considered as accomplished in a day. For example, the direct emissions from driving somewhere, or if we eat something, or go to the movies. These actions are accounted in full for the day they are performed. Here is an example of how it is entered in the spreadsheet.

One Time Action	gCO2e	Unit	Units	Persons	My gCO2e
Nutrition: Meal - Low red meat (~100g) = 4025gC0	4 025	Meal	1	1	4 025

Routine Actions:

These actions tackle the more recurring, month or yearly type services we subscribe to. For example, we may have internet, energy, insurance monthly subscriptions. Such services have been allocated evenly to each day based on the duration of the service and the consumption of this service. Here is an example of how it is entered in the spreadsheet.

Routine - Action	gCO2e	Unit	Units	Persons	Start	End
Services: Energy - Power Consumption Canada, QC =	35	kWh	243	4	20.set.	20.out.

Amortized Durable Goods:

These are goods that have an expected long life, typically 1 year or more. For example, our home, vehicles, fridge and other household appliances, furniture, clothes, etc. Here, we are tracking the embodied emissions mainly from the manufacturing of these goods. We have calculated the embodied emissions to be amortized over their typical lifetime (e.g., 3 years for a laptop) and distributed evenly to each day. Here is an example of how it is entered in the spreadsheet.

Amortized Durable Good	gCO2e	Life(Y)	Unit	Units	Persons	Built
Housing: House - multifamily wood frame high bric	258 000	60	m2	120	4	set..1989

Amortizing the emissions of the items we already own, (and the items we buy during the pilot) is an important feature of our method, which gives a more complete picture of our total "lifestyle carbon emission", of the impacts of everything we benefit from: many other calculators exclude embodied emissions.

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Daily Emissions Budget:

The tracking tool provides the participant feedback on the impact of the tracked actions in the "Budget" Section. This section fulfills the role of a "carbonmeter" that enables participants to adjust their lifestyle decisions within the timeframe of the pilot.

	PER CAPITA BUDGET		YOUR AVERAGE*	
	Yr(T)	Daily(g)	Yr(T)	Daily(g)
Lifestyle	2.50	6,845	1.17	3,206

The daily budget of 6.849gCO2e per day per participant is calculated from the 2.5tCO2e per year budget.

To give some reference of what this implies: a vegan meal can be around 500gCO2e; a meal with red meat can easily represent a 4.000gCO2e carbon footprint, or close to 60% of a person's daily budget; a short haul 2-way flight can easily represent 250.000gCO2e or 3.600% of a person's daily budget.

For reference, in addition to the "lifestyle carbon footprint" that the pilot was tracking, the full footprint including government services was also shown in the spreadsheet, in order to give visibility to the total per capita carbon footprint: this represents the 28% remaining footprint which is excluded from the '1.5-Degree Lifestyles' as defined in the foreword.

4.2 TRACKABLE ACTIONS DATABASE

Methodology

The database of possible trackable actions was created with the following trade-offs:

* Comprehensive enough to allow for a granular tracking of the emissions.
* Simple enough to allow for a seamless usability from the participants.

Some other practical decisions were also taken before the data gathering:

1. Search for country-specific variables.
2. Divide the data into the three emission categories (one-time, routine, amortize)
3. When not possible to do granular, include an expenses proxy (CO2e per currency)
4. To simplify the experience, track generic meals and not the ingredients.

Our goal with the databases in this pilot was to cover a comprehensive but simple to handle number of possible tracking actions. For example, we mainly used meal types (e.g. vegetarian, red meat, etc.) instead of looking at specific ingredients, location, transport type, seasonality, etc., which would have led to hundreds of thousands of scenarios. This approach also allowed participants to focus on the highest impact actions: a car, a home renovation, red meat meals, etc.

The data sources used in this project are mainly from free and open source datasets. We list some examples to show the diversity of sources gathered and the complexity of this task:

* Electric grid data from electricmap.org and Mobility data from UK governmental agency.
* Scientific papers on Carbon Life Cycle Analysis for personal care products.
* Book "How bad are bananas" from Mike Berners Lee for financial and insurance services and leisure activities.
* Climate Cook App which bases its footprints on various recognized databases.

In order to create a robust database, all footprints are expressed in gCO2equivalent per Unit (gCO2e), where the unit can vary from an item of a good, a km of mobility, a square meter of a house, etc. An important effort was made into creating a spending proxy estimating for many actions, basing the emissions on the purchase amount for determined goods.

Database Entries and Organization

A total of 392 possible tracking actions were collected and allocated to one of the three tracking types: One-time actions; Routine Actions; Amortized Durable Goods. For each action we described the following characteristics:

A. Category: One of these "Cons. Goods; Housing; Leisure; Mobility; Nutrition; Services"

B. Sub-Category: A list of 49 sub-categories to support the participant search. Example "Meal"

C. Action: The description of the Action itself. Example "Heavy vegetarian (~200g animal byproducts)"

D. Unit: The measuring unit of the footprint. Examples "Meal"; "km"; "piece"; "hour".

E. gCO2e: The footprint in CO2equivalent emission of the unit of the actions: Example "1150"

F. Source: Reference used to estimate the footprint. Example "https://ecoscore.be/en/info/ecoscore/CO2"

G. Country [only in Routine Actions]**:** Example "Germany"

H. Lifetime [only in Amortized Durable Goods]**:** the typical lifetime of a Durable Good. Example "10 Years"

The organization is better described by the following tables with the Categories, Sub-Categories and number of items in each sub-category (nr):

Total One-time actions 188

Category	One-Time action	Number
Cons. goods	Clothes	10
	Cons. goods purchases	5
	Fuel	3
	Home products	5
	Personal care	13
	Tobacco	5
	Various activities	5
	Various goods	5
Total		**51**

Category	One-Time action	Number
Housing	Home durable goods	5
	Housing	5
Total		**10**

Category	One-Time action	Number
Leisure	Leisure purchases	5
	Recreation	5
Total		**10**

Category	One-Time action	Number
Mobility	Mass transit	6
	Personal vehicle	43
	Public transport	1
	Transport equipment	5
Total		**55**

Category	One-Time action	Number
Nutrition	Drink	13
	Example (editable)	1
	Meal	12
	Snack	6
Total		**32**

Category	One-Time action	Number
Services	Acomodations	5
	Finance	5
	IT Services	12
	Services	10
	Services purchases	5
Total		**30**

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Total Routine actions 35

Category	Routine actions	Number
Services	Digital	6
	Energy	13
	Finance	15
	Water	1
Total		**35**

Total Amortized 169

Category	Amortized	Number
Cons. gods	Appliances	4
	Clothes	17
	Durable good	5
	Electronics	51
	IT Products	5
	Sport	14
Total		**96**

Category	Amortized	Number
Housing	Appliances	26
	Furniture	16
	Home renovation	6
	Home repair	5
	House	6
Total		**59**

Category	Amortized	Number
Mobility	EV Car	3
	ICE Car	3
	Repair	5
	Vehicles	3
Total		**14**

Limitations and disclaimer on approach and use of footprint calculations

The method behind footprint calculations is a work in progress,both from the international community and this approach to tracking and analysis is a first proof of concept with much needed improvements and higher participants numbers in the future. We believe there is value from the results and suggestion we do but we advise that caution is necessary when reading the results.

Assumptions made here do not consider many aspects of differentiated needs.

For example, some people may rightfully deserve greater carbon budgets because of health requirements.

For example, in Nigeria, households often need to pay privately for digging their own borehole to access water and / or buy bottled drinking water, as well as buying gas bottles and generators for household energy use.

Walking and cycling are less accessible due to poorly maintained roads and pavements in some areas. In contrast, for the participants in the other countries in our pilot, government services provided the infrastructure for pumping drinking water to homes and connections for household energy.

Having this infrastructure provided gave participants a significant advantage in being able to stay within the daily “lifestyles emissions target”:

These fundamental differences in starting points for lifestyles in different places are essential to consider when planning future developments of this work. These services are also part of the essential data to collect when considering policies, infrastructure and civil society interventions to promote 1.5°C lifestyles.

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Possible future improvements to the tracking tool and database

When choosing what study or source to use as better estimation for the footprints, we acknowledge that other existing sources may point to different footprints, especially due to scope assumptions (e.g. manufacturing, use, end of life, etc.). This is something we propose to improve in future studies. Also, some actions were identified to have a footprint variable within a region, but for simplicity, we choose one single regional reference (e.g. we choose the UK as the only reference for rail mass transit emissions).

With a full roll-out of the project, we hope to produce relevant quantitative and qualitative data that can greatly contribute to the realization of 1.5°C lifestyles, through collaboration with researchers, civil society organizations, policy makers and other stakeholders. We would plan to allocate additional resources to ensure tracking between participants is consistent and ensure that data analysis and cleaning follows state of the art practices.

Key suggestions for possible improvements for the next rounds of citizen science carbon footprint tracking:

A. Footprint Calculations

* More detail on country or region footprint variations.
* Improve food related footprint to include air freighted foods and other supply chain impacts.
* Purchase or get licensed access to a large database like ecoinvent.
* Improvements in the database and country specific datasets would enable more accurate assumptions about emissions of activities and purchases;

B. Support to Participants

* Dedicated support by project staff to ensure greater consistency between users tracking the same elements in comparable ways (e.g. energy, insurance, work & non-work related activities, etc.)
* Establishing an FAQ that answers participants typical questions.
* A dedicated, full-time program of Community Management would enable hands-on technical support, encourage even more discussion and sharing, and increase the retention of participants;

C. Tracking Tool

* Simplifying the tracking mechanism would facilitate greater participation over longer time periods;
* Integrating ways to capture seasonal activities that may be omitted during short period experimentation (winter heating, AC, Holidays, etc.)

D. Project Scope

* Expanding the experiment to a broader range of countries and much greater number of participants would improve the sample set of the findings;
* Additional time for building partnerships with civil society, policy makers and other stakeholders would increase the likelihood of the findings being used to inform the transition to low-carbon living.

We are satisfied that the approach used for a pilot project built so swiftly was suitable to test for the 2030 target, which was the main objective of this pilot project. The level of precision and comprehensiveness of the database would however make it difficult to track with any form of confidence for 2050 targets where being precise on things such as seasonality, ingredient type, etc.becomes an absolute necessity. This is something to consider for future development of the project.

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05

Collection of Stories

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The stories of the participants are a key part of the pilot since they add a personal and vivid insight into the real lifestyle of participants.

As the 1.5°C 2030 targets are a theoretical construct, the stories help to bring these numbers to life so that they can become much more relatable to a mainstream public. It's our hope that stories can take various forms over time: blogs, vlogs, podcasts, books, documentaries, etc.

5.1 COLLECTION METHODOLOGY

The participants were asked to write a story for each of the 4 weeks of the pilot duration.

In order to facilitate the story creation, the 1Five team created a list of questions to be addressed in the weekly stories (details in section 4.2), which was sent out by email.

The questions for week 1, 2 and 3 aimed at gathering information related to aspects such as participants challenges, feelings and learnings.

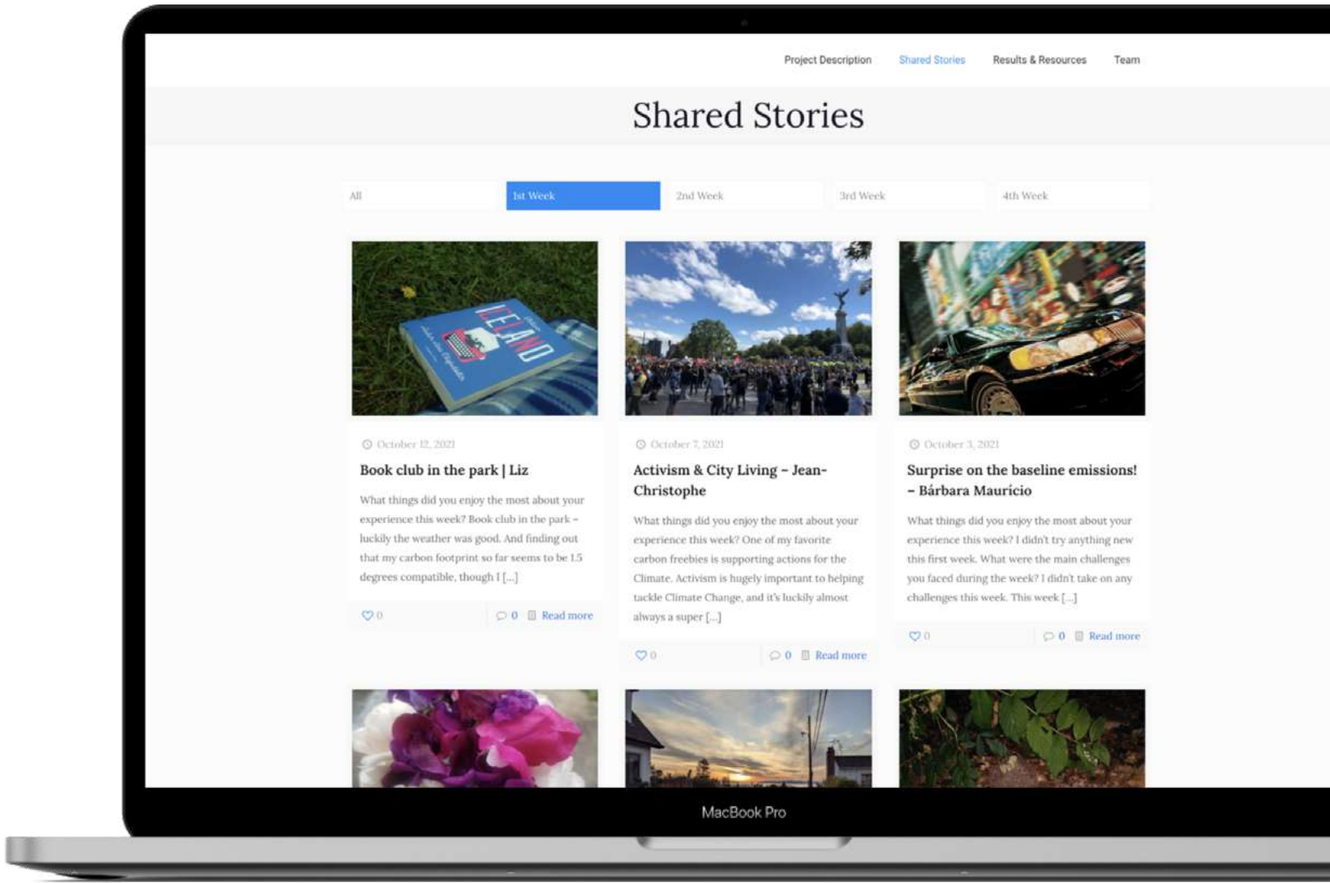
The fourth (and last) weekly story aimed at collecting insights on participants' general perception of the project, their consideration for an equitable and healthy way to achieve the 1.5°C 2030 targets and its benefits, and the challenges and opportunities to achieve the 2040 and 2050 1.5°C carbon budget.

Even if it was not mandatory to write a story, a total of 36 weekly stories were collected during the pilot: total of 13 participants wrote at least one weekly story.

11	11	7	7
Week 1 stories	**Week 2 stories**	**Week 3 stories**	**Week 4 stories**

Total 36

The stories are available on the website in https://1five.org/stories/ as shown in the image below.



5.2 ANALYSIS OF STORIES FROM WEEKS 1 -3

Here below are reported the questions guiding the stories for the first three weeks of the experiment. In order to collect insights on different aspects, we decided to change the questions for the fourth week, which can be found later on at the end of this section. For each question we have summarized the most frequent themes and included illustrative quotes.

Question 1: What things did you enjoy the most about your experience this week?

A. Reflecting on daily routines. One of the aspects that was often mentioned was the opportunity participants took to reflect on their routines and their lifestyle's footprint. This element appears in many stories, especially at the beginning of the experiment.

"I really enjoyed understanding the scales of the carbon footprint that my different actions cause on my total sum" (1st week)

"I enjoyed reflecting on my daily routines and activities, as well as taking stock of the things I have and need to see what impact they have." (1st week)

"The first week of the 1Five experiment has been incredibly insightful on several things, but most of all it "forced" me to think about how to best balance my habits in order to stay within the daily budget."

"I wanted the first week of this experience to be representative of a typical week for me and not change my habits. This was an opportunity to get a sense of what was the carbon footprint of my daily life and to identify areas where I could improve." (1st week)

B. Appreciating low-carbon activities. By taking part in this experiment, participants had the chance to discover (or, in some cases, re-discover) their favorite low carbon activities and implement them in their daily life.

"I love the feeling of cycling for commuting: I spend time outside, I can look at the scenery and I'm doing a healthy activity. It's just super refreshing, especially when the infrastructure is adequate." (1st week)

"I am much more aware of my carbon-freebies and how these are the most fun parts of my life". (1st week)

"It reminded me how much of what I enjoy in life is very low impact — e.g. walking, spending time outside, spending time with people I love."

"Spending time with my family and exploring low-carbon activities with my mum. We spent a few days in our house in the countryside and I ended up working with my mum in her herbs garden." (3rd week)

C. Identifying impact-reduction activities. During the experiment, several participants considered how to reduce their daily carbon footprint and meet the 1.5°C lifestyles target. During the pilot, the answers shifted from being more generic to more detailed and descriptive.

"I have been curious and concerned about activities that would help reduce my carbon emission level in Nigeria. Also, whenever I move around in the community where I stay, I think of practical ways to meet and live the 1.5°Cs target." (2nd week)

"For this second week, I decided to pay more attention to what I ate as this was the highest contributor to my budget in the first week. I enjoyed trying new recipes that included less red meat, which also helps save money!" (2nd week)

"When faced with three bunches of radish as part of my Too good to go "surprise bag," I couldn't help feeling a bit curious about what I would do with all these leaves because I just couldn't bring myself to throw them into the composting bin. So, I looked up several recipes online and ended up following or modifying them with astonishing results. Not only that, I had enough to also share with friends!" (2nd week)

"My husband and I are now tracking how often we use small appliances (or big ones like a juicer!) and what for, could we use something else instead? The plan is to declutter our electronics so those that we used less than three times in one month will be put up for sale or donated at the end of the year." (3rd week)

Question 2: What were the main challenges you faced during the week?

There were several types of challenges mentioned throughout the first 3 weeks of the experiments. In some cases, participants recognize the difficulty of carrying out more sustainable lifestyles when living with family/friends, especially when it came to food and mobility habits.

Unsurprisingly, the most common challenges relate to food, transport and shopping for new consumer goods:

A. Eating habits. Several participants mentioned their eating habits as one of the biggest challenges they faced, with some people reporting this aspect more than once along the whole experiment.

The main challenges that I faced during the week are linked to my attempts in trying to start substituting some byproducts food with ones that are more sustainable. For example, I started using almond milk instead of cow milk for making my porridge during breakfast. Furthermore, I tried to eat more vegan or vegetarian food at lunch and this was possible thanks to my colleagues. They sometimes proposed to eat in vegan/vegetarian restaurants, and I really joined.
It was a kind of surprise discovered that some kinds of dishes based on vegan or vegetarian diet are very tasteful. (2nd week)

Spending time with my family and friends also meant taking parts to some higher-carbon activities. (..) on Sunday my family organized a goodbye lunch in the garden in our countryside, and what weighed the most on my carbon budget was the food I had with them. (3rd week)

My family is not especially on board with living sustainably. We still eat meat (albeit beef is a rarity and we don't eat that much) and our lack of a car is a constant thorn in the side of my wife. (3rd week)

We made lasagna, which meant eating meat for a few meals this week. This drastically increased my carbon footprint, although my average for that week was still under my target budget. (3rd week)

B. Mobility This topic as well was mentioned as one of the most challenging for several participants. In many cases, it was attributed to the lack of sustainable local mobility infrastructure and services.

As public transportations are not developed as they should be, and no trains run from the city to the outer parts of the region, I had to spend a huge part (1/3) of my daily budget in traveling by car from the city of Rome, where my family is based during the week and our house in the countryside (2nd week)

Montreal is a city that has both, very dense areas and suburban sprawl. It's therefore not always easy to see family and friends without using a car or possibly spending 4 to 6 hours in mass transit. (2nd week)

C. Consumer goods

I was surprised by how much carbon was embodied in the screwdriver I bought to fix my phone. Should have got one second hand... (1st week)

I went to visit a friend who just had a baby and bought some gifts – and for the first time was confronted with thinking about the carbon emissions of gifts that I buy. (...) To what extent do we stop being responsible for the emissions of buying a new product if we are able to pass it on?

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Question 3: What were your main lessons learned of the week?

Every learned lesson is worth reading on the website stories but for reporting purposes, we are highlighting the three most salient themes identified by participants. In the first case, we have chosen to report a series of stories that exemplify the evolving awareness of participants throughout the experiment period (A). The second case (B) shows the difficulties encountered in achieving the target, despite the efforts and positive resolutions. The third point (C) reports some good examples of solutions that participants decided to try out, based on their weekly lessons learned.

A. How much carbon is embodied in everything we own or do. The stories from one participant illustrate a learning journey as she considered the various aspects that contribute to our "lifestyle" as the experiment progressed.

The first thing I learned, as I filled in my long-term emissions, was how much carbon is embodied in a home. I'd never thought about the footprint of making the washing machine, the freezer, the fridge, the oven, let alone the radios, the TV and clothing. (1st week)

This week I added my consumption of gas, electricity, water and other services like phone and broadband. I was really surprised that my phone lines (mobile and fixed) and broadband service embodied more carbon than the household electricity and gas consumption together. (2nd week)

How much carbon both saving money and going to a yoga class embodies. (3rd week)

B. It can be hard to remain within the 1.5°C lifestyle target. The experiment demonstrated that implementing a 1.5°C lifestyle is not easy for everyone, and it does not depend only on daily habits, but also on local infrastructures and services provision. This participant´s stories note that their lifestyle changes have not been enough to stay within the target, due to being reliant on fossil fuel infrastructure.

The main lesson learned was that I am out of the target. The main reason for this is gas consumption. I was shocked about that because I thought that I would achieve the target. So, the main lesson is that it is not so easy to stay within the target and sometimes it does not depend only on your lifestyle. (2nd week)

The main lesson learned was that I remained out of target despite the efforts I made. Of course, they were small efforts but I realized it is not so easy trying to have a lifestyle that allows you to stay inside the target. (3rd week)

C. Sustainable alternatives exist. During the experiment, participants became aware of additional possibilities for positive change that are within our power to take action on now.

We can do awesome activities that are aligned with our values, help us meet people, and do something good for our environment and society, with no footprint at all. Our imagination is our main tool to achieving our common climate targets and to leading meaningful lives. (1st week)

Next year I'll invite a lot of friends to help with the grape Harvest. I'll make sure they fully share their cars so that the carbon footprint per mile will become much lower for everyone. (2nd week)

Had a week getting things fixed. I bought new brush motors to fix my 13 year old vacuum cleaner for £9. I also took my 10 year old TV to be repaired – it will cost £90. The TV actually worked but the connection to the computer had failed – complicating technology does mean there is more to go wrong (our previous TV lasted 35 years – having been inherited). Finally our lawnmower cost £250 to be fixed, new would have been £350 but for a saving of £100 it had a new chassis and is as good as new in my opinion. (2nd week)

For me, cycling is a skill to acquire and for another, it could be swimming but cycling really caught my attention for this week. It's worth learning a new skill that would help preserve our planet, limit carbon emissions and meet the 1.5 targets. (2nd week)

Additional insights from the stories are the surprises of learning about the carbon embodied in the purchase of new items, as well as the big role played by government services and infrastructures.

"Before doing this experiment, I would not have thought about the impact of buying these things, as I have been more focused on food, housing and transport – but buying the tights had a bigger impact than the journey in the van, which surprised me" (1st week)

"Our daily choices can definitively influence the level of our emissions, but infrastructures, government services, and systems have a huge impact on it. If train connections between Germany and Italy were cheaper and faster, I would have not been forced to choose flight over train. Same for the transport system in my home town, where many are forced to take the car to reach some destinations within and outside the city." (2nd week)

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Question 4: What would have made it easier for you to achieve or surpass your target this week?

The main perceived obstacles fell into two categories:

* Personal choices and habits
* Government services and infrastructures

Personal choices and habits:

A. Eating sustainable alternatives

B. Purchasing second-hand

C. Choosing sustainable mobility modes

These are some excerpts of answers on this topic:

* I could have eaten less fish. However, what really drove up my emissions by a lot was the use of the car! (1st week)
* Buying the screwdriver second-hand, which would also have been cheaper. Plus eating fewer snacks and sharing cooking with friends. (1st week)
* Replacing red meat with fish and white meat on days that I did not have only vegan meals helped to stay within my daily budget (although on the higher end of it). (2nd week)
* Not eating meat. Though I suspect I probably kept within the target, depending on how the embodied emissions from the building and how the renewable energy tariff is measured in the calculator. (3rd week)

Government services and infrastructures:

A. Second-hand options

B. Bike/walk friendly cities

C. Easier transportation choices

These are some excerpts of answers on this topic:

1. If our city was designed with a good level of density in mind, we would all, family and friends, likely live closer together, which would have reduced the need for longer distance travel. Also, if we had better cycling infrastructure, we could go to way more places by bike. (1st week)
2. Regular public transport between rural towns! (1st week)
3. Having good charity shops / second-hand shops in our small town would be fantastic – although does the low price and low carbon guilt just encourage us to buy / own more than we would otherwise? (2nd week)

Finally, a few participants pointed out the challenge found during the data collection process, in particular during the first week of the experiment.

* Having a reference point would be encouraging. Even though there is the overall target stated at the top of the Excel list, it would be encouraging to have a sample list that is filled in (perhaps one for a typical student, one for a typical family, one for ....) so one can compare and see where one can do better, which would be the low hanging fruits, etc. (1st week)

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5.3 ANALYSIS OF STORY CONTENT FROM THE FINAL WEEK

From the fourth weekly story, the insights collected are reported below.

Question 1: Following this experiment, what benefits do you see for yourself, of living within the 2030 1.5°C targets?

Two dominant themes were:

A. A healthier, cheaper and more sociable life

B. Family and friends' involvement in the long run.

* Living within the 2030 1.5°C targets definitively fosters a healthier, more self-conscious, and cheaper lifestyle. Moreover, it can be also very fun (yes, challenging as well!).

* It's pretty healthy – vegan diet, lots of cycling and walking. Outdoor socializing and home-cooking are generally relaxing and low-carbon. It's also cheap, on the whole, and there's less waste to recycle!

* Although I joined the experiment intending to measure only my individual consumption, I can't decouple my lifestyle from the one of my family. (...) Indirectly, my husband joined the experiment too. While he didn't measure his consumption, he contributed to the household's decision-making and overall consumption at home. He is into repairing things and the other day, he confessed he doesn't miss the microwave.

Question 2: What are the low-carbon activities you find great and would like to make part of your life?

Most common answers in this case were:

A. Implement a second-hand mindset

B. Decrease meat consumption and prefer plant-based diets

C. Switch to cycling and walking

D. More time outside and try out more healthy activities

* Eating a plant-based diet, walking and cycling for short trips, lots of time outdoors, less time shopping.

* I'm pretty happy using my creativity to make delicious meals with rescued food.

* Cycling, walking, having a working' electrical vehicle, not having a smartphone

* I enjoy going on hikes (as seen in the shared picture), walking rather than taking the car when possible, and I'd like to add cycling to my options as well. Reducing waste is otherwise something I find important to lower your personal environmental impact.

* Being outside. Inhabiting my senses — sounds, sights, textures, smells, tastes, moving my body...

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Question 3: What activities seem incompatible (even with probable efficiencies) with the 1.5°C targets?

Most common answers:

A. Medium-long distance trips

B. Gas consumption

C. Certain leisure activities

D. Consumption of new items

E. Red meat consumption

- **Buying new and expensive stuff, from medicine to a car to a house.** When we upcycle or reuse old stuff, there is no carbon amortization to count for our carbon bill.

- **Gas consumption and sport/leisure activities.** The former is impossible to manage especially if you live in a building with a centralized heating system and the bill of gas consumption is included in your rent. The latter is very high and it sounds strange that having an addiction to sports activities would impact me so badly my tracking.

- **Transportation** – although the public transport network in my small city is excellent, it is very difficult (and expensive) to go to nearby cities due to many factors. Moreover, riding the bike in my town is still an extreme sport; there are no bike lanes, it is very hilly, and in some parts, it is not even possible to have 1.5-meter distance between the bike and the cars driving by.

Question 4: Do you think we can achieve 2030 1.5oC targets while leading quality, dignifying, healthy lives and why?

Most participants expressed their positivity when asked about the possibility of achieving the 2030 1.5°C lifestyle targets with fair and good conditions. Yet, many reported their concern about a lack of public incentives, accessible services and a common willingness.

- Yes, a 1.5 lifestyle can definitely bring quality and dignity, if everyone had the same opportunities and access to lowcarbon activities and services. It would be possible if governments offered public services and implemented policies helping citizens achieve these targets.

- Yes, it is possible as long as we are aware that we need to support each other's efforts and that either directly or indirectly, we are also responsible for the lifestyles of those living with us.

- I do think it's possible to achieve 2030 1.5°C targets while living quality dignifying, healthy lives but this comes with an important caveat. Low carbon dietary and transport choices can lead to a better quality of life, but there are still few societal incentives to make these lifestyle changes, some of which are more accessible to wealthy people. In many cases the incentive is to consume more rather than less.

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Question 5: What are the challenges and opportunities you foresee to leading quality, dignifying, healthy lives with half (2040 1.5oC targets) and even a third (2050 1.5oC targets) of the 2030 1.5oC carbon budget?

The answers to this question were not unanimous but had a common theme: we, as citizens, cannot foresee a qualitative, dignifying life with 2050 targets without a shift in social norms and as well as shifts in policies and wider system changes. From individual food choices to local and national transport and energy provision, the 2040 and 2050 1.5°C targets are difficult to imagine at our current pace.

* Cutting the budget further will be more challenging as people are likely to make the changes that are easiest for them first. I think that reducing the carbon in our lifestyles even further will require more systems change.

* There would be as many opportunities (and even more) as the ones provided by the 2030 targets but double (at least!) the challenges. The entire system, next to our society's mindset, would need to change for everyone to be able to live a 2040 1.5 lifestyle. (...) Yes, we can individually make an extra effort, but without low carbon services and systems implementation, I don't think it will be possible to lead a quality and dignified life within the 2050 1.5 targets.

* We have to bear in mind that there will always be tradeoffs, and we need to balance those. **The main challenge:** Convenience. Or at least our perception of it and the factors that lead to decision-making: time, accessibility, perceived usefulness, price... and for some CO2 and water footprints, production and distribution conditions, etc. (...)
Opportunities? There are plenty – sharing our efforts with others makes them surprisingly easier to stick to. Moreover, it helps to find creative and original solutions that one may not have thought of before.

* I can't see how we'd move around in the ways we do now, or eat any meat or dairy — my current diet is varied and not wholly vegan. I certainly can't quite see how we will heat our homes.

5.4 OVERALL REACTION TO THE EXPERIMENT

Overall, what the first 3 weeks' stories reveal is the positive approach of participants to the experiment, and their willingness to modify some of their daily habits in order to stay within the targets Yet, this is not always possible: social norms are as important as infrastructural changes in facilitating positive change

> **"The biggest thing for me is finding it hard to limit myself when no one else around me is. There's a huge cultural component to this. If everyone is doing it, it's going to be psychologically very different from feeling like you're making sacrifices alone. That said, as I've written above, it certainly doesn't all feel like sacrifice. And the cultural shift is needed in that regard, too — the ways we occupy ourselves will have to change, and there is much happiness to be found in those changes."**

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The analysis of the stories written during the 4th week reveals a unanimous appreciation of the experiment, pointing out some of the low carbon activities that participants re-discovered and are willing to integrate in their daily life.

Most people have shown their appreciation for actions that help them slow down and make their life healthier, more fun and more conscious. Many of the participants work in the field of sustainable consumption and lifestyles and had already learned about and implemented some lower-carbon behaviors: nevertheless, living at the 1.5°C lifestyles levels during this experiment was thought provoking, demonstrating that practice of the lifestyle can reveal additional insights that cannot be explored through theoretical analysis alone.

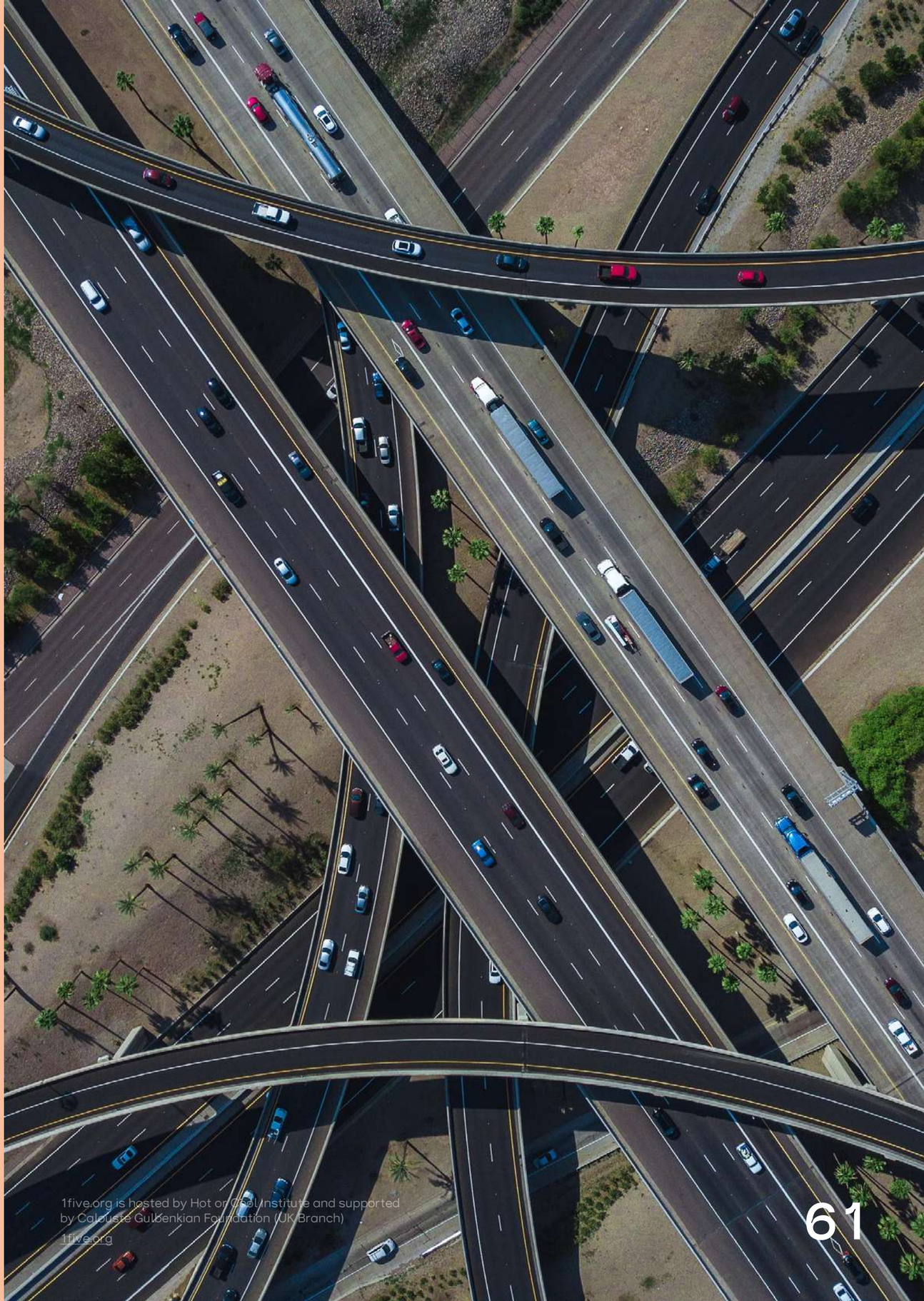
We have included some quotes to reflect participant´s conviction that 1.5°C living would be very challenging, or impossible, without a significant change in the systems we live in, nor now, nor in the future.

Yet, all participants expressed a positive attitude towards the achievement of the 1.5°C targets.

“This experiment was a very good opportunity for understanding a real problem that we usually neglect. Personally, I studied a lot in this field concerning emissions, carbon footprint, and all the things related to them. But I needed to participate in this project for understanding the impacts in my lifestyle.”

06

Tracked Lifestyle Data Analysis



6.1 DESCRIPTION OF DATA STRUCTURE AND CONTENT

Data was validated by checking the quality of each participant´s tracking spreadsheet and accessing it, if necessary, directly with the participant.

The data was then gathered into a single database where the analysis was performed. The overall numbers of the database are:

16 Participants with valid sheets, meaning with all three tracking types (daily actions, routine actions, amortized durable goods) correctly filled.

379 days tracked, with 11 of 16 participants successfully tracking all 28 days.

7.293 values tracked, resulting in an average of 19 footprint values per day.

Each participant was assigned a code that will be used throughout this section.

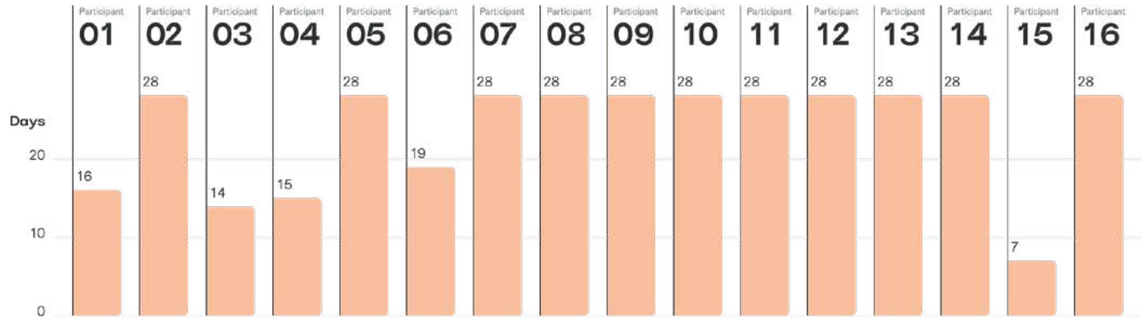
The reference table below lists each Participants Code together with their respective answers to the Characterization Survey. This information supported some of the performed studies and analysis.

Participant code	Country	Location	Already knowledgeable of 1.5°C targets	Will you keep Lifestyle after Pilot?	How Much changes to your lifestyle?	Bigger barrier to further emissions reductions?
01	Germany	(Not Shared)				
02	Germany	Urban Suburbs	1. Very Much	2. Stay close	1. None	2. My family
03	Canada	Urban Suburbs	1. Very Much	2. Stay close	1. None	4. Local "System"
04	Germany	City Center	1. Very Much	2. Stay close	2. Small	2. My family
05	USA	Urban Suburbs	1. Very Much	2. Stay close	2. Small	1. My will
06	UK	Rural Suburbs	2. Some notions	2. Stay close	2. Small	5. Global "System"
07	Germany	Rural far from big cities	1. Very Much	1. Same or Better	2. Small	4. Local "System"
08	UK	City Center	2. Some notions	2. Stay close	1. None	5. Global "System"
09	Portugal	Urban Suburbs	1. Very Much	2. Stay close	2. Small	4. Local "System"
10	UK	(Not Shared)				
11	UK	Rural Suburbs	1. Very Much	1. Same or Better	2. Small	4. Local "System"
12	Germany	City Center	2. Some notions	2. Stay close	1. None	4. Local "System"
13	Germany	City Center	1. Very Much	1. Same or Better	2. Small	1. My will
14	Portugal	Rural far from big cities	2. Some notions	1. Same or Better	2. Small	5. Global "System"
15	Nigeria	(Not Shared)				
16	Germany	City Center	2. Some notions	2. Stay close	2. Small	4. Local "System"

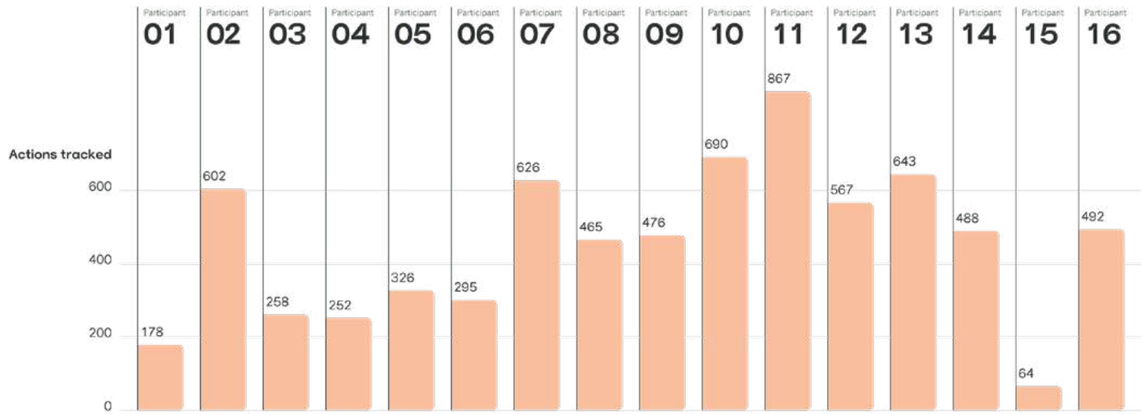
Most participants were able to track for the full duration of the experiment (11). Others (5) tracked for less, due to a variety of reasons, but provided sufficiently consistent data while they tracked to be leveraged for the analysis.

Below, we present a chart of the Total Number of Values (aka Actions) Tracked per Participant to show the large amount of data gathered. Since there wasn't a fixed number of tracked actions per day, it is clear from the chart on the right that the participant created many different tracking routines.

TOTAL NUMBER OF DAYS TRACKED PER PARTICIPANT



TOTAL NUMBER OF VALUES TRACKED PER PARTICIPANT



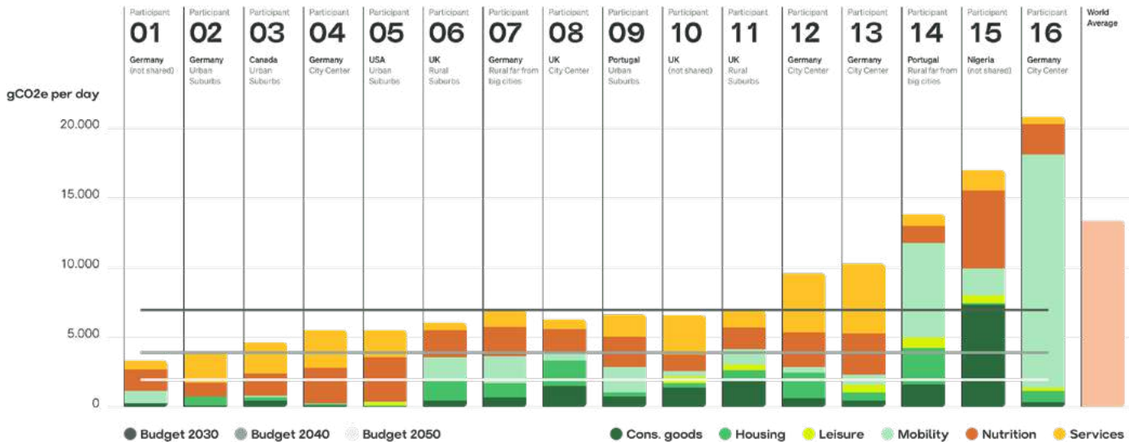
6.2 PARTICIPANTS´ GLOBAL RESULTS AND "LIFESTYLE RECIPES"

According to the tracking of this real-world pilot project, 69% of the participants (11 out of 16) were able to live within the emissions daily budget of the 2030 - 1.5°C target.

The chart below shows the participant results (average 5.591 gCO2e/day) and its comparison with the 2030 (6.845 gCO2e/day), 2040 (3.836 gCO2e/day) and 2050 (1.918 gCO2e/day) – 1.5°C targets as well as compared to a current average 'human' footprint.

This chart also disaggregates the individual impact per each one of the six actions Categories.

This enables us to see the variation in "lifestyle recipes" of individuals: even for those who stayed within the budget, there is a diverse range of ways to "spend" the emissions between the categories of consumer goods, housing, leisure, nutrition and services.



Although this data seems to show that some actions are not compatible with a 1.5°C lifestyles budget, it is interesting to note that there are many different "recipes" to live a low emission lifestyle. At least for the 2030 target, there seems to be room for different approaches and freedom to choose.

To explore these variations further, we tried to identify archetypes of the lifestyle "recipes" of those participants that stayed within the 2030 1.5°C budget. The analysis below shows the variation in proportion of budget used for each category, revealing the following:

* Footprint from consumer goods and mobility were almost nonexistent for lower emissions participants.
* Services (mainly energy supply) had a large impact but was accommodated into low emission lifestyles.

There is a limit to how much the participants were able to lower nutritional emissions within current systems, but the variation between participants shows that there is some meaningful choice as well as possibilities to further reduce the impacts via our food choices.

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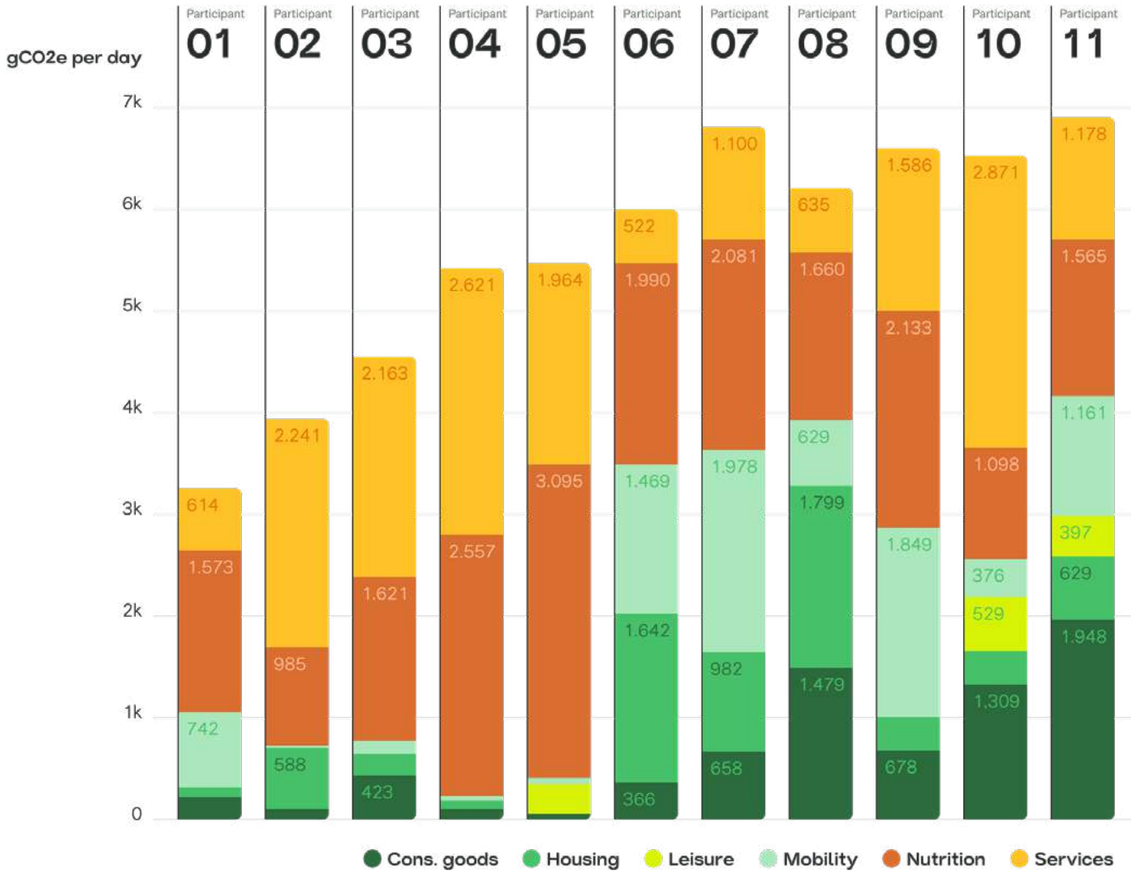
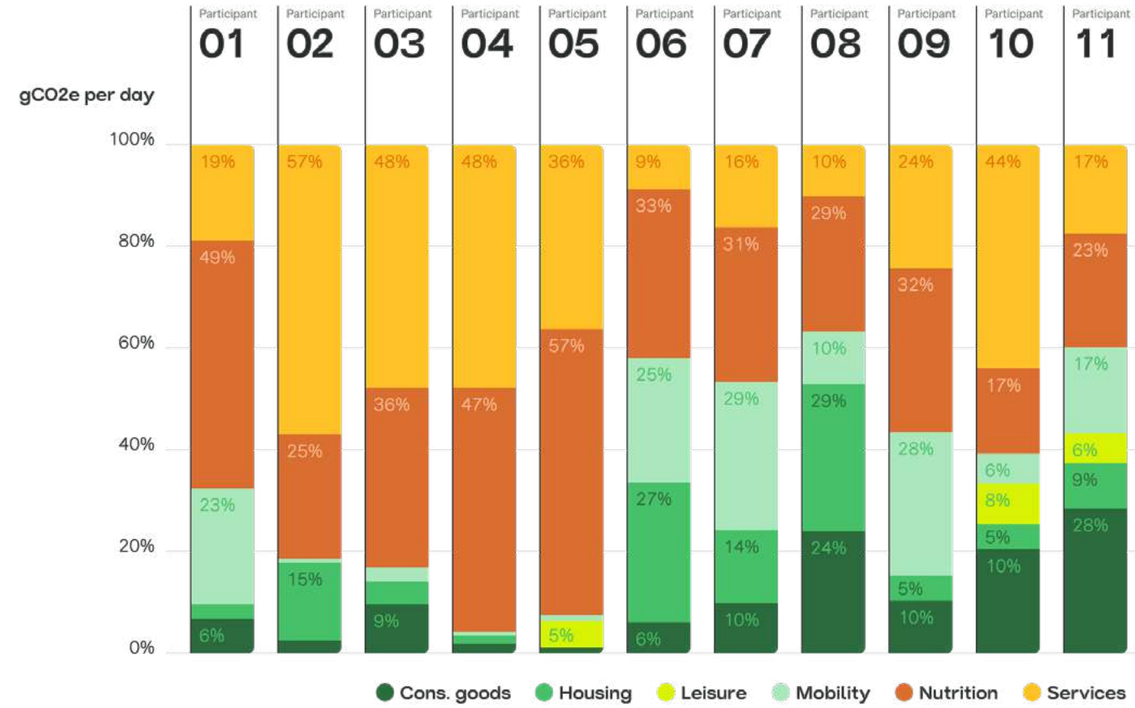
DIVERSITY OF LIFESTYLE PER PARTICIPANT - gCO2e



DIVERSITY OF LIFESTYLE PER PARTICIPANT - RELATIVE



Analysis of "successful" 1.5°C Lifestyle profiles

Acknowledging the diversity of strategies and individual profiles that comply with 1.5°C Lifestyle, there is still value in evaluating tendencies that arise from the tracked data in order to consider whether there are common traits among participants that were successful in living within the 1.5°C lifestyle budget.

The result of this evaluation is the archetype described by the charts below. It is defined in terms of Tracking Type and Action Categories and results from the averaged impact of all actions of the 11 participants that complied with the 2030 1.5°C budget. This average profile corresponds to a daily emissions budget of 5.591 gCO2e/day.

AVERAGE PROFILE OF THE 1.5°C LIFESTYLE PER CATEGORY

28 %
Services - 1.590

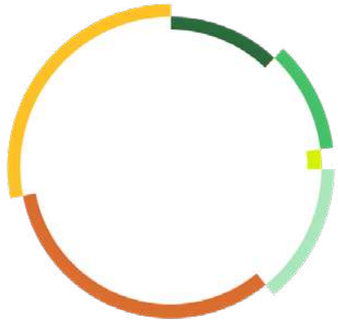
2%
Leisure - 109

12 %
Cons. gods - 664

14 %
Mobility - 14

11 %
Housing - 612

33%
Nutrition - 1.851



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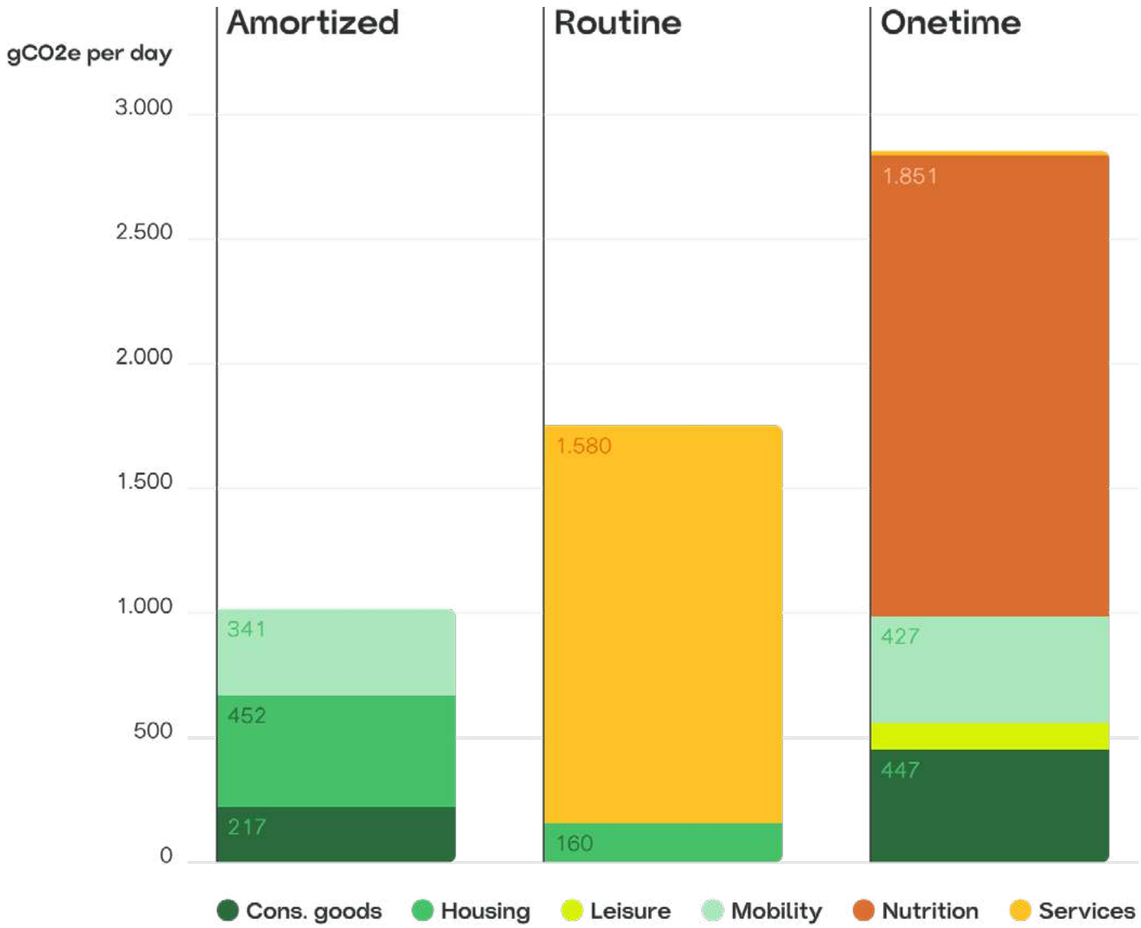
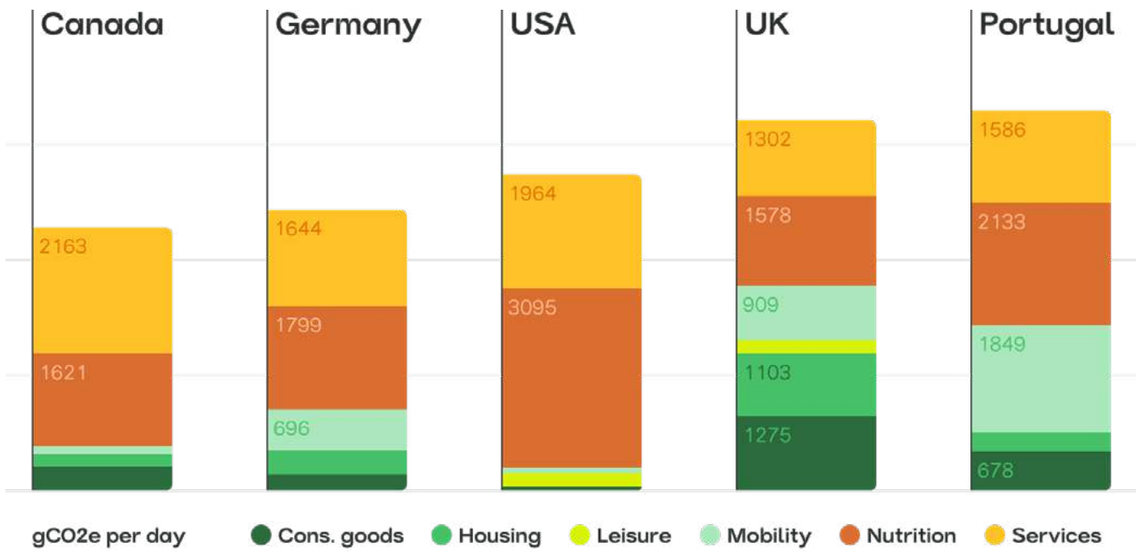
AVERAGE PROFILE OF THE 1.5°C LIFESTYLE PER TRAKING TYPE



Although the country specific footprints were quite limited in our database and in this pilot project, we found it interesting to compare country-specific "successful 1.5°C lifestyle profiles". The corresponding analysis in the chart below on the left suggests that:

- Nutrition and services (such as energy) took a significant weight in all the profiles and make more than half of the weight of the average profile.
- There was quite a lot of variability regarding mobility and consumer goods, but they tended to be a minor source of emissions in all the successful profiles.
- Living in smaller or older accommodation seems to be an important factor in enabling participants stay within the budget.

PROFILE BY COUNTRY - PARTICIPANTS WITH 1.5°C LIFESTYLE



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We should note however that with just 1 to 4 participants per country, the sample is much too small to get to solid conclusions.

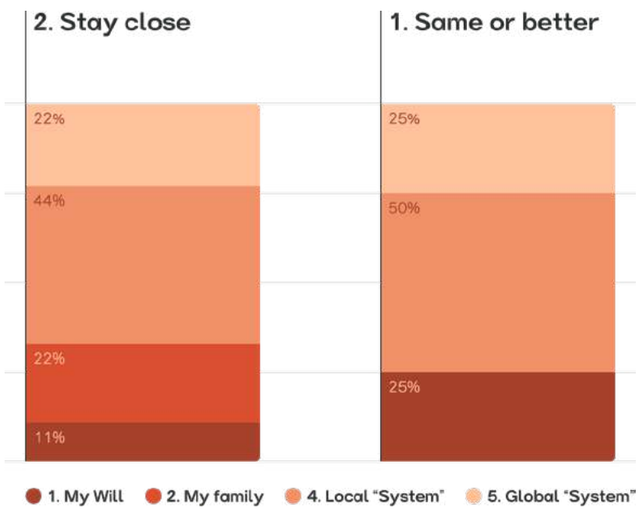
6.3 SCENARIOS FOR FURTHER EMISSIONS REDUCTIONS

One of the key characteristics of this pilot project approach was to track existing and real world lifestyles, not special or controlled experiments.

To test the validity of this approach we asked the participants how likely they were to keep the same level of emissions budget after the pilot ended. The response was impressive, with all the participants that answered (13 of the 16) confirming that they will be near to, or even better than the emissions level achieved during the pilot.

When evaluating possible barriers to reducing their emissions further, 75% of the participants consider systemic barriers (local or global) to be the biggest challenge.

This suggests that participants felt they had made as many changes as were possible at this time – an assumption that could be tested during future developments of this experiment.



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To learn also from the participants that were not able to comply with the budget, we selected two participants (number 13 and 14) with almost the same level of emission but different daily habits. The charts below seem to imply that:

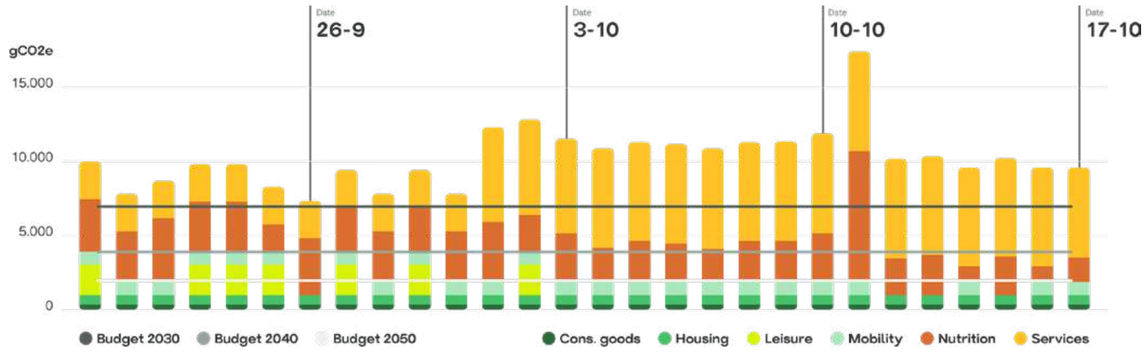
Participant 13 had a stable emissions profile without even a single of the pilot 28 days below the Budget.

Participant 14 was mostly below budget but tracked 5 days with huge Mobility, Housing or Purchases.

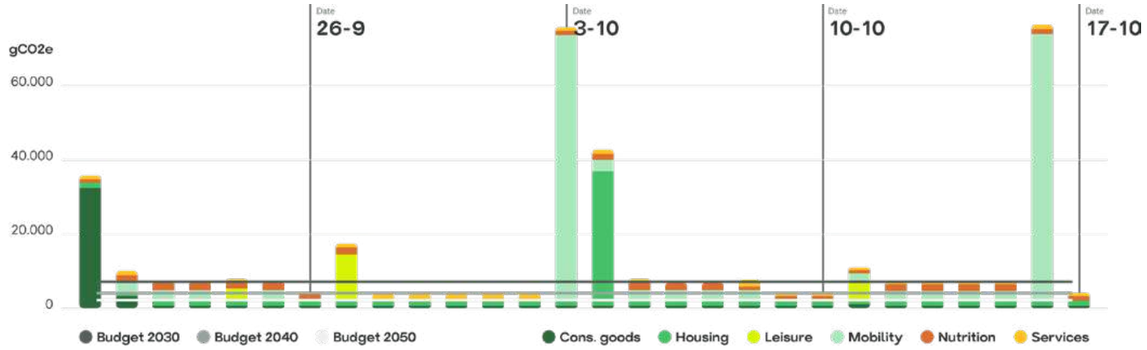
This suggests that some participants may have unsustainable fixed routines, while others may be highly impacted by quite infrequent events.

This is a useful insight, highlighting the importance of being aware of both when designing policies and interventions for sustainable lifestyles.

ACTIONS PER DAY - PARTICIPANT 13



ACTIONS PER DAY - PARTICIPANT 14



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07

Conclusion

The 1five.org pilot project has provided a deeper understanding of the possibilities for developing a full version of the 1five.org project, including the need for a user-friendly tracking tool, the importance of locally specific data, the value of personal connection for supporting participants through the technical aspects of the experiment, and the creativity unleashed by sharing challenges and breakthroughs.

From this pilot, we derived the following important hypotheses to work on going forward:

Hypothesis 1: Most participants are able to live within the 2030 - 1.5°C budget, using various "lifestyle recipes"

Hypothesis 2: For many, 1.5°C lifestyles require some learning and adaptation, but can be enjoyable and result in healthier ways of living

Hypothesis 3: Systemic barriers are the biggest perceived challenge for long lasting emissions reduction by individuals.

With a full roll-out of the project, we hope to produce extremely relevant quantitative and qualitative data that can greatly contribute to the realization of 1.5°C degree lifestyles, through collaboration with researchers, civil society organizations, policy makers and other stakeholders.

In conclusion

The pilot successfully demonstrated that it's possible to engage people from various countries in tracking their emissions, and start to build a community of people dedicated to exploring what living 1.5°C compatible lifestyles means in real life.

The stories, photos, questions, and discussions shared by participants have brought the emissions targets to life – and taken this from an abstract, scientific concept to a small but enthusiastic network of people and organizations committed to making equitable, low-carbon living possible and desirable.

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08

Annex

RELATIVE IMPACT PER TYPE, CATEGORY AND SUB-CATEGORY FOR ALL PARTICIPANTS

Action time per participant	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	Total
3. Onetime	**72,3%**	**30,5%**	**41,7%**	**4,8%**	**63,0%**	**39,7%**	**42,8%**	**55,2%**	**65,1%**	**45,4%**	**56,1%**	**33,1%**	**41,4%**	**82,1%**	**93,9%**	**93,0%%**	**61,9%**
Mobility	22,9%	0,4%	2,5%	0,9%	1,2%	4,7%	5,7%	10,1%	28,1%	5,8%	2,7%	5,1%	7,7%	49,3%	11,7%	80,3%	26,3%
Personal vehicle	21,6%	0,4%		0,3%	1,2%		5,7%		15,2%	4,6%	0,6%			49,3%	3,2%	80,2%	23,0%
Mass transit	1,3%		2,5%	0,6%		4,7%		10,1%	12,9%	0,3%		5,1%	7,7%			0,1%	2,8%
Public transport										0,8%					8,5%		0,4%
Transport equipment											2,1%						0,1%
Nutrition	48,6%	25%	35,7%	47,3%	56,8%	33,2%	30,6%	26,8%	32,4%	16,8%	22,8%	25,7%	28,8%	9,3%	32,9%	10,5%	24,4%
Meal	32,7%	15,8%	21,7%	42,5%	45,5%	25,0%	22,4%	10,1%	22,6%	10,1%	18,2%	13,8%	25,4%	6,2%	25,1%	6,9%	17,2%
Drink	15,7%	9,2%	6,4%	0,9%	4,5%	3,9%	4,8%	10,5%	1,2%	3,5%	1,0%	5,6%	1,7%	2,2%	7,8%	2,0%	3,9%
Snack	0,2%		7,5%	3,8%	6,8%	4,3%	3,4%	6,2%	8,5%	3,2%	3,6%	6,3%	1,7%	0,9%		1,7%	3,3%
Cons. goods	0,8%	2,3%	3,5%			1,8%	6,4%	18,3%	4,6%	14,7%	24,9%	2,3%		9,2%	43,3%	1,1%	7,4%
Leisure					5,0%					8,1%	5,8%		4,9%	5,2%	2,8%	1,0%	2,5%
Housing														9,1%			1,1%
Services		2,8%													3,2%		0,2%
2. Routine	**19%**	**54,2%**	**47,6%**	**48,5%**	**36,0%**	**8,7%**	**16,2%**	**38,6%**	**24,1%**	**44,0%**	**17,1%**	**44,1%**	**48,5%**	**5,8%**	**5,5%**	**2,6%**	**24,2%**
Services	19%	54,1%	47,6%	48,5%	36,0%	8,7%	16,2%	10,2%	24,1%	44,0%	17,1%	44,1%	48,5%	5,8%	5,5%	2,6%	22,7%
Energy	19%	28,7%	1,2%	9,0%	32,1%	8,7%	15,5%		24,1%	12,4%	6,8%	42,8%	45,5%	3,3%	4,2%	2,0%	15,7%
Finance		25,5%	29,1%	30,3%						18,6%	7,4%				0,6%		3,8%
Digital			17,3%	8,9%	3,9%		0,7%	10,2%		12,7%	2,9%	1,3%	1,5%	2,5%	0,8%	0,6%	3,0%
Leisure													1,5%				0,1%
Water		0,0%		0,3%						0,3%							0,0%
Housing								28,4%									1,6%
Cons. goods		0,1%															0,0%
1. Amortized	**8,7%**	**15,2%**	**10,7%**	**3,4%**	**1,0%**	**51,6%**	**41,1%**	**6,2%**	**10,7%**	**10,6%**	**26,8%**	**22,8%**	**10,0%**	**12,2%**	**0,6%**	**4,5%**	**13,8%**
Housing	3,1%	14,9%	4,8%	1,7%	0,1%	27,4%	14,4%	0,6%	5,1%	5,3%	9,1%	18,5%	6,1%	9,6%	0,6%	4,0%	7,9%
House		10,9%				0,6%	7,1%					16,1%	4,3%	9,4%	0,6%	3,1%	4,3%
Appliances	2,2%	2,4%	2,8%	0,4%	0,1%	1,7%	1,8%	0,6%	3,1%	3,4%	8,9%	2,4%	0,6%	0,1%		0,6%	1,7%
Furniture	0,8%	1,7%	1,9%	1,3%		2,5%	5,5%		2,0%	1,9%	0,2%		1,1%			0,3%	1,0%
Home renovation						22,6%					0,0%						0,8%
Home repair														0,1%			0,0%
Mobility			0,1%			19,8%	23,4%				14,2%						0,3%
Vehichles							23,4%				0,5%						1,5%
EV Car						19,8%					8,4%						1,2%
Repair			0,1%								5,2%						0,3%
Cons. goods	5,7%	0,3%	5,9%	1,6%	0,8%	4,4%	3,3%	5,6%	5,7%	5,3%	3,4%	4,3%	3,9%	2,5%	0,0%	0,5%	3,0%
Electronics	5,7%	0,3%	1,7%	0,7%	0,5%	2,8%	0,4%	1,2%	5,7%	0,2%	0,1%	3,4%	2,2%	1,8%		0,1%	1,5%
Clothes			4,2%	0,9%		1,4%	2,8%	4,4%		5,2%	0,9%		1,5%			0,3%	1,1%
Durable good						0,1%					2,4%			0,2%			0,2%
IT Products		0,0%										0,7%	0,3%	0,4%	0,0%		0,1%
Sport					0,3%		0,1%					0,3%		0,0%			0,1%
Appliances														0,0%		0,0%	0,0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

AVERAGE DAILY IMPACT PER TYPE, CATEGORY AND SUB-CATEGORY FOR ALL PARTICIPANTS

Action time per participant	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
3. Onetime	**2.339**	**1.202**	**1.893**	**2.605**	**3.433**	**2.379**	**2.907**	**3.421**	**4.285**	**2.964**	**3.857**	**3.139**	**4.213**	**11.235**	**15.873**	**19.266**
Nutrition	1.573	1.985	1.621	2.557	3.095	1.990	2.081	1.660	2.133	1.098	1.565	2.442	2.926	1.269	5.568	2.185
Meal	1.058	622	986	2.300	2.480	1.497	1.525	625	1.490	661	1.251	1.311	2.581	846	4.248	1.420
Drink	509	362	293	50	247	235	328	649	82	229	68	535	177	298	1.320	415
Snack	6		232	207	368	258	229	386	561	207	246	596	168	125		350
Mobility	742	17	115	48	64	284	390	629	1.849	376	183	482	787	6.743	1.976	16.649
Personal vehicle	700	17		16	64		390		1.000	301	39			6.743	540	16.627
Mass transit	42		115	32		284		629	849	21		482	787			22
Public transport										54					1.436	
Transport equipment											144					
Cons. goods	25	89	157			105	436	1.132	304	961	1.712	214	1.260	1.260	7.327	218
Fuel															4.500	
Consumer goods purchases		21								595	1.513				1.409	
Personal care	25	7	157				359		129					1.162	1.175	
Leisure						105	71	1.071	71		98					
Home products		61					6	61	104		71				243	
Various activities										366	29			98		
Clothes												214				143
Tobacco																75
Leisure			173		273					529	397		500	713	470	214
Housing														1.250		
Services		111													533	
2. Routine	**614**	**2.134**	**2.163**	**2.621**	**1.964**	**522**	**1.100**	**2.395**	**1.586**	**2.871**	**1.178**	**4.188**	**4.934**	**787**	**936**	**533**
Services	614	1.130	2.163	2.621	1.964	522	1.100	635	1.586	2.871	1.178	4.188	4.934	787	936	533
Energy	614	1.128	55	484	1.750	522	1.051		1.586	808	470	4.060	4.627	451	708	406
Finance		1.002	1.322	1.639						1.215	508				99	
Digital			786	480	214		49	635		830	200	128	151	336	129	127
Leisure													156			
Water				18						18						
Housing								1.760								
Cons. goods		4														
1. Amortized	**283**	**598**	**486**	**182**	**53**	**3.088**	**2.792**	**386**	**707**	**691**	**1.843**	**2.164**	**1.017**	**1.663**	**95**	**926**
Housing	99	588	216	94	7	1.642	982	39	333	343	629	1.752	618	1.315	95	828
House		427				35	485					1.527	439	1.293	95	629
Appliances	72	96	128	23	7	102	120	39	202	222	611	225	66	7		130
Home renovation						1.354					1					
Furniture	27	65	88	71		151	377		131	121	16		113			59
Home repair														15		
Mobility			4			1.185	1.588				978					
EV Car						1.185					581					
Vehicles							1.588				36					
Repair			4								361					
Cons. goods	184	10	266	88	46	261	222	347	374	348	236	412	399	348	0	98
Electronics	184	10	75	37	28	169	27	75	374	11	6	321	219	251		27
Clothes			191	51		86	187	272		337	65		149			64
Durable good						6					165			31		
IT products		0										62	31	61	0	
Sport							8					29		2		
Appliances														3		7
Total	**3.236**	**3.934**	**4.543**	**5.407**	**5.450**	**5.989**	**6.799**	**6.202**	**6.578**	**6.526**	**6.878**	**9.490**	**10.164**	**13.684**	**16.904**	**20.725**

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