



*FUTERRA **BEworks**

The Low Carbon Lifestyles Wheel

Behaviors, Barriers and Benefits

supported by  World Business Council for Sustainable Development

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Executive Summary

Futerra and BEworks as authors, with the support of WBCSD, have built our **Action Wheel** of low carbon behaviors, synthesized from the [Intergovernmental Panel on Climate Change \(IPCC\) report](#).

We offer pathway behaviors to the IPCC Household Consumption Options to Reduce GHG Emissions. To note: each behavior is designed for high emissions households, more likely to be found in the Global North.

This report also challenges the concept of a **value-action gap**. Instead, we propose a set of barriers, some practical and other perceptions, that need to be removed so publics can take the action they have repeatedly said they would like to.

Additionally, we propose a set of new **functional, social and emotional benefits** that will help to close the gap and spark personal behavior change on climate. We consider these benefits to be crucial for the future of sustainable progress, as they are set in opposition to sacrifice-centric narratives around climate action.

This report is designed to help business leaders, policy makers and solutionists identify the behaviors they can positively influence. Brands and businesses can use these resources to design new products/ services and behavior change campaigns that align with sustainability targets. Policy-makers can uncover existing barriers to overcome, even when access and affordability have been accounted for. Start-ups and innovators can identify new areas of opportunity to tackle stubborn challenges. You can even use this report to take immediate action in your own life. Personal action can make a difference, and this report seeks to scale that impact.

Does Personal Action for Climate Matter?

The concept of personal carbon footprints, and sustainable lifestyles overall, aren't without controversy. But as part of wider infrastructure and policy change, behavior change does have an important role in meeting global net zero.

The overall conclusion from the 2022 Intergovernmental Panel on Climate Change (IPCC) report is that our situation is dire – humanity is NOT on track to meet our climate commitments. We urgently need to cut emissions quickly and sharply to create a safer, sustainable world. Halving global greenhouse gas emissions by 2030 is our best path to do this.

By 2050, the world's population may reach 10 billion and with more people comes more demand for food, fashion, travel, housing and related aspirations. In a world stretched thin for resources and under the threat of global biodiversity loss and climate change, our lifestyles are putting the planet at risk. We need targeted action.

If we can reduce our demand for high-carbon infrastructure, development, systems, and products – it could save significant and even transformational amounts of carbon. The IPCC estimates that public/consumer action could quickly save 5% of 'demand side' carbon. Public action, business innovation, and policy change should become a virtuous circle towards our low carbon future.



With policy support, socio-cultural options and behavioral change can reduce global GHG emissions of end-use sectors by at least 5% rapidly.

Which Actions Make A Difference?

The 60 personal action areas the IPCC reviewed carry different scales of impact. Some (such as flying less, eating differently, and choosing home renewables) have a significant impact. Others (like recycling) might carry other environmental benefits but offer only marginal carbon savings.

The IPCC report is also very clear about who should be making these choices: 'Individuals with high socio-economic status contribute disproportionately to emissions and have the highest potential for emissions reductions'. And the report calls upon those in the top 10% of household emissions to make the most significant changes, the vast majority of those households being in the Global North and G7 countries.

If large numbers of households with high emissions take up these behaviors, it will save significant carbon directly. It will also have ramifications throughout society and policy, sending a strong signal of how people want to live today.



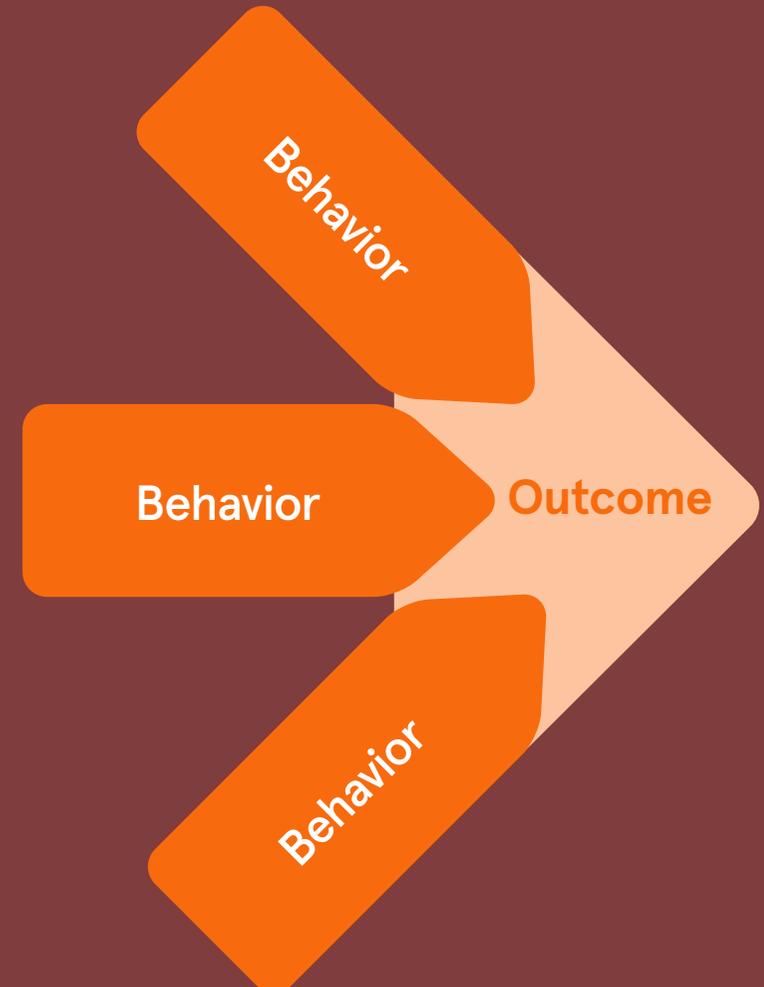
From Outcomes to Pathway Actions

With thanks to Project Drawdown, we have focused our attention on 33 of the 60 Household Consumption Options to Reduce GHG Emissions reviewed by the IPCC: the ones carrying the greatest carbon savings.

But even this shorter IPCC list aren't 'behaviors'; they are huge outcomes that can be measured for their impact on climate change. The pathway to achieving these outcomes consists of a number of decisions and actions that an individual has to make. This is what interests us and what forms the starting point for our Action Wheel.

The challenge is that the 60 IPCC mitigation options are not in fact behaviors, they're outcomes of behaviors.

Consider a mitigation option such as "food waste reduction" - there are a wide-ranging set of actions one might take to achieve that end result, everything from making meal plans to buying smaller portions, to lowering the fridge temperature or freezing leftovers. Focusing on the outcome can make it difficult to know where to start or lead to generic interventions with no specific call-to-action. We have to help people know what to do (i.e. behaviors) and how to do it, not just what they need to achieve (i.e. outcomes)



These mitigation outcomes are often the product of a suite of different antecedent or pathway behaviors. It is much more difficult to create real change without a thorough understanding of the specific behavior we want to drive, as the practical and psychological barriers can differ dramatically depending on the behavior and the context it is in. Consider all the frictions that can arise when trying to buy smaller portions of food at the grocery store (e.g. default packaging sizes, always stocking the kitchen full of food to maintain one's identity as a good provider) and how different those frictions are from trying to freeze your leftovers (e.g. perceived time and energy constraints, anticipated disgust). Both actions may lead to the same outcome (reduced food waste) but face very different challenges in getting there.

Identifying specific and actionable antecedent or pathway behaviors will be crucial for pinpointing barriers and identifying effective interventions to overcome them, ultimately leading to the desired mitigation outcome.

The Action Wheel in this report sets out these pathways that will reach those measurable and impactful outcomes. These actually are behaviors, designed for high emissions households in the Global North with the largest emissions.

There are many additional pathway behaviors than those set out in our Action Wheel, and we could produce specific Action Wheels for different cultures, demographics and incomes. The pathway behaviors we've offered are illustrative thought starters.



We have to help people know what to do (i.e. behaviors) and how to do it, not just what they need to achieve (i.e. outcomes)

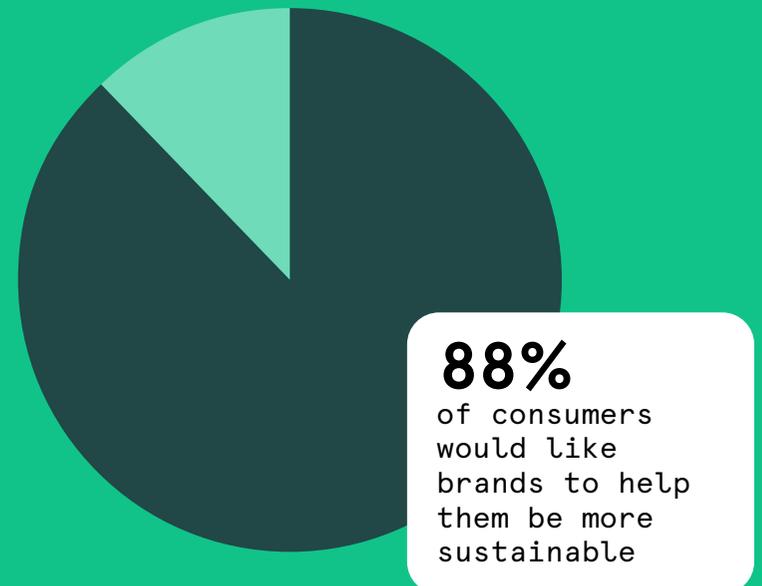
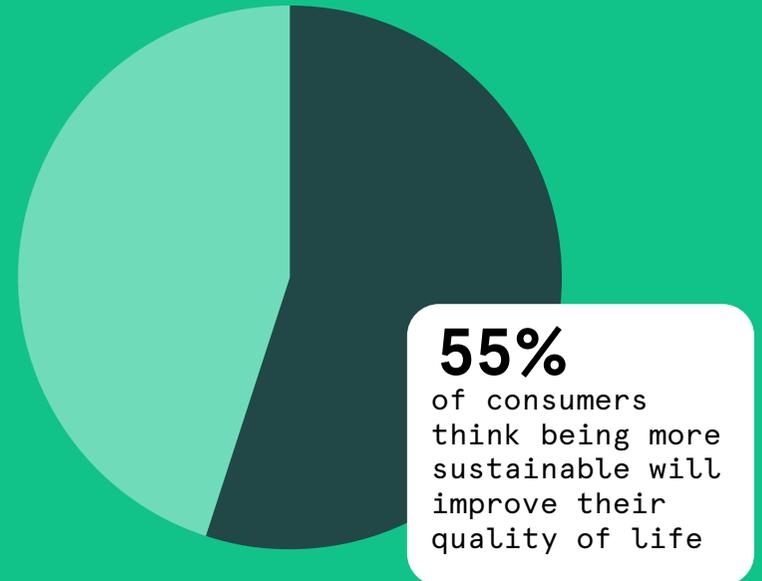
Will Anyone Do These Actions?

The public tells us that making lifestyle changes will make their lives better, not worse. [55% of US and UK consumers surveyed by Futerra think that making lifestyle changes for climate change will improve their quality of life.](#)

People also want brands' help in making these lifestyle changes. [Futerra research also reveals that 88% of consumers would like brands to help them lead sustainable lifestyle.](#)

So why aren't we all already living low carbon lifestyles? Much has been said about the value-action gap, where consumers say they care about sustainability/climate in surveys, but then fail to follow through in their purchases and behaviors.

The concept of a 'gap' in consumers' morality has long bothered us. Infrastructure barriers, availability, price and the influence of marketing are the true cause of any gap. These barriers, both practical and psychological, are the real reasons that peoples' good intentions are thwarted in practice. This report investigates these barriers and recommends benefits that can help overcome them.



Can We Measure Behavior Change?

It is our firm belief that behavior change campaigns should be designed based on evidence-based tactics and interventions. We also acknowledge that there are several risks in behavior change, such as rebound effects, that must be factored in and appropriately accounted for in any campaign.

We recognise that proving causation in behavior is not straightforward, and any claims need to be based on a validated system for measuring behavioral impact.

WBCSD is undertaking important work on [Avoided Emissions](#) - emissions savings that occur outside a company's value chain. While some behaviors in our Wheel fall into direct and indirect emissions, others may be classed as avoided emissions. The frameworks and measurement protocols for behavioral change are maturing and we welcome further rigor to come.



Bias Statement

This work is built out from the IPCC, AR6 Working Group 3 report from April 2022. The Intergovernmental Panel on Climate Change represents the interests and experience of the global community. Scientists from 195 countries participate and their conclusions are reflective of that global perspective.

Futerra and BEworks do not have the same truly global representation within our teams. Therefore we acknowledge our analysis is

from a very limited cultural/geographical perspective and a small scope of lived experience. All authors of this report attended secondary education, not all have English as a first language, all would be considered 'higher income' and 'high emissions' within their own country. Some are scientists and others hold post-graduate qualifications in sustainability.

Please be aware of the non-universality and potential cultural bias of our conclusions.

How To Use This Report

This report is for anyone interested or active in enabling low carbon lifestyles. We hope to be of particular use to:



Entrepreneurs and NPD teams:

Create innovations, new products, services and solutions from these pathways, taking care to avoid the barriers and offer benefits to your consumers.



Branding and Marketers:

Reframe the value-action gap as a barrier, and use your marketing excellence to discover benefits for your consumers in climate action, sustainable products and experiences.



C-suite:

Stay ahead of the regulation and consumer expectation curve by green-lighting new sustainable products, services and innovations.



Investors:

Spot promising returns and spur innovation through strategic investments and portfolio and product design that goes beyond negative screening.



Campaigners:

Target areas where impactful change is possible, leveraging the benefits of low-carbon living while actively addressing barriers to adoption.



Storytellers and Creators:

Use this report as a springboard of inspiration to discover new ways to tell impactful stories around sustainability or weave positive behaviors seamlessly into your narratives.



Educators:

Craft lesson plans that immerse students in the principles of sustainable living. Encourage hands-on learning by involving students in the design of innovative solutions to real-world sustainability challenges.



Policy Makers:

Identify high-impact opportunities for large-scale, socio-cultural change, tailoring interventions to meet the needs of communities and overcoming mass barriers to sustainable living.

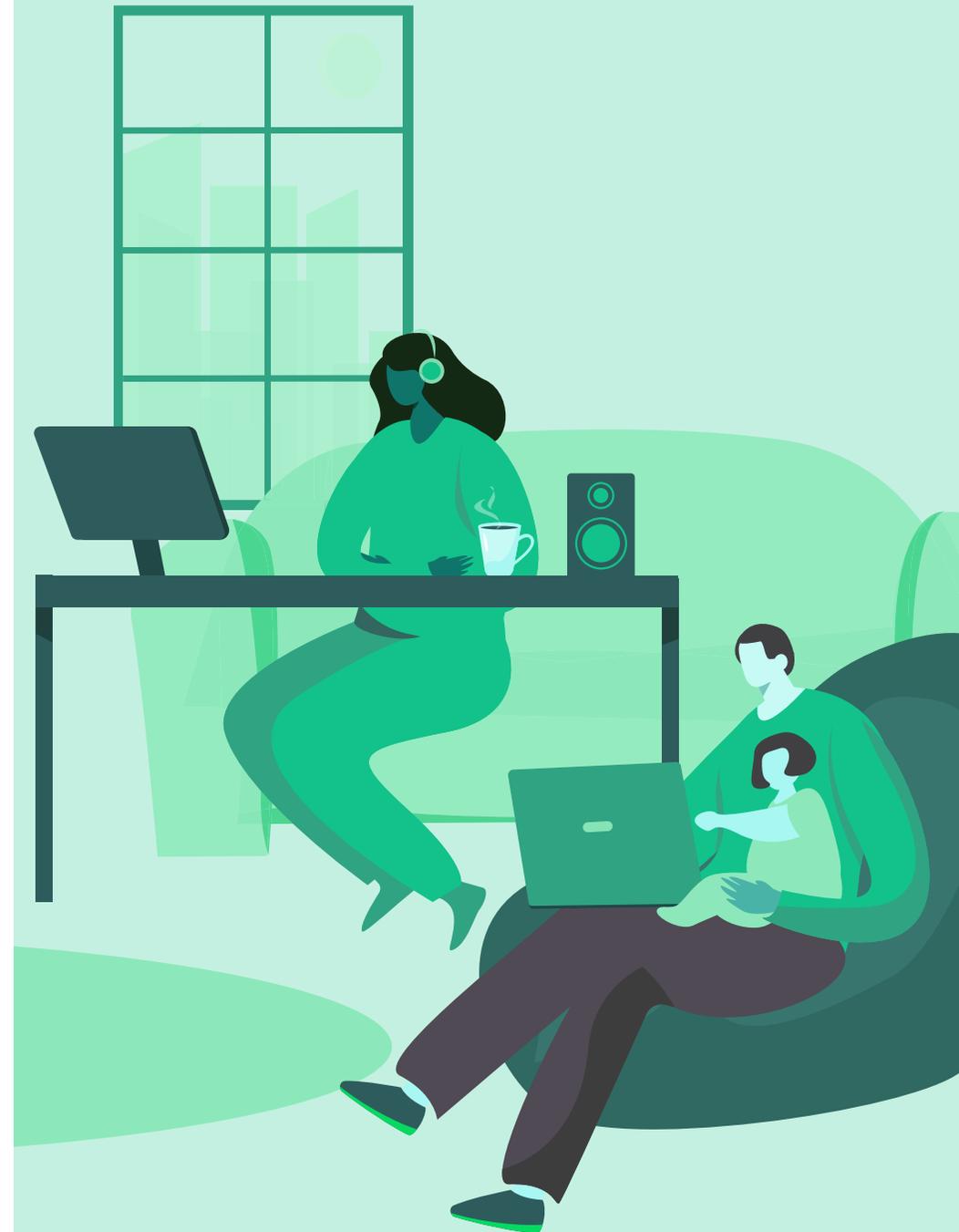
TRANSPORTATION

- Live car-free**
 - Take public transportation
 - Sell current vehicle
 - Walk/cycle short distances
- Shift to BEV**
 - Test drive a BEV
 - Purchase BEV
 - Locate plug-in charging stations
- One less flight (long)**
 - Attend virtual conferences + meetings
 - Vacation locally/regionally
 - Combine business and leisure trips
- Shift to public transport**
 - Take bus/train to work
 - Purchase monthly/annual transit pass
 - Use public transport for inter-city travel
- One less flight (med)**
 - Vacation locally/regionally
 - Attend one work conference virtually
 - Combine business and leisure trips
- Less car transport**
 - Take public transport to work
 - Walk/cycle short distances
 - Subscribe to a car-share service
- Shift to active transport**
 - Buy a bicycle/scooter
 - Walk/cycle short distances
 - Subscribe to bike sharing service
- Telecommuting**
 - Default business meetings to virtual
 - Create a home-office
 - Upgrade home internet
- Car-pooling/sharing**
 - Subscribe to a car-share service
 - Use UberPool
 - Book car-share in advance



HOUSING

- Renewable electricity**
 - Purchase roof-top solar panel
 - Install water turbine
 - Join communal wind turbine co-op
- Refurbishment and renovation**
 - Insulate hot water pipes
 - Upgrade/replace window seals
 - Install LED lightbulbs
- Heat pump**
 - Install a heat pump
 - Install low temperature heating systems
 - Install forced air systems w/high efficiency fan
- Renewable-based heating**
 - Purchase roof-top solar panel
 - Install a ground-source heat pump
 - Wrap water heater in blanket
- Less living space co-housing**
 - Downsize to smaller living space
 - Move into a cohousing community
 - Rent out extra rooms in house
- Better thermal insulation**
 - Insulate hot water pipes
 - Install triple glaze windows
 - Increase attic insulation (to R60)
- Lower room temperature**
 - Keep shades drawn in Summer
 - Turn down AC on hotdays
 - Install better insulated windows
- Fewer appliances**
 - Unplug unused appliances
 - Purchase multi-functional appliances
 - Sell infrequently used appliances



DIET

- Vegan diet**
 - Research vegan recipes
 - Cook meals using no animal products
 - Subscribe to vegan meal plan
- Improved cooking equipment**
 - Replace gas with induction stovetops
 - Choose smaller ovens/kettles
 - Cook with a pressure cooker
- Sustainable diet (unspecified)**
 - Purchase locally produced products
 - Cook meals using locally produced products
 - Buy seasonal fruits and vegetables
- Vegetarian diet**
 - Eat at vegetarian-friendly restaurants
 - Purchase plant-based proteins
 - Subscribe to vegetarian meal plan
- Shift to lower carbon meats**
 - Buy meat from local producers
 - Eat at farm-to-table restaurants
 - Hunt and fish legally
- Organic food**
 - Buy produce from local farmer's markets
 - Purchase seasonal CSA
 - Grow own vegetables
- Mediterranean and similar**
 - Research Mediterranean recipes
 - Eat at Mediterranean restaurants
 - Create weekly meal plan



DIET

**Regional/
local food**

- Buy from local farmer’s markets
- Purchase from a CSA
- Shop at stores with local food options

**Food waste
reduction**

- Take food inventory before shopping
- Store leftovers in air-tight containers
- Freeze portions of prepared food

**Nutrition
guidelines diet**

- Research your country’s nutrition guidelines
- Create a meal plan
- Cook meals following nutrition guidelines

**Less processed
food/ alcohol**

- Cook own food
- Bring food to work
- Find non-alcoholic beverage options

**Food waste
management**

- Use in-home or backyard composter
- Separate organic from inorganic waste
- Buy compostable bags for organic food



PURCHASES

Less packaging

- Buy re-fillable products
- Purchase products in bulk
- Opt-out of multiple shipments for online purchases

**Fewer purchases/
more durable items**

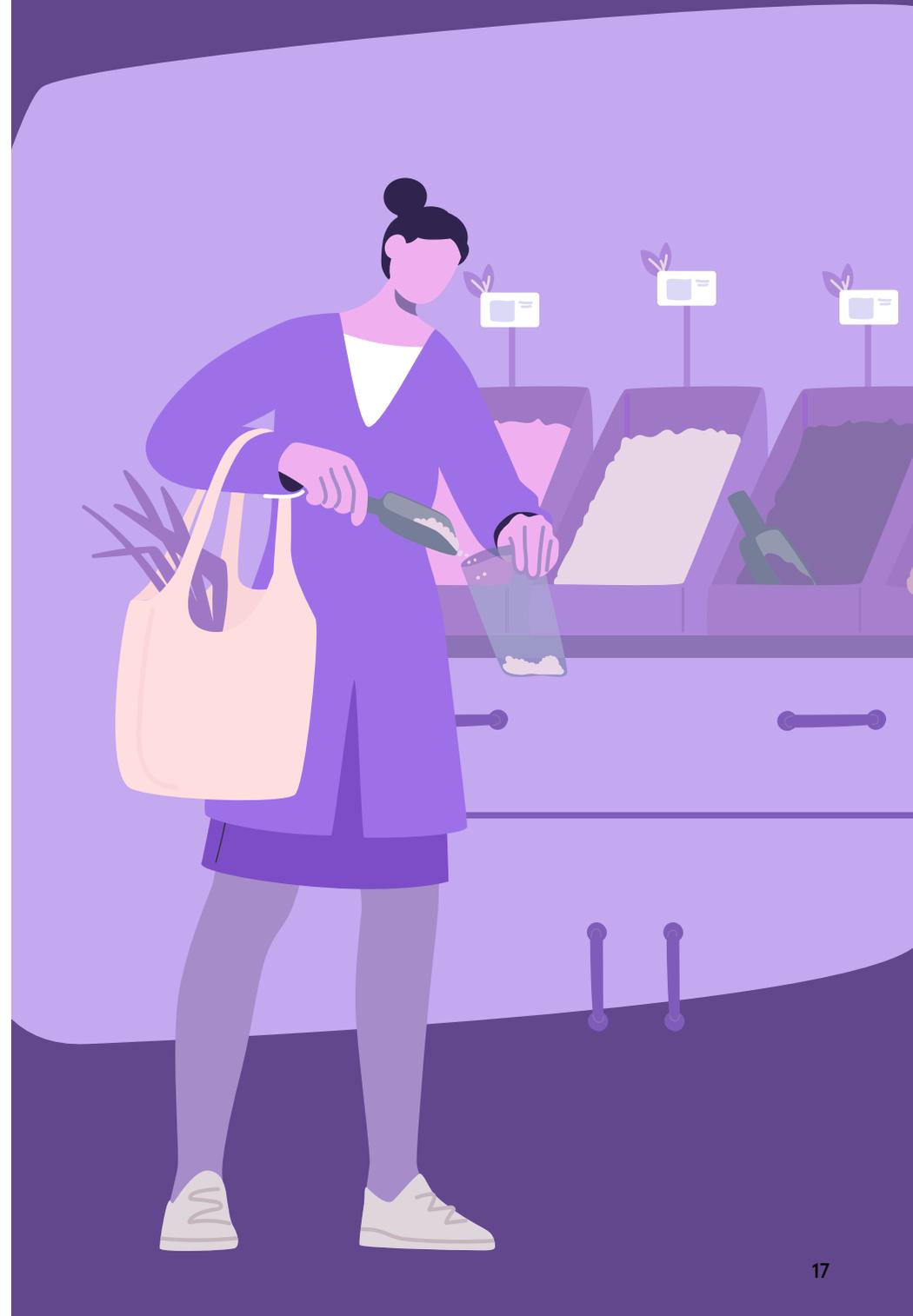
- Invest in higher quality, longer-lasting textiles
- Buy used items
- Repurpose old furniture

Less textiles

- Purchase used clothing
- Share clothing with friends
- Rent specialized outfits

Less paper

- Purchase digital-only media subscriptions
- Opt-in to paperless billing
- Use cloth instead of paper towel/napkins



Barriers To Action

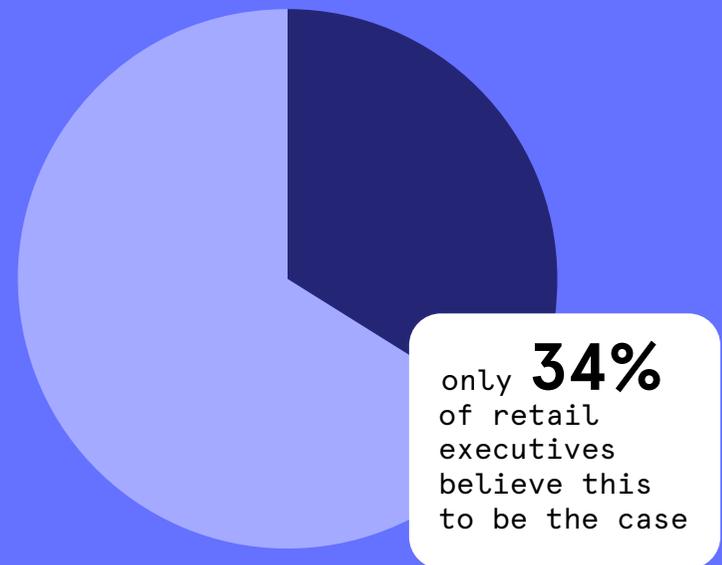
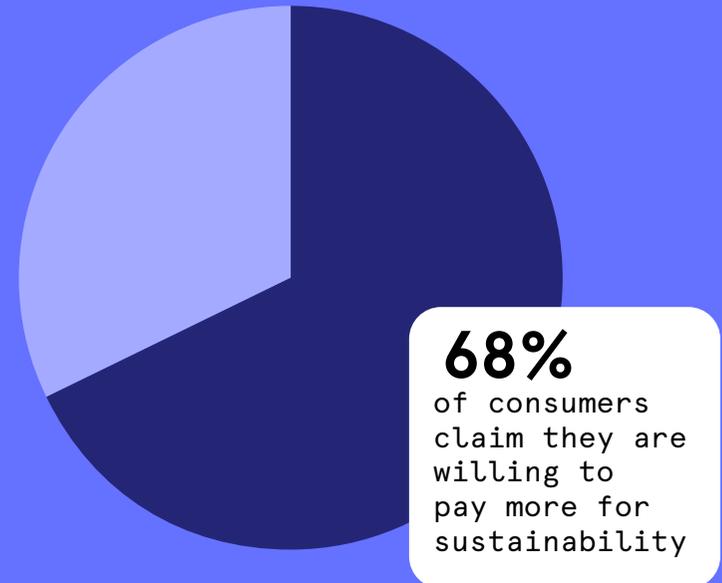
The value-action gap (say-do, or intention-action gap) has become a common complaint from environmental action advocates and brands alike.

The public say they care, say they'll take sustainable actions, even say they'll pay more for eco-friendly products...then they don't. The value-action gap is touted as a reason why sustainable lifestyles aren't possible, and it undermines the business case for sustainable products and initiatives.

[A Global Sustainability Study revealed that a whopping 50% of consumers rank sustainability](#) within their top five drivers for value, especially millennials who consider sustainability a crucial criterion for making purchases.

But there seems to be a misalignment between consumers and retail executives when it comes to the perspective of willingness to pay for sustainable products. [Surprisingly, while 68% of consumers claim they are willing to pay more for sustainability, only a striking 34% of retail executives believe this to be the case.](#)

We believe a perverse perspective has slipped into debate around the value-action gap. Namely, that somehow the gap lies in consumer morality, with the implication being that consumers pay lip-service to sustainability but in fact, they simply don't care.



This perception of a gap in consumers' morality is as false as it is insulting. In reality, all of us face huge practical and psychological barriers to fully acting upon our deeply held sustainability values.

Values



Action



The Morality Gap Myth

It would be much more appropriate to refer to a **value-action barrier** than to a gap – acknowledging the significant challenges that many people face in making low carbon choices.

Values



Action

The Values - Action **Barrier**

Busting The Barrier Bingo

The true list of functional and psychological barriers runs to many hundreds. For each behavior you are advocating, there are a set of barriers that need to be researched and understood that are unique to a population and location.

In Futerra and BEworks' joint work on overcoming barriers, there are 12 which occur with such frequency to be first tests.

We use these prompts almost like a bingo card, ticking off how many apply to specific behavioral asks our clients are seeking to make. We've never found a behavior that doesn't face at least one, and often many, of these barriers.

Some of these are infrastructural blocks that must be dismantled by businesses and policymakers, not by consumers. For example, if a green product is too expensive or simply not available, there is no communication or engagement that will spark consumers to buy it.

But many of the barriers to action are preconceptions, myths and positioning failures rather than structural barriers. This is especially true for the top 10% of household incomes who may be able to afford and access low carbon choices, but face emotional and social barriers to doing so.

In our experience, a key solution to those psychological barriers is benefits.

<p>Price Can I afford it?</p>	<p>Availability Can I find it?</p>	<p>Awareness Do I know it exists?</p>
<p>Preference Will I have to sacrifice?</p>	<p>Shame Is it embarrassing?</p>	<p>Trust Do I believe you?</p>
<p>Agency Can I make a difference?</p>	<p>Fatalism Have I given up?</p>	<p>Social Acceptance Is it normal?</p>
<p>Habits Do I have to change my day?</p>	<p>Myths Are there false beliefs?</p>	<p>Desire Does it call to me?</p>

Benefits That Spark Action

To bust through the barriers, we need to ask ourselves a crucial question when promoting a low carbon behavior: are we effectively selling the benefits? Emphasis is often placed on engaging in low carbon behaviors for the environmental benefits (“for the good of the planet”), but benefits that are personally relevant are more effective at busting through psychological barriers. Let’s break it down into three key categories of benefits – functional, emotional, and social:



1. Functional benefits play a crucial role in selling low carbon behaviors. Consider how sustainability can add value for money, enhance performance and efficacy, improve quality, save time, or contribute to safety. Understanding and emphasizing these functional benefits can make sustainable choices more appealing to the public.

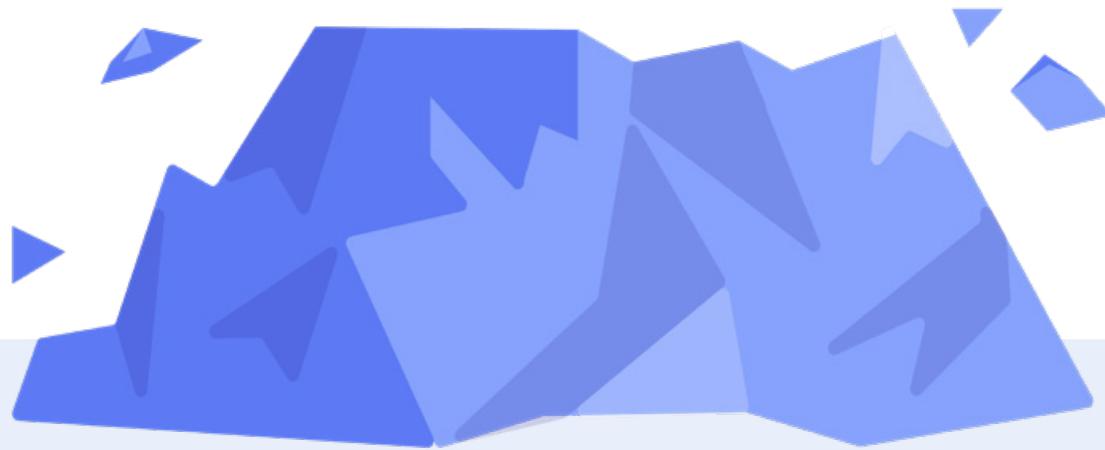
2. Emotional benefits are equally important. It’s essential to acknowledge that the consumer is the hero, not the brand or communicator. The feel-good factor associated with buying sustainable products and taking low carbon actions can be a significant motivator. Does sustainability strengthen sensory enjoyment, provide physical comfort, offer an exciting experience, boost self-worth, or offer a sense of personalisation? These emotional benefits can truly make a difference in consumers’ decision-making.

3. Finally, let’s not forget about **social benefits**. How does sustainability impact family dynamics, desirability in the eyes of others, the perception of being cool, smart, or part of a community? Highlighting these social benefits can create a sense of belonging and encourage individuals to embrace sustainable choices.

Focusing on these benefits will speed up consumers’ ability to align their actions with their values.



Values



Action

BENEFITS



Functional

- Better health
- Better value for money
- Enhanced performance
- Increased efficacy
- Higher quality
- Time-saving
- Increased safety
- Easier use
- Less hassle



Emotional

- More pleasure
- Greater comfort
- More excitement
- Heightened self-worth
- Enhanced personalisation
- Increased happiness



Social

- Build stronger relationships
- Become more desirable
- Appear cooler, smarter, more able
- Foster community
- Improve sense of belonging
- Develop shared experiences

How We Developed the Action Wheel

Underpinning this guide is the research published by the IPCC in *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. In Chapter 5: *Demand, Services and Social Aspects of Mitigation*, the IPCC provide a synthesis of 60 demand-side options ordered by the median greenhouse gas mitigation potential. The source of the data is a meta-study by Ivanova et al (2020).

From 60 to 33 with Project Drawdown

We are grateful to Project Drawdown for focusing our work on the areas which carry the greatest impact. Project Drawdown used the source data from the meta-study to narrow down options based on their real potential to reduce emissions—that is, options with a statistical difference from zero—with a bias toward options for middle and higher-income people in the Global North.

Project Drawdown focused on options that were backed up by the scientific research and care was taken to avoid options that the data showed would not have a meaningful effect on reducing emissions. Drawdown believes the final result is a list of 33 outcomes that are significant (from a statistical and scientific perspective).

There are many more behaviors that can positively impact both nature and society that are not included here. For example, behaviors/products that save waste or water, improve livelihoods or bring health benefits. As we have taken the IPCC as our source, this report is focused exclusively on actions that reduce CO₂e emissions. Futerra and BEworks will expand this approach to wider sustainable lifestyles in our ongoing work together.

Identifying Antecedent Behaviors

To identify potential antecedent/pathway behaviors that would lead to the 33 mitigation outcomes prioritized by Project Drawdown, we first established an operational definition for “behavior” as being a concrete action that is undertaken by an agent. For each outcome, a list of candidates can be generated that conform to this operational definition. For example, if we consider “less car transport”, we can create a list of specific, observable actions that an individual can undertake to achieve that outcome. This could include (but is not limited to) taking public transportation to work, subscribing to a car-share service, walking or cycling short distances.

The antecedent behaviors detailed in this report are *not* a comprehensive list of all the possible antecedent behaviors that could lead to the specified outcome, but rather illustrative examples common in high emissions societies.

Partners in this guide



From glamourizing refills to normalizing plant-based diets, Futerra helps our clients and partners nudge people to greener, healthier and more sustainable ways of living.

Futerra's commitment to sustainable lifestyles is why we created the first [climate behavior change guide](#) for the UK government in 2004. Why we joined the [UN Task Force on Sustainable Lifestyles](#) in 2005. Why we pioneered the sharing economy with Swishing, the parties for clothes recycling, in 2007. Why we established the [Sustainable Lifestyles Frontier Group](#) with BSR, L'Oréal, Walmart, McDonalds and many others in 2013. And why we worked with the United Nations and scientists across the world to translate the Sustainable Development Goals into new '[Good Life Goals](#)' to give individuals the same status as institutions in creating a sustainable future



BEworks is a global management consulting and research firm specialized in applying behavioral science to business and policy challenges. We offer deep understanding of the psychological, social, and environmental factors influencing how people make decisions, why people act the way they do, and the most effective strategies for shifting beliefs, choices, and behaviors for the better.

A collective of research scientists, strategists, and creatives, our team helps organizations re-cast their challenges through the illumination of the psychological and behavioral factors influencing outcomes and develop innovative solutions and systems at the intersection of science, creativity, and technology. Through rigorous scientific methods and world-class research acumen, BEworks' ideas and solutions are strongly evidence-based, ensuring that ambition is matched by impact.



At WBCSD, over 225 of the world's forward-thinking companies work together to accelerate the transition to a sustainable world. We are a global, CEO-led organization whose mission is to accelerate the transition to a sustainable world by making more sustainable business more successful. Our vision is to build a world where nine billion people are living well and within the boundaries of the planet, by 2050.

Our mission and vision are ambitious. Driving long-term, sustainable change across our highly complex and interconnected world is not easy. No problem exists in isolation, and incremental change is no longer sufficient to fix the world's most pressing challenges.

Previous reports and guides on behavior change for further reading



[Big Brands, Big Impact](#)
[A Marketer's Guide to Behavior Change](#)

BSR x Futerra



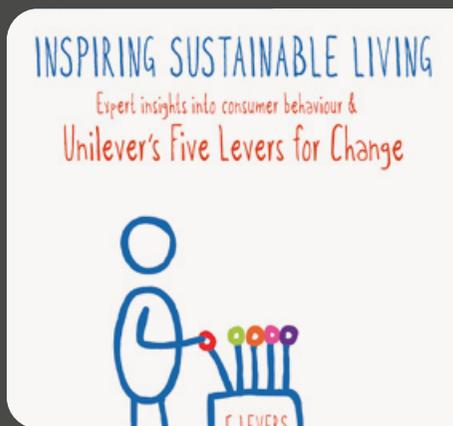
[The Good Life Goals](#)

WBCSD x Futerra



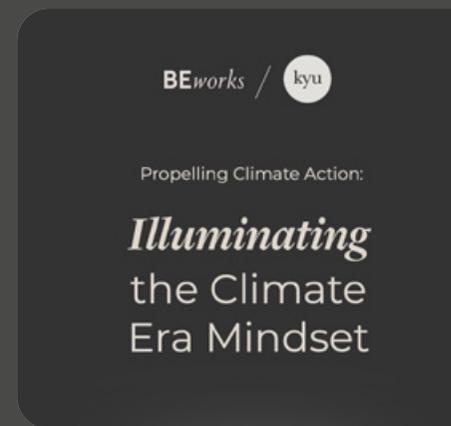
[Task Force on Sustainable Lifestyles](#)

UN x Futerra



[Unilever's Five Levers of change](#)

Unilever x Futerra



[Illuminating the Climate Era Mindset](#)

BEWorks x Kyu



Business Leaders Guide
to Climate Adaptation
and Resilience

[Business Leaders Guide
to Climate Adaptation
Resilience](#)

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The plant-forward
opportunity:
A business playbook to meet
consumer demand within planetary
boundaries

→ Crafting innovative plant-forward portfolios presents a powerful opportunity for agrifood companies to meet better-for-you consumer needs within planetary boundaries

[The plant-forward
opportunity](#)

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The Case for
Beyond-Value-Chain
Actions

[The Case for Beyond-
Value-Chain Actions](#)

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UNEP BIMG

BIMG
Beacon Projects
2024

Shining examples of scalable business projects that are helping to tackle climate change, nature and biodiversity loss, pollution, and waste all around the world.

Report prepared by WBCSD, co-chair of BIMG group

[BIMG Beacon
Projects 2024](#)

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Zero Emission
Vehicle
Emerging Markets
Initiative

→ Public-private collaboration models & best practices

Executive summary

International public-private collaboration in emerging markets and developing economies (EMDEs) can accelerate global transport decarbonization by creating shared policies

[Zero Emission
Vehicle Emerging
Markets Initiative](#)

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