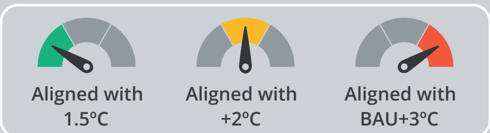
Walmart (WMT:US)
Climate Transition Analysis

Climate Action 100+ Focus Company

Overall Assessment

Planet Tracker: Walmart is expected to align with a 2°C pathway by 2030 when historic operating emissions are considered.

According to Planet Tracker's analysis, Walmart's transition plan displays a mix of strengths and limitations. While engaging extensively with suppliers and advocating for climate policies, its transition efforts are hindered by a substantial rise in Scope 3 emissions and thus an overall increase in total emissions. The absence of quantified financial impacts in the risk analysis raises concerns about comprehensive risk management. Walmart's ambitious commitment to carbon neutrality is bolstered by its green bond investment, yet its transition strategy falls short of effectively addressing Scope 3 emissions. Thus, when Walmart's full footprint is considered, the company risks overshooting its 2°C alignment, potentially leading to a business-as-usual global warming scenario by 2030.This outcome highlights the need for more robust supplier sustainability requirements and quantified mitigation measures, especially regarding its value chain.



This report is one of a series examining the climate transition plans of companies in the Climate Action 100+ list. This project is separate to and not affiliated with Climate Action 100+.

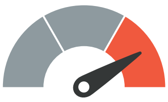
Download the Shareholder Engagement Sheet here.

Climate Alignment

- From 2019 to 2021 Walmart experienced a significant rise in Scope 3 upstream emissions (29%) and a notable overall increase in total emissions of 21%.
- In the absence of additional measures to mitigate GHG emissions by 2030 Walmart will overshoot Science-Based Targets (SBT) by 570% leading to a potential +3°C scenario by 2030.

Policy and Governance

- Walmart engages extensively with suppliers through diverse strategies, but its customer engagement is limited, contrasting with its active role in advocating for climate policies aligned with the Paris Agreement.
- Although sustainability-linked compensation is present, the lack of specific information prevents confirming the management's alignment with the 1.5°C goal.



Risk Analysis

- Walmart's assessment of financial impact highlights potential Transition and Physical risks, including carbon pricing mechanisms and climate-related damages.
- However, the company's report lacks quantification of monetary impacts associated with these risks, potentially leaving investors unaware of the magnitude of financial consequences and creating uncertainty about the alignment of risk management actions with the Paris Agreement's goals.

Strategy Assessment

- Walmart's commitment to carbon neutrality by 2040 is supported by its USD 2 billion green bond.
- Despite notable efforts in mitigating operating emissions, Walmart's transition strategy falls short of addressing Scope 3 emissions effectively and, without consistent Scope 3 mitigation, the company risks pushing its 2°C alignment on a track for a +3°C global warming scenario by 2030.

Planet Tracker

Further information:
Nicole Kozlowski, Head of Engagement
nicole@planet-tracker.org

Company Overview

Walmart Inc. (WMT:US), the largest United States (US) retailer in terms of revenue, achieved an average annual sales of USD 551.8 billion and operating profit of USD 22.3 billion over the last five years (2018 to 2022)[1].

Its gross margin stood at 4%, driven by a diversified range of grocery and general merchandise offerings. The US market contributed 80% of the annual revenue, while Mexico and Central America (6%) and Canada (4%) represented its primary external markets - see Figure 1

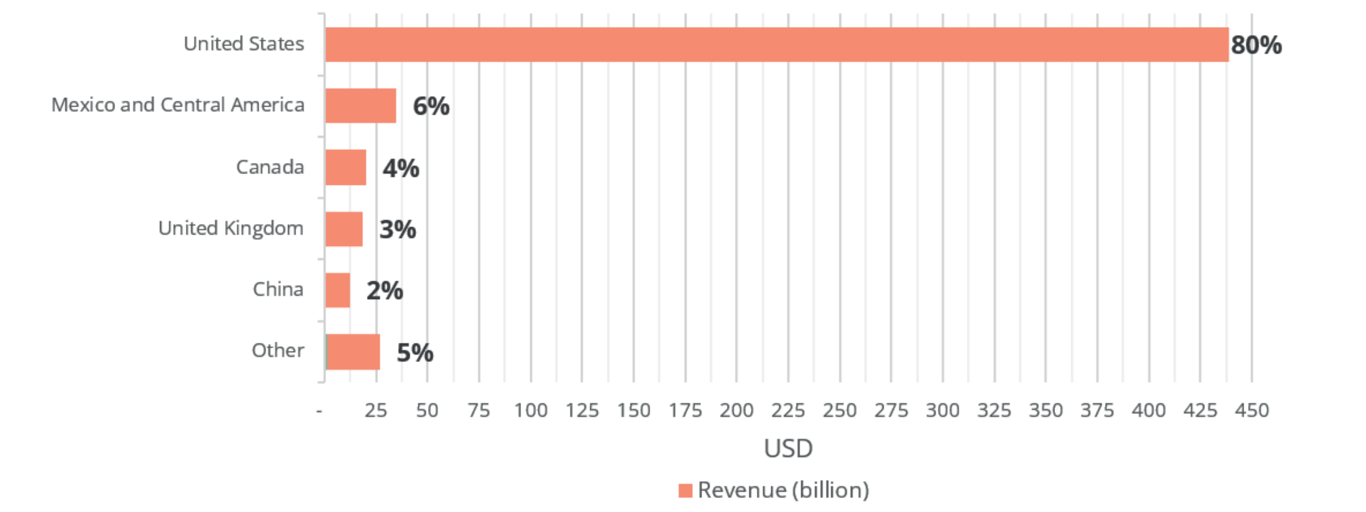


***Figure 1:** Revenue (%)- Breakdown by Geography (5Y Avg.). Source: Walmart Annual Reports 2019-2023[2].*

The US also holds a dominant position in long-lived assets[3] at 76%, while the rest of the world constitutes the remaining 34%.

Within the US[4] , the sales composition (2018 to 2022) was led by grocery and consumables, accounting for 57%, followed by general merchandise (31%), encompassing home and apparel, and health and wellness items (10%) - see Figure 2.

1 From January 2018 to January 2023.
2 Bear in mind that the fiscal year disclosed in the 2023. Annual Report covers the period January 2022 to January 2023.
3 Long-lived assets consist primarily of property and equipment, net and lease right-of-use assets, aggregated by the Company's U.S. and non-U.S. operations.
4 Encompassing Walmart U.S. and Sam's Club sales. The company does not disclose the business segments' breakdown for Walmart International.

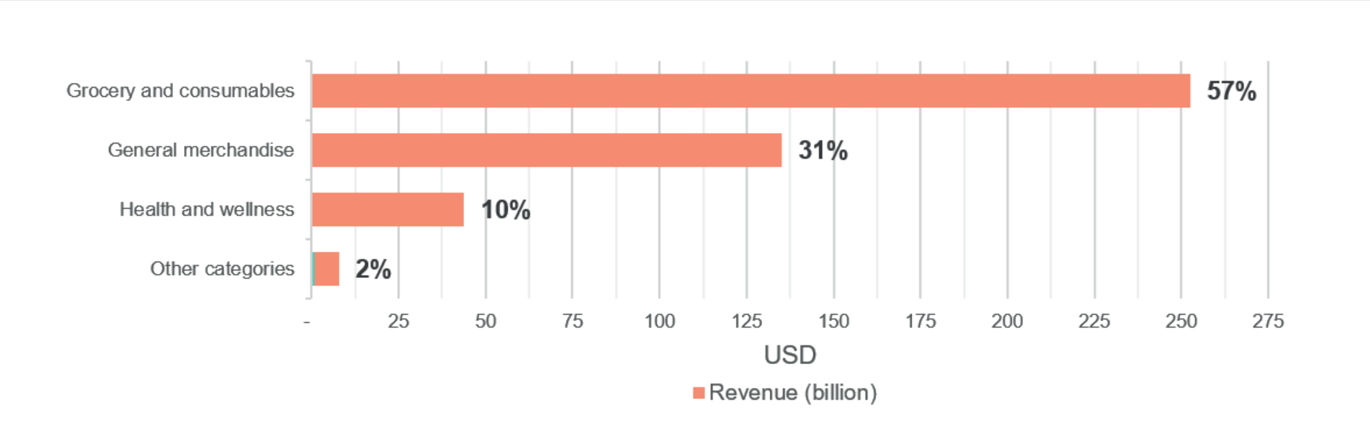


Figure 2: *Revenue (%) - Breakdown by Business Segments (5Y Avg.). Source: Walmart Annual Reports 2019-2023.*

Walmart's reliance on natural commodities from regions at deforestation risk is notable[5] , including "palm oil", "pulp, paper and timber products", "beef" and "soy". Although the company disclosed key sources of palm oil in its 2022 CDP Forests response, the procurement volume from each country remained undisclosed[6]. Sustainable sourcing initiatives linked to the Brazilian Rainforest and Cerrado and the Gran Chaco in Argentina and Paraguay were disclosed for beef and soy.

Yet the precise procurement volume tied to each region was not ascertainable from the disclosed information. For "pulp, paper, and timber products", origin-related disclosures were absent.

In summary, despite certain limitations, it is reasonable to infer that Walmart's primary exposure to climate risks and related policies lies within the United States, followed by Latin America, notably Mexico, Brazil, Argentina and Paraguay.

5 For further information on the EU Deforestation Directive please see 'EU Regulation to Cause Log Jam'
6 Walmart names Colombia, Ecuador, Guatemala, Indonesia, Malaysia, Nigeria, Papua New Guinea and Thailand as significant sources of palm oil.

Climate Alignment

EMISSIONS INVENTORY

Over 2019-2021[7], Walmart's average Greenhouse Gas (GHG) emissions stood at 217,135 $KTCO_2e$, with a peak of 258,332 $KTCO_2e$ in 2021 and a low of 189,710 KTCO2e in 2020. In 2021, Scope 1 emissions contributed to 2.8% of total GHG emissions, while Scope 2 emissions (location-based) accounted for 3.7%.

The largest portion, 93.5%, originated from Scope 3 activities. Among these emissions, 81% originated from upstream activities[8], while 12.5% stemmed from downstream activities[9]. Notably, the primary contributors have been Upstream Purchased Goods, constituting 72.2% of total emissions, followed by Downstream Consumption at 12.5% - see Figure 3.

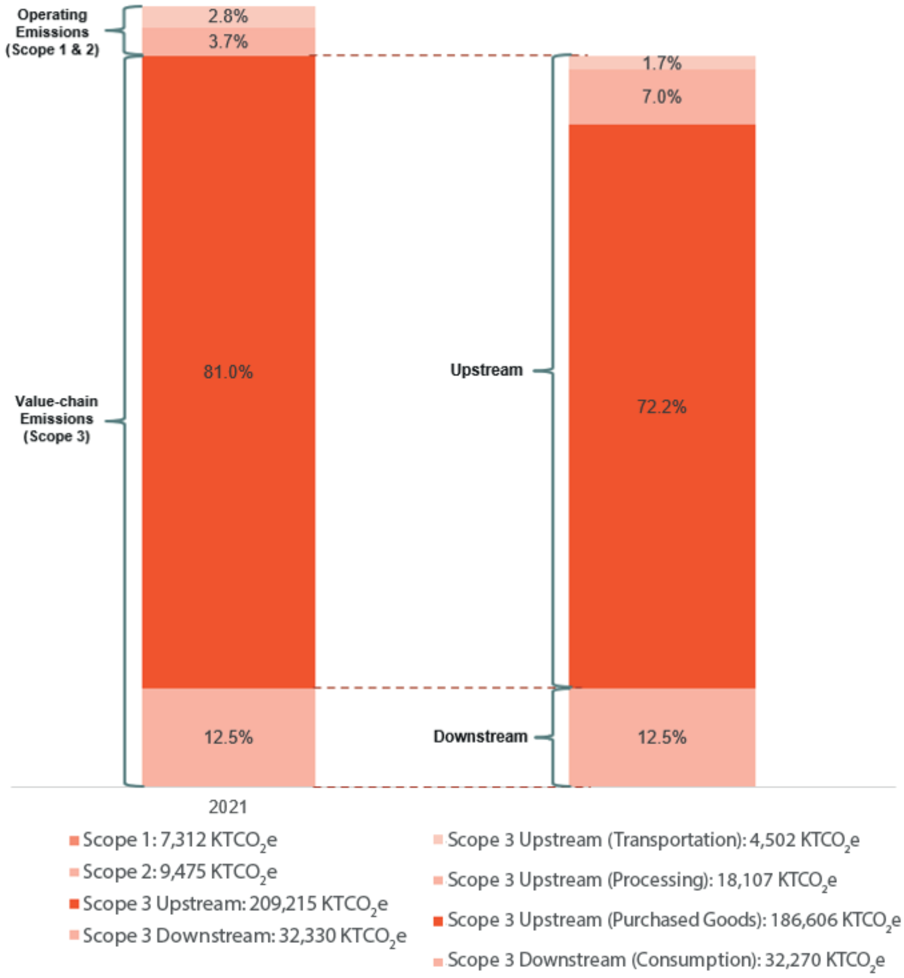


Figure 3: *Value Chain GHG Emissions (2021) - Percentage Breakdown by Scope.*
Source: Walmart's Climate Change CDP Answers 2022.

7 While Planet Tracker aimed to analyse Walmart's emissions trajectory for the last five years due to the company's changes in emissions accounting methodology, we had to consider the like-for-like comparison of 2019 - 2021.

8 Scope 3 upstream emissions include: (1) Purchased Goods - accounting for the emissions from raw ingredients and packaging materials; (2) Processing - including the emissions from "Capital Goods", "Fuel and Energy Activities" not covered in Scope 1 and 2, and emissions from "Waste from Operations"; (3) Transportation - covering emissions from "Transport & Distribution", and "Employee commuting".

9 Scope 3 downstream emissions include: (1) Consumption - covering emissions from the "Use of sold products" which stands for emissions from complementary products and services used together with the company's products, downstream "Transportation and Distribution" and "Business Travel – due to their low magnitude to be a category on their own and downstream "Leased Assets".

It is of note that, to estimate its Scope 3 emissions in 2021, especially in relation to "Purchased Goods", Walmart employed a spend-based approach, using the US Environmental Input-Output (EEIO) model and the global warming factors outlined in the Intergovernmental Panel on Climate Change's Sixth Assessment Report (IPCC AR6).

This methodology does not guarantee the inclusion of emissions related to land use changes. Moreover, the emissions factors employed at this level of aggregation are unlikely to offer a precise reflection of the emissions within Walmart's supply chain.

In addition, to account for these emissions in 2019, Walmart used CDP Supply Chain program data from 2018 to accumulate emissions from 262 suppliers totaling 143,268 $KTCO_2e$. Meanwhile in 2020, the company used CDP Supply Chain program data from 2020 to accumulate emissions from 228 suppliers totaling 26,600 $KTCO_2e$ which represented ~20% of total company sales. Then, Walmart extrapolated those emissions to account for 100% of its sales, totaling 130,200 $KTCO_2e$.

Consequently, Planet Tracker advises exercising prudence when evaluating Walmart's historic and current GHG footprint, due to the differences in emissions accounting methodology from one year to another.

EXTERNALITIES TRENDS AND TARGETS

Between 2019 and 2021, Walmart witnessed an annual average rise of 12.7% in total GHG emissions. The breakdown reveals a 13% absolute growth in Scope 1 emissions and a 38% surge in Scope 3 upstream emissions.

Conversely, Scope 2 emissions experienced a 22% reduction, and Scope 3 downstream emissions decreased by 1%. These shifts culminated in a 27% overall absolute increase in Walmart's total emissions from 2019 to 2021 - see Figure 4.

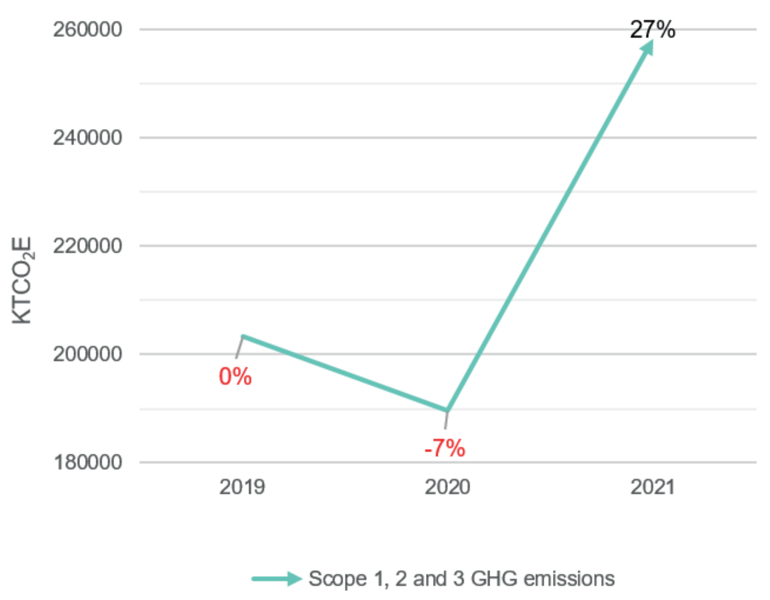


Figure 4: *CO_2e Evolution in the last three years. Source: Walmart's Climate Change CDP Answers 2020-2022 and Planet Tracker Calculations.*

It's important to note that the 38% absolute increase in Scope 3 upstream emissions was partially attributed to a modification in the emissions accounting method for the upstream processing "waste from operations."

Adjusting for this alteration, the absolute increase in upstream Scope 3 emissions was 29% from 2019 to 2021, leading to an overall 21% absolute emissions growth – see Figure 5. While the company does not disclose the reason for this increment, the economic expansion post-COVID-19 could be a plausible explanation. This adjusted percentage change will be used when extrapolating historical emissions in subsequent sections.

Nevertheless, bear in mind that despite these adjustments, due to company's differences in accounting for Scope 3 emissions - as highlighted in the previous section - any extrapolation exercise will have its limitations.

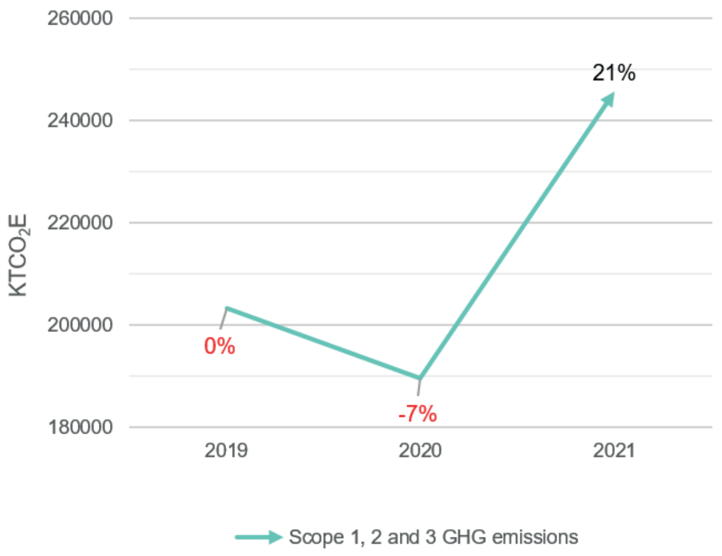


***Figure 5:** Adjusted CO_2e Evolution in the last three years. Source: Walmart's Climate Change CDP Answers 2020-2022 and Planet Tracker Calculations.*

Notably, during the 2019–2021 period, Walmart achieved a compound annual growth rate of 4.5% in revenue, aligning with the company's mid to long-term revenue growth target of 4%[10]. Thus, projecting the historical emissions trend into the future inherently takes into account the company's economic expansion. This projection also accounts for the COVID-19 pandemic's transient economic impact, reflecting both the downturn and subsequent recovery.

To forecast emissions up to 2030, a straightforward extrapolation model compounds the annual emissions change rate from the last three years. It is essential to note that this trend presumes no additional mitigation actions by the company. Thus, examining Walmart's engagement and investments becomes crucial to gauge whether the company will break from the historical pattern. The model projects a 6.2% yearly increase in Scope 1 emissions, an 11.8% yearly decrease in Scope 2 emissions, a 13.7% yearly rise in upstream Scope 3 emissions, and a marginal 0.5% yearly decrease in downstream Scope 3 emissions.

10 For more details see link.

Extending these trends, Scope 1 and 2 emissions are expected to reach 9,298 $KTCO_2e$ and 5,724 $KTCO_2e$ by 2025, and 12,555 $KTCO_2e$ and 3,048 $KTCO_2e$ by 2030, respectively. Meanwhile, upstream Scope 3 emissions are projected at 350,090 $KTCO_2e$ by 2025 and 666,289 $KTCO_2e$ by 2030. Downstream Scope 3 emissions are expected to reach 31,729 $KTCO_2e$ and 30,995 $KTCO_2e$ by 2025 and 2030, respectively.

Overall, if no further mitigation is undertaken, extrapolated emissions by 2030 are estimated at 712,887 $KTCO_2e$. 93.5% of this total comes from Scope 3 upstream, with 1.8% from Scope 1, 0.4% from location-based Scope 2, and 4.3% from Scope 3 downstream – see Figure 6.

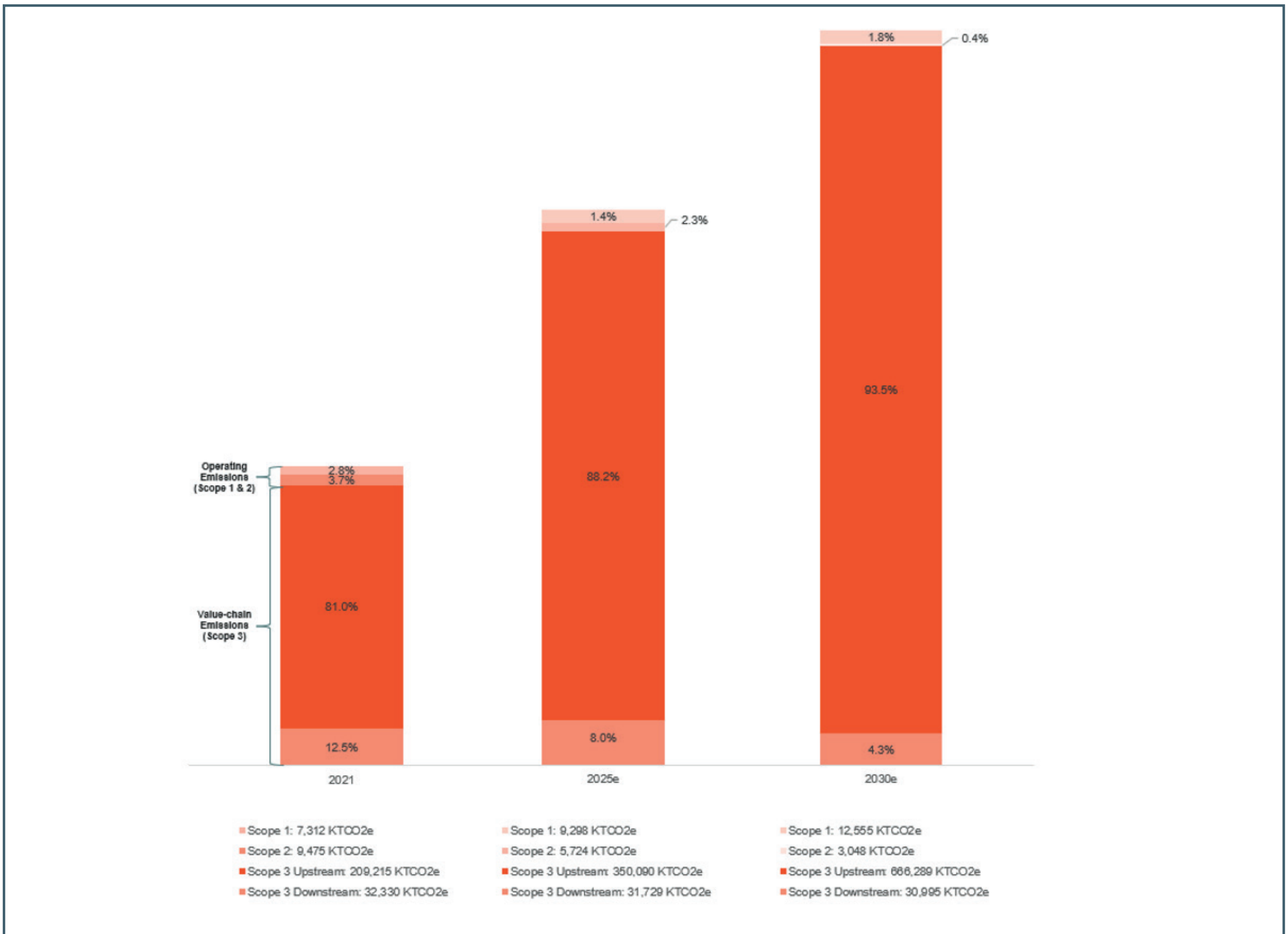


Figure 6: *Value Chain GHG Emissions (2025e & 2030e) – Percentage Breakdown by Scope. Source: Walmart's Climate Change CDP Answers 2020–2022; Planet Tracker Calculations*

Please be aware that this extrapolation exercise aims to show the general future direction of the company's emissions based on their historic evolution. Due to changes in accounting methodology this is not an mathematically exact exercise.

In line with this caveat, Walmart representatives pointed out to us that while "Walmart has followed applicable instructions and guidance in completing [its] CDP submission and aligned individual Scope 3 category calculations with an acceptable GHG Protocol methodology, [the company] has never attempted to or purported to disclose what it believes to be a comprehensive and accurate accounting of its Scope 3 footprint."

According to the company, its Scope 3 "disclosures that are inherently unreliable[11] and have not been made with any intention that they be used to engage in modeling". At Planet Tracker we find value in offering a broad view of the company's GHG footprint direction despite the limitations of the exercise.

11 Walmart representatives have highlighted that their Scope 3 emissions are "[d]ependent on the suppliers' own calculations being highly accurate, which cannot be confirmed" by Walmart at the moment and they only represent a partial market scope.

In 2020, Walmart increased its ambition to achieve carbon neutrality across its global operations by 2040[12]. This encompasses the interim objective, endorsed by the SBTi, to lower Scope 1 and 2 GHG emissions by 35% by 2025 and 65% by 2030 from the 2015 base year[13].

Furthermore, the company pledged to reduce or avoid one billion tonnes of CO_2e by 2030 ('Project Gigaton'), using a 2017 baseline - see Table 1[14]. However, it is important to note that this target, linked to curbing GHG emissions from upstream and downstream Scope 3 sources, doesn't restrict suppliers to reporting only emissions related to their Walmart business.

Table 1: *Walmart's Value Chain Goal - Reduce or Avoid One Billion metric tons of CO_2e emissions - Project Gigaton. Source: Walmart's Climate Change Report.*

Variables	2019	2020	2021	2022
Reduced or avoided emissions reported by suppliers cumulatively since 2017	>230,000 $KTCO_2e$	>416,000 $KTCO_2e$	>574,000 $KTCO_2e$	>750,000 $KTCO_2e$
Reduced or avoided emissions reported by suppliers in the reporting year	>136,000 $KTCO_2e$	>186,000 $KTCO_2e$	>158,000 $KTCO_2e$	>175,000 KTCO2e
Number of suppliers reporting	>1,000	>1,500	>2,500	>3,000
Percentage of U.S. product net sales USD represented by reporting suppliers	NA	60%	>70%	~75%

Consequently, actions taken and reported through Project Gigaton cannot be used to measure Walmart's Scope 3 emissions, nor assess its mitigation. This dynamic adds to Planet Tracker's concern regarding the "avoided emissions" term used when describing Project Gigaton due to its high greenwashing risk. And while Project Gigaton sounds impactful, Walmart has not revealed its absolute representation for the company's Scope 3, which Planet Tracker estimates to exceed 697,284 $KTCO_2e$ by 2030.

Meanwhile, Walmart representatives highlighted that the company is working hard to develop a methodology that will account for suppliers actions and the project's impact on Walmart emissions. However, until that moment occurs, they pointed out that "any analysis based on inaccurate and limited Scope 3 calculations without accounting for the deep work Walmart and its suppliers are actually doing to bring down Scope 3 emissions" will lead to inaccurate conclusions.

12 Please be aware that these exclude the company's Scope 3 activities and related emissions.
13 According to the company in 2015 Scope 1 emissions accounted for approximately 6,080 $KTCO_2e$, while Scope 2 accounted for 13,840 $KTCO_2e$ -> Source
14 The company set the target initially in 2015 but did not start to measure its progress until 2017.

To assess Walmart's 1.5°C pathway alignment by 2030, Planet Tracker used the standard[15] 42% absolute reduction for disclosed Scope 3 categories from a 2020 baseline.[16] Updated to include the 2021 progress, Walmart must cut Scope 1, 2, and 3 GHG emissions by 43% by 2025 and 59% by 2030[17], equivalent to 148,387 $KTCO_2e$ and 106,408 $KTCO_2e$ respectively. However, based on the extrapolated emissions trend from a 2021 baseline and 4.5% annual revenue growth, emissions could surge by 54% to 396,841 $KTCO_2e$ by 2025 and a staggering 176% to 712,887 $KTCO_2e$ by 2030 - see Figure 7.

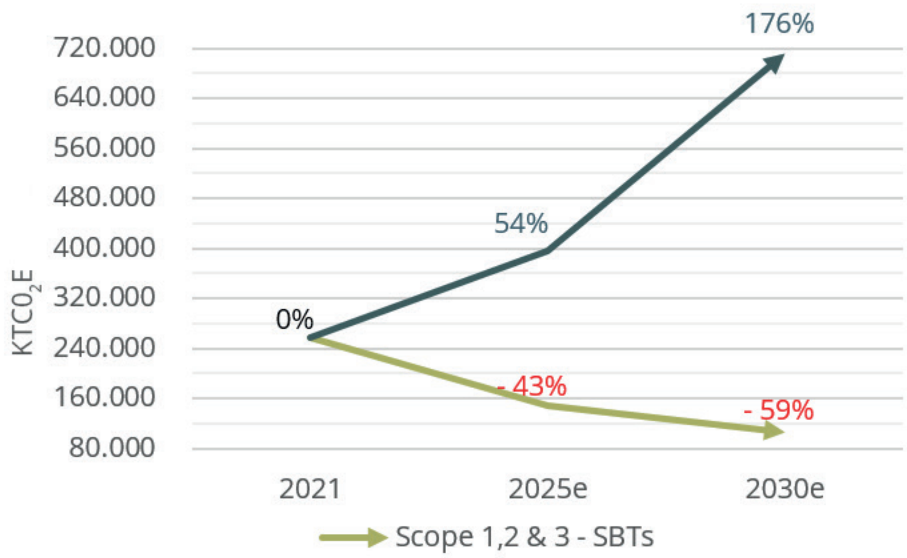


Figure 7: *Future GHG Emissions – SBTs vs Extrapolated Trends. Source: Source: Walmart's Climate Change CDP Answers 2020–2022, Walmart's Climate Change Resources, and Planet Tracker Calculations.*

Figure 7 also highlights that by 2030, Walmart's Scope 1, 2 (location-based) and 3 GHG emissions will surpass SBT's recommended levels by a notable 570%. Our climate sensitivity model, outlined in the "Strategic Assessment," indicates that without further intervention, Walmart's current emissions trajectory would lead to a business-as-usual (BAU) pathway of +3°C by 2030.

While the company's representatives consider that "Walmart's science-based targets and progress are the best evidence of its temperature alignment", at Planet Tracker we argue that a temperature alignment ultimately is the result of a plan/strategy, and a target in itself is not a strategy. For this reason we subsequently assess company's Policy and Governance, Risk Analysis and Strategic Alignment.

15 By "standard" we refer to the generic mitigation ratio suggested by the SBTi for those companies that are not part of a specific sectoral pathway.

16 While Walmart representatives consider "Scope 3 reporting generally should not be used to estimate a company's temperature alignment", we find its inclusion paramount for a Net Zero alignment.

17 For clarity these reductions take into account Walmart's progress for Scope 1 and 2 emissions since 2015 and its progress regarding Scope 3 since 2020.

Policy and Governance

ENGAGEMENT AND INFLUENCE

Suppliers' Engagement

Walmart's response to the 2022 CDP Climate Change questionnaire highlights a comprehensive supplier engagement campaign. This campaign aims to enhance supplier awareness of climate change and its challenges. Accordingly, the initiative includes diverse strategies such as training, support and sharing of best practices to establish credible renewable energy usage claims. The objective is to encompass 70% of procurement spend, spanning both direct and indirect expenditures, within a globally diverse supply chain involving over 100,000 suppliers.

Recognising that a significant portion of its GHG emissions originates beyond its operations, Walmart has introduced programmes for all direct suppliers to contribute to a more sustainable value chain. Accordingly, the company has made some specific commitments pertaining to deforestation; however, these commitments are not all-encompassing in their scope and primarily pertain to its private-label products. This presents a noteworthy gap in their approach, as a significant proportion of Walmart's emissions associated with deforestation are likely attributable to their sales of third-party products.

Specifically, with regards to palm oil and timber, Walmart has set a commitment to achieve 100% deforestation and conversion-free sourcing exclusively for their private-label products. In the case of soy, they aim to achieve deforestation and conversion-free sourcing for own label products by the year 2023. Additionally, for South American beef, Walmart aims to ensure that 100% of the fresh beef they sell is deforestation and conversion-free by the year 2025.

Notably, Project Gigaton™ stands out as a major endeavour, targeting a substantial reduction or avoidance of one billion metric tons (a gigaton) of GHG emissions across its global value chain by 2030. While caution is warranted when using terms like "avoided" emissions due to their potential for greenwashing, Walmart's commitment through Project Gigaton is commendable.

The company offers valuable resources to suppliers, including:

- Calculators: These tools assist suppliers in identifying opportunities to mitigate emissions and quantifying the impact of their initiatives
- Product standards: Requirements are set to guide suppliers in adopting practices that align with emissions mitigation.
- Webinars and summits: Training sessions and best practice sharing are conducted through webinars and summits.
- Impact accelerators: Collaborative initiatives like the Power Purchase Agreement[18], Circular Connector[19] and Nature Map[20] drive meaningful change.
- Tools and playbooks: Resources such as the Factory Energy Efficiency tool facilitate emission reduction efforts.
- Capital for transition: Walmart has partnered with CDP and HSBC to offer an early-payment programme for suppliers with science-based targets or specific CDP score thresholds.

In closing, it is apparent that Walmart predominantly employs incentives as opposed to punitive measures (i.e., carrot vs. stick). Consequently, there is a lack of substantiated evidence pointing to obligatory mandates or established protocols for addressing non-compliance, as many of the initiatives discussed above operate on a voluntary basis.

In addition to these resources, Walmart actively supports public policies promoting regenerative approaches both directly and through engagement with trade associations[21]. Further details on these aspects will be explored in the subsequent sections.

18 Find more details here.
19 Find more details here.
20 Find more details here.
21 As an example, the company disclosed its involvement in the Midwest Row Crop Collaborative, a public-private partnership.

Customer Engagement

In its response to the CDP's 2022 climate change questionnaire, Walmart presents a consumer engagement approach designed to educate and foster information exchange. However, the percentage coverage of customers or customer-related Scope 3 emissions within this initiative remains undisclosed.

As an example of this engagement campaign Walmart introduced "Built for Better," an online shopping platform that simplifies the identification and purchase of products aligned with both personal and planetary well-being (as defined by the company). This feature employs "Built for Better - For the Planet" icons on Walmart.com, highlighting products that contribute to reduced environmental impact, emphasising sustainability and climate consciousness. Over 30 independent environmental standards, such as Energy Star Certified, Rainforest Alliance Certified and Better Cotton Initiative, are incorporated.

Furthermore, Walmart actively engages with the public to advocate for climate action and inspire heightened ambitions.

This involvement takes the form of interacting with reporters, releasing articles endorsing climate policies and hosting events such as the Annual Sustainability Milestone[22] to connect with key stakeholders. Regular dialogues with NGOs such as WBCSD, EDF, WRI, Conservation International and The Nature Conservancy are also maintained. Walmart's participation extends to significant forums including UN COPs, the Fortune Global Sustainability Forum, Reuters Responsible Business Summit, The Economist's Climate Risk Summit, the Aspen ESG Summit, Concordia's Annual Meeting and the World Economic Forum's Davos events.

Lastly, company representatives highlight "engaging its customers in reducing Scope 3 emissions by offering [them] products that have a lower GHG footprint—for example, products that are sourced as deforestation and conversion free, made by suppliers participating in Project Gigaton [...]".

Influence on Policymakers

Walmart's engagement with U.S. policymakers aligns with its Climate Policy Statement[23], focusing on a targeted set of climate-related policies. Using registered lobbyists and consultants under the U.S. Lobbying Disclosure Act (LDA)[24], the company advocates its stance at the federal and state levels. As a demonstration of its commitment, Walmart joined a Ceres joint letter in March 2022 urging ambitious GHG emissions targets in Maryland. Similarly, in April 2021, as part of the We Mean Business coalition, the company supported a call for President Biden to establish ambitious 2030 GHG emissions reduction goals.

According to the company, Walmart also maintains a global advocacy role for Paris-aligned climate policies. At COP27 in November 2022, the company endorsed a business plea for 1.5°C global temperature rise limits and participated in the International Chamber of Commerce's delegation, contributing to ongoing climate negotiations during COP26.

Beyond direct policy advocacy, Walmart's participation in trade associations and coalitions is guided by its strategic goals. While potential misalignments could arise due to evolving priorities, the company engages these associations on climate issues, as outlined in Table 2.

22 Find more details here.
23 Find more details here.
24 Find more details here.

Table 2: *Walmart's Engagement with Major Trade Associations on Climate Policy* *Source: Walmart's Climate Change Report*	
Organisation	**Current Position and Engagement**
Business Roundtable	Walmart has endorsed the Business Roundtable's call for a U.S. national climate policy solution to reduce U.S.-based emissions by at least 80% by 2050 through a market-based mechanism that includes a carbon price. The Business Roundtable action is also in accord with the Paris Agreement on climate change.
National Retail Federation (NRF)	The NRF is the largest retail trade association in the U.S. In January 2022, in partnership with Walmart and other leading retailers, NRF released the Retailers Reaching for Net-zero guide. This provides a pathway for setting SBTs and provides an extensive resource list to assist retailers in reaching their sustainability goals.
Retail Industry Leaders Association (RILA)	The RILA brings together the nation's leading retailers to advance the industry through public policy advocacy, operational excellence and innovation. Walmart provided insights to RILA to help develop their Climate Priorities report (which summarised the member perspective on GHG emission reduction strategies and categories that receive policy attention at the state and federal levels) and supported its release.
International Chamber of Commerce (ICC)	The ICC promotes international trade, responsible business conduct and a global approach to economic regulation. ICC is the official Focal Point for Business in the United Nations Framework Convention on Climate Change (UNFCCC). Walmart is a Vice Chair of the Global Environment and Energy Commission and was part of the ICC delegation at COP27.
Business at the Organisation for Economic Cooperation and Development (OECD)	Business at OECD (BIAC) conveys business perspectives and expertise to policymakers on a range of economic and policy issues. Walmart is a Vice Chair of the Environment and Energy Committee, which helps the OECD guide member governments to design and implement policies that address environmental challenges.
World Economic Forum (WEF)	Walmart is a member of WEF's Global Future Council on Trade and Investment, where it advises leaders on the role of trade and investment in creating sustainable, resilient and equitable companies, economies and societies. The company also sit on the steering committee for WEF's Climate Trade Zero initiative.

Furthermore, according to the company, Walmart's role extends to multi-stakeholder coalitions promoting supportive policy environments - see Table 3.

Table 3: *Walmart's Engagement with Multi-Stakeholder Coalitions*
Source: Walmart's Climate Change Report

Organisation	Current Position and Engagement
We Are Still In	Walmart is a signatory of the coalition, which demonstrates its commitment to the Paris Climate Agreement as the group signed the We Mean Business/Ceres letter supporting a U.S. goal to cut emissions by at least 50% by 2030 and achieve net zero emissions by 2050. The group also endorsed the bipartisan Growing Climate Solutions Act, which included a strategy for increasing carbon sequestration opportunities in the agricultural supply chain.
Clean Energy Buyers Association (CEBA)	Walmart currently sits on the board and is a long-time member of CEBA (formerly the Renewable Energy Buyers Alliance), a collaboration of clean energy buyers, energy providers and service providers that, together with NGO partners, seek a transition to a zero-carbon energy future. Walmart advised and endorsed CEBA's statement on the Inflation Reduction Act, which emphasised market and policy-based measures to decarbonise the grid.
Business for Nature (BFN)	BFN is a global coalition that brings together business and conservation organisations to call for governments to adopt policies to reverse nature loss in this decade. Walmart is a participant of the Strategic Advisory Group (SAG) which provides input on direction and focus areas and helps BFN aggregate action across nature, climate, development, and food system agendas.
LEAF Coalition	Walmart participates in the LEAF Coalition, a coalition bringing together the private sector and governments to provide finance for tropical and subtropical forest conservation.

In summary, Walmart seems to be adopting a limited customer engagement approach[25] while extensively collaborating with suppliers, by providing training and practical tools for the collaborative achievement of sustainability targets. However, despite cumulative emissions reduction efforts through the Gigaton Project, disclosed upstream emissions have increased over the past three years, indicating a modest effect of these engagement campaigns on the company's transition. Still, the company's Climate Policy stance and influence are thoughtfully aligned with the Paris Agreement, advocating for a 1.5°C trajectory.

25 Planet Tracker reached this conclusion because of the undisclosed customer coverage engagement in terms of emissions and the lack of quantified impact of their actions.

MANAGEMENT ALIGNMENT

Sustainability Targets Oversight

A. The Board

The Nominating and Governance Committee (NGC), an independent subset of Walmart's Board of Directors, holds responsibility for supervising the company's climate strategy and initiatives. Discussions in 2022 between NGC and management covered pertinent trends, risks, and regulations impacting climate efforts.

These encompassed Walmart's climate strategy, energy transformation focus, goal progression, climate policy positions, advocacy plans, external engagements and philanthropic investments to advance climate action. Key insights from these interactions are then communicated to the full Board of Directors.

B. The Management

According to the company, Walmart's climate strategy is an integral facet of its Environmental, Social, and Governance (ESG) approach. The corporate sustainability team spearheads climate strategy development, collaborating cross-functionally with teams such as finance, real estate, operations, merchandising, strategy, legal and public policy.

Furthermore, Walmart's executive leadership team undergoes at least annual reviews of its climate strategy, as the company conducts an annual assessment of climate risks within the Enterprise Risk Management process. And while detailed scenario-based assessments aren't explicitly disclosed, according to the company the last comprehensive evaluation occurred in 2020. Moreover, per Walmart's statements, ongoing coverage is exercised over both physical and transitional risks.

Management Compensation

Though Walmart's Proxy Statement lacks specifics regarding sustainability-linked compensation, indications of monetary incentives linked to sustainability targets are present in its 2022 CDP Climate response - see Table 4.

***Table 4:** Walmart's Sustainably Linked Compensation Disclosure*
Source: Walmart's 2022 CDP Climate Response

Entitled to incentive	Type of incentive	Activity incentivised	Comments
Corporate executive team	Monetary reward	Emissions reduction project. Behaviour change-related indicator.	Officers have built ESG objectives into their individual goals and objectives, which form part of the basis on which their performance is evaluated. E.g., Real Estate leaders have goals and objectives relating to advancing Walmart's renewable energy strategies.
Chief Sustainability Officer (CSO)	Monetary reward	Emissions reduction project. Behaviour change-related indicator.	Walmart's CSO is responsible for developing and driving the company's global responsibility agenda, which includes many time-bound targets and public commitments (including emissions reduction). CSO's performance evaluation and compensation depend in part on the performance of their team and that of the company in delivering on this agenda each year.
Environment/Sustainability manager	Monetary reward	Emissions reduction project. Behaviour change-related indicator.	Certain designated environmental/sustainability managers have compensation that is tied to the implementation of climate-related projects and behaviour change indicators to ensure Walmart is on track to meeting its climate-related targets. This is accomplished through the use of the goals that are incorporated into performance evaluations.

In conclusion, while elements of Walmart's management compensation appear related to sustainability achievements, the absence of granular information prevents Planet Tracker from verifying its alignment with the 1.5°C goal. We are unable to determine whether the sustainability metrics have a meaningful weighting in the executive compensation packages.

Risk Analysis

FINANCIAL IMPACT

Walmart's CDP Report omits the disclosure of potential financial risks linked to climate that might affect the company. However, the company's climate change report, accessible on its website[26], offers an assessment of Transition Risks and specifically outlines a modelled assessment of Physical Risks for a higher level of detail. While the Climate Transition Risks encompass regulatory, technological, legal, market, and reputation shifts, presented through examples, Walmart goes beyond in its Physical Risk assessment by modelling the ramifications of five climate impacts-floods (riverine and coastal), heat, drought, extreme precipitation and extreme winds-in key geographies (Canada, China, India, Mexico, and the United States) for 2030 and 2050.

This assessment extends to direct effects on Walmart's physical assets (retail stores and related facilities), supply chain and markets referred to as "communities."
In the pursuit of a comprehensive risk analysis concerning Climate Transition and Climate Change, this report examines both Physical Risks, encompassing extreme weather, and Transition Risks, including carbon pricing mechanisms (CPMs).

Transition Drivers

While Walmart acknowledges the potential Transition Risk impact concerning Scope 1 & 2 emissions under carbon neutrality, it offers a set of qualitative insights rather than quantitative analysis, as shown in Table 5.

Table 5: *Walmart's Potential Transition Risk Examples*
Source: Walmart's Climate Change Report

Potential Transition Risks				
Regulation and Legislation	**Technology**	**Legal**	**Market**	**Reputation**
Changes to carbon pricing regimes	Advances in fossil fuel production adversely affecting the economics of emission-reduction initiatives	City or state-level regulations making compliance more complex and costly	Changes in energy and commodity prices resulting in higher costs	Customer perception of climate issues and Walmart's climate action
State and federal level energy targets and requirements	Changes in low-carbon technology and manufacturing that causes existing assets to decrease in value	Climate-related extreme behaviours, such as looting, harm to employees or customers and shareholders	Changes in refrigerant pricing and supply volumes affecting costs and availability	Stakeholder perception of Walmart's response to climate-related crisis
Changes to HFC refrigerant regulations	Advances in low-carbon and renewable energy generation making existing long-term power purchase agreements less valuable in comparison		Changes in consumer demand for low-carbon products and services	Stakeholder perception of Walmart's engagement in climate-related policies, affecting operating licenses

26 Find more details here.

Potential Transition Risks				
Regulation and Legislation	**Technology**	**Legal**	**Market**	**Reputation**
Policy, standards and incentives associated with increasing usage of zero emissions vehicles and infrastructure.			Changes in demand for gasoline and automotive replacement parts due to shifts in the transportation technology mix	Perception of Walmart's climate action, affecting its ability to recruit and retain talent
Changes to energy and water efficiency standards for buildings and equipment			Prolonged climate-related events affecting macroeconomic conditions	
Changes to subsidies and incentives related to demand-side energy management and renewable energy generation			Changes in investment preference toward companies with leading environmental and emissions performance	
Introduction of product taxes, labelling regulations, and design standards for carbon- or water-intensive product categories				

At Planet Tracker, we quantified the potential impact of anticipated CPMs on Walmart's forthcoming GHG emissions. To carry out our calculations, we utilised the Inevitable Policy Response (IPR) carbon pricing for 2030[27] and applied it to Walmart's Scope 1, 2 and Scope 3 emissions. Employing geographic origin weighting for Scope 1 and 2 emissions over the last three years, we projected a future weighted average price of USD 62 per TCO_2e.

Without further mitigation, the cumulative financial effect of projected Scope 1 and 2 emissions (15,603 KTCO2e by 2030) would reach USD 968 million, corresponding to 4.3% of the company's current five-year average annual operating profit.

Evolving policies, such as Carbon Border Adjustment Mechanisms[28], introduce the possibility of impacts on Walmart's operations through Scope 3 emissions. Thus, we have also assessed the potential financial ramifications of CPMs on Walmart's Scope 3 emissions. Given that an 80% carbon cost absorption was assigned to Food, Beverages, Personal, and Home Care manufacturers[29] in prior evaluations, it is reasonable to anticipate a carbon cost transfer to retailers within a range of 0% to a maximum of 20%. However, a 20% absorption scenario seems improbable as it implies no cost absorption from manufacturers' suppliers or retailers' customers. Consequently, to gauge these financial implications, we considered an intermediate absorption of 10% for Walmart's Scope 3 emissions potential costs.

27 The Inevitable Policy Response to Climate Change (2021)
28 Take as an example the EU: New regulation taxing produce coming from countries with a lower carbon tax.
29 As a standard practice in the industry.

By employing a revenue geographic origin weighting of the last three years, we estimated a future weighted average price of USD 64 per TCO_2e[30] for its Scope 3 emissions. Based on the aforementioned 10% absorption, the projected 2030 Scope 3 emissions of 697,284 $KTCO_2e$, and IPR pricing, Walmart could face cost increases of USD 4.5 billion annually over the next decade.

This amount equates to approximately 20.1% of its current five-year average annual operating profit. For enhanced clarity, these findings are outlined in Table 6. They underscore the substantial Transition risks linked to potential CPMs, serving as a caution to both the company and its investors.

Table 6: *External Policy Drivers – Summary of Quantified Transition Risks by 2030; Source: Walmart's Climate Change CDP Answers 2022; IPR; Planet Tracker Calculations.*

Value Chain	Implied Price per TCO_2e by 2030	Expected $KTCO_2e$ by 2030	Likelihood of absorption	Probabilistic Financial Impact	% historic annual operating income[31]
Scope 1 and 2	USD 62	15,603	100%	USD 968 million	4.3%
Scope 3	USD 64	697,284	10%	USD 4,472 million	20.1%

Physical Impact Drivers

To assess the physical impacts, Walmart uses the Representative Concentration Pathway (RCP) 8.5, an IPCC-adopted GHG concentration scenario that assumes no further decarbonisation[32]. This evaluation encompasses the direct effects on Walmart's physical assets including retail stores, facilities, supply chain and community markets.

However, Walmart highlights the limitations of this analysis, cautioning against using it for predicting financial or operational consequences. According to the company, the improbable nature of the RCP 8.5 scenario renders it unsuitable for materiality determinations. Instead, Walmart views this assessment as a valuable resource for understanding the relative impacts of diverse climate effects, thereby informing its mitigation and adaptation strategies.

30 While Scope 3 Upstream emissions CPMs should be linked to supplier countries, in the absence of such data, revenue origin is a sensible alternative – especially since the new carbon border regulation aims on taxing produce coming from countries with a lower carbon tax.

31 Historic annual operating income refers to Walmart's annual average of the operating income from 2017 to 2021 (i.e., 5 years).

32 This approach serves as an indicator of the inherent/unmitigated risk of climate change under a business-as-usual scenario.

Impact on Retail Stores & Facilities

Walmart's physical risk assessment identifies potential variables affecting facilities over the next three decades, notably:

a. Flooding and extreme storms, posing risks to buildings and inventory.
b. Temperature shifts, driving increased heating and cooling expenditures in two-thirds of Walmart locations by 2030 and 80% by 2050, as indicated in Figure 8.

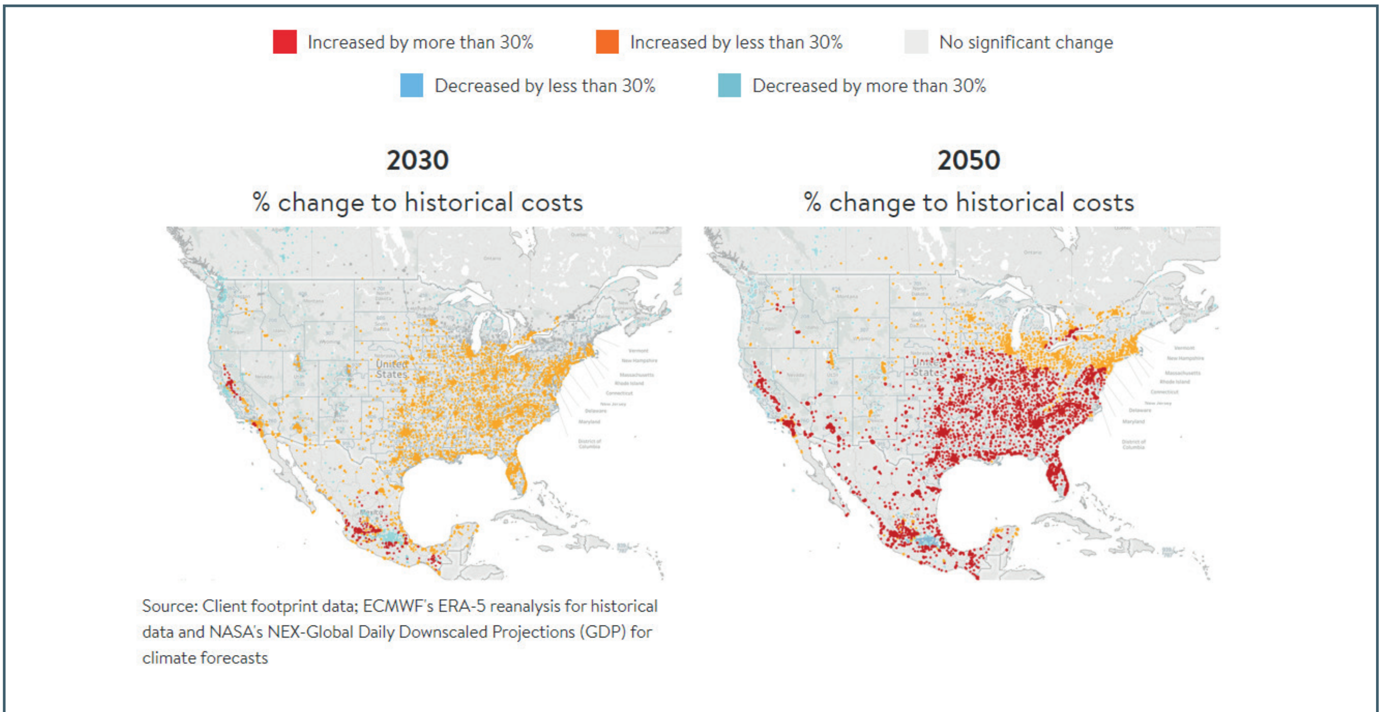


Figure 8: *Predicted Changes Historical Location Heating and Cooling Costs. Source: Walmart's Climate Change Report.*

Supply Chain Impacts

In assessing its supply chain, Walmart identified that climate change's influence on weather patterns would lead to heightened heat waves, heavy rainfall and droughts by 2050. These shifts are likely to impact the production, distribution and, in select instances, the viability of food and other consumer goods. The company analysed its climate exposure across 25 critical commodities within its operations.

For the 11 commodities facing the most pronounced climate impact, Walmart evaluated three factors: land suitability, farming conditions for animal products and heat stress for individuals. The analysis revealed that certain commodities like coffee, cocoa and cotton could encounter significant challenges due to future climate effects. Conversely, commodities such as avocados, animal feed, milk, oranges and rice may experience comparatively lesser effects. However, the financial implications of potential cost escalation stemming from scarcity in affected commodities were not disclosed by the company.

Market Impacts

Walmart extended its assessment to forecast potential climate-related impacts on its U.S. store communities, considering flooding, extreme wind, and heat. The company's analysis indicates that roughly 50% of Walmart's current U.S. community coverage might confront substantial, lasting disruption by 2050. Such conditions could lead to population relocation, triggering challenges across physical, financial and emotional well-being for customers and associates. Such circumstances will necessitate adjustments to Walmart's stores and distribution network. Moreover, economic downturns following hurricanes could impact community prosperity, potentially leading to a 230% increase in household power costs in vulnerable U.S. counties, as per the company's model. However, Walmart refrains from revealing any potential revenue impacts related to the exposed facilities.

In conclusion, while addressing its identified Climate Transition and Physical risks Walmart does not disclose any monetary impacts associated with these risks. The company argues model limitations and the complexity of relying on broad supplier and customer estimates as reasons. This non-quantification may potentially leave investors and lenders unaware of the magnitude of potential financial consequences linked to Walmart's Climate Transition and Climate Change impacts. Additionally, gauging whether the company underestimates these risks proves challenging due to the absence of public disclosure on their model outputs.

RISK MANAGEMENT

According to the company, climate risk management is an integral part of Walmart's annual Enterprise Risk Management (ERM) process, encompassing strategic, operational, reputational, financial, regulatory and compliance risks.

This process involves developing mitigation plans to address critical risks while continuously adapting to ongoing or emerging challenges through strategic planning. However, the company seems to keep most of the modelled data private.

Transition Risk Management

Walmart outlines a range of strategies to manage the Transition Risk examples previously mentioned. These strategies are consolidated in Table 7.

Table 7: *Walmart's Approaches to Managing Potential Transition Risk*
Source: Walmart's Climate Change Report

Approaches to Managing Transition Risks				
Regulation and Legislation	**Technology**	**Legal**	**Market**	**Reputation**
Policy integration into business and financial planning	Monitoring technology trends and forecast scenarios	Monitoring and assessing regulations and legal risks on an ongoing basis	Monitoring market trends	Monitoring customer, investor and stakeholder sentiment via digital and traditional media engagement
Engagement in stakeholder forums associated with regulatory processes and rulemaking	Building flexibility into infrastructure changes	Advocating for science-based, environmentally and economically effective federal-level climate policy	Emission and energy reduction initiatives; energy efficiency, renewables, phasing out of HFC refrigerants, transitioning to zero-emission vehicles	Engaging regularly with stakeholders to address their perspectives, and build awareness regarding climate strategy in communications and marketing initiatives
Creation of policy principles to assess and endorse position statements developed by external partners	Leasing assets rather than investing directly		Scenario modelling as part of energy/emissions opex and capex planning	Continuously improving Walmart's capabilities in climate mitigation and adaptation
Emissions reduction initiatives; energy efficiency, renewables, phasing out of HFC refrigerants, transitioning to zero-emission vehicles, Project Gigaton	Advocating for technology-neutral emission reduction policies		Closely monitoring consumer trends	
			Report climate and environmental performance to investors	

Once again, however, these initiatives are not quantified in terms of expected impact or required investment.[33] Metrics primarily revolve around Walmart's climate change mitigation strategy, specifically tied to achieving the following targets:

1. Achieve carbon neutrality across global operations (Scopes 1 & 2) by 2040.

2. Contribute to reducing or avoiding one billion metric tons (a gigaton) of GHG emissions by 2030 through supplier engagement targeting key Scope 3 categories.

For the first goal, the company has proposed five key workstreams:

1. Renewable energy: Pursuing onsite generation, power purchase agreements, utility partnerships, policy advocacy and clean energy investments.

2. Energy efficiency: Focusing on efficient energy management, facility retrofits and innovative facility design.

3. Transportation: Electrifying and enhancing the fleet, aiming for net-zero emissions from all vehicles, including long-haul trucks.

4. Stationary fuels: Decreasing dependence on these fuels via enhanced efficiency, transition to cleaner alternatives and equipment electrification.

5. Onsite refrigerants: Improving efficiency through leak management, low GWP system implementation and scaling low-GWP technology adoption.

For the second goal, Walmart supports suppliers in setting emissions goals, initiating action and reporting outcomes on emission reduction and avoidance efforts. The Gigaton initiative provides resources including guidance on goal-setting, reporting, workshops and best practice playbooks. It promotes supplier action across six critical areas: energy use, nature, waste, packaging, transportation and product use and design. These pillars are interlinked with Walmart's Scope 3 activities, illustrated in Figure 9.

33 According to Walmart's representatives "disclosure of quantitative information could allow competitors and others to back into sensitive business information".

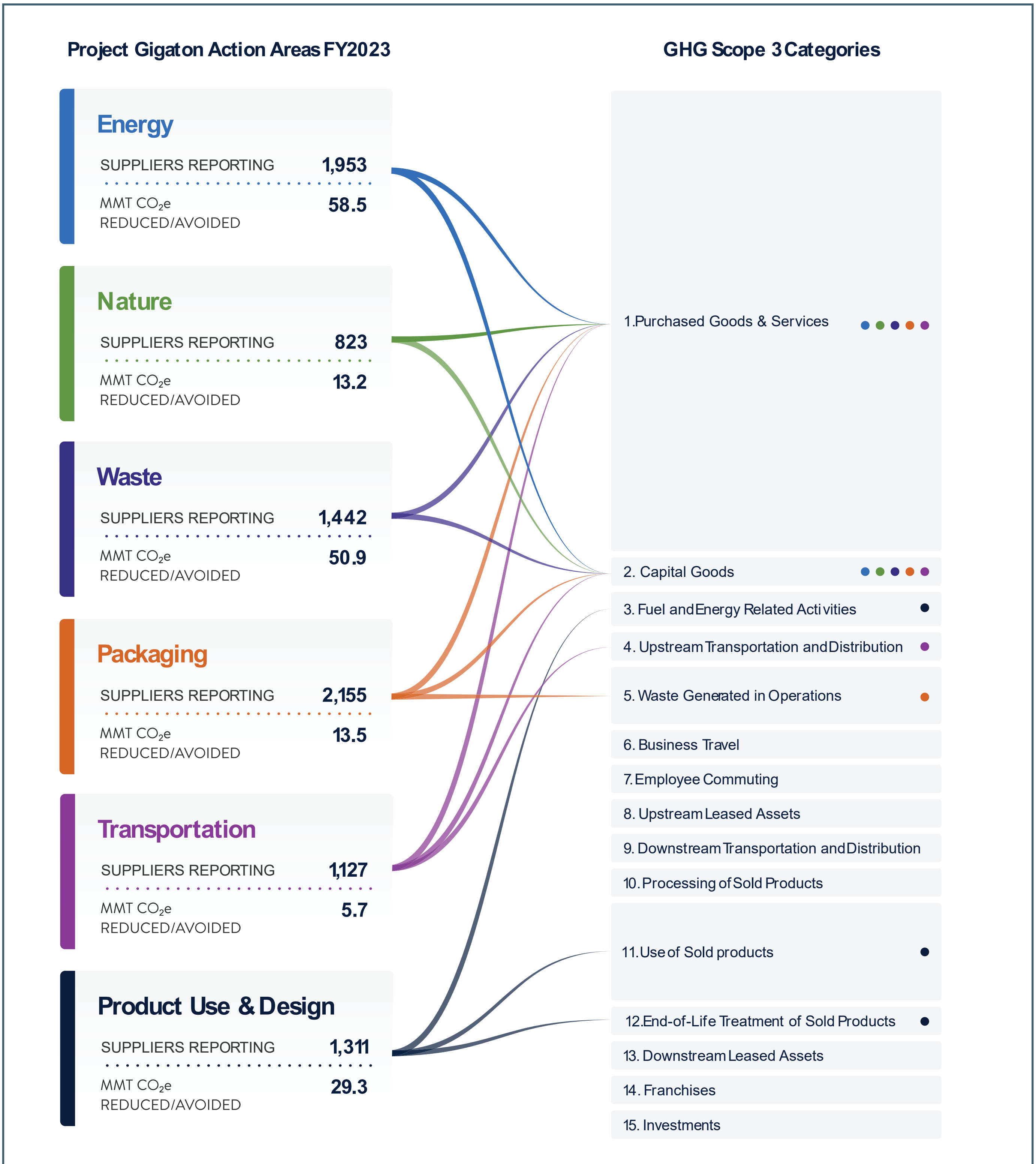


Figure 9: *How Project Gigaton Actions Relate to Walmart's Scope 3 Emissions Footprint. Source: Walmart's Climate Change Report.*

Physical Risk Management

In addition to the mentioned mitigation projects, Walmart outlines a set of adaptation measures for Physical Risk management. These measures involve adapting operations and sourcing practices to enhance resilience in the face of climate-related challenges like warming, drought and extreme weather events. Key initiatives include:

A. Disaster Resilience

- **Weather Risk Management:** Leveraging experienced associates and past weather data, Walmart's Global Emergency Management team assesses risks, overseeing preparation, response and recovery efforts. As an example, generators are deployed for power during emergencies, enhancing facility resilience.

- **Facility Resilience and Power Management:** Investment in permanent and mobile generators ensures uninterrupted power during storms, reducing downtime and food loss-illustrated by over 8,314 hours of powered operation in 2022

- **Community Preparedness and Engagement:** Philanthropic initiatives, like a USD 3 million grant to the Walmart Foundation, aid vulnerable communities in disaster readiness. Stakeholder engagement and partnerships build capacity and resilience, especially within BIPOC[34] -led organisations.

B. Energy-Efficient Operations

- **Cost Control and Emission Mitigation:** Prioritising energy efficiency in new store designs and upgrading equipment with higher-efficiency technology to manage costs in a warming climate.

- **Smart Energy Monitoring:** Employing technology like smart meters to optimize building energy use.

C. Dependable Sourcing

- **Managing Daily Disruptions:** Building upstream capacity, diversifying sourcing regions and exploring innovative technology to prevent disruptions

- **Country of Origin Strategies:** Collaborating with merchants to establish a resilient global supply network while leveraging locally sourced products

- **Product Supply Chain Transformation:** Setting sourcing requirements, engaging suppliers in best practices and supporting industry collaboration to ensure resilient agricultural supply chains.

Despite significant efforts in identifying Transition and Physical risks, Walmart's presentation mainly offers a qualitative and rather theoretical assessment of these.[35] Notably, quantified financial impacts, operational expenditure (opex) and capital expenditure (capex) metrics related to Climate Transition and Change are absent. This lack of information creates uncertainty about the alignment of actions with the Paris Agreement's goals.

In summary, the company's risk analysis does not publicly disclose adequate evidence to alter the business-as-usual trajectory of historical emissions by 2030.

34 **BIPOC** stands for Black, Indigenous and people of colour. The intention behind the term is to acknowledge that not all people of colour (POC) face the same levels of injustice. By listing out Black and Indigenous, the term emphasises that people from these specific communities face different and often more severe, forms of injustice and oppression

35 According to the company's representatives these "disclosures are intended to provide stakeholders with sufficient information to conclude that Walmart understands its risks." Also, according to the company, "quantified potential impacts to Walmart's business under a RCP 8.5 scenario would not be decision-useful as that scenario is unlikely and the results are not reliable or stress-tested for use in financial modelling."

Strategic Assessment

CAPITAL ALIGNMENT

As mentioned earlier, in 2020 Walmart elevated its carbon ambition to global neutrality in operations by 2040. This commitment includes the interim goals endorsed by SBTi of reducing Scopes 1 and 2 GHG emissions by 35% by 2025 and 65% by 2030 from the 2015 base year, without relying on carbon offsets. Accordingly, five key workstreams were proposed: renewable energy, energy efficiency, net zero transportation, stationary fuels removal and onsite refrigerant efficiency.

Comparing SBTi's recommended Scope 1 and 2 GHG emissions level (6,972 $KTCO_2e$) with Planet Tracker's extrapolated trend (15,603 $KTCO_2e$) reveals an 8,631 $KTCO_2e$ gap by 2030.

If only operating emissions are considered (Scope 1 and 2), Walmart would align with a 2°C warming scenario by 2030, as elaborated in the following section (Table 9).

However, in September 2021, Walmart issued a 10-year, USD 2 billion green bond under its Green Financing Framework[36]. This framework outlines eligible spending categories, like renewable energy, sustainable transport and circular economy initiatives. In 2020 and 2021[37], around 55% (USD 1.1 billion) was allocated, primarily to U.S. projects - see Table 8.[38]

***Table 8:** Walmart's Green Bond Allocation by Eligibility Category*
Source: Walmart's 2021 Green Bond Impact Report

Category	Amount (in USD million)	Description
Renewable Energy	377.9	Projects including solar and wind power purchase agreements, solar and wind virtual power purchase agreements and onsite solar and wind.
High-Performance Buildings	338.3	Projects including efficient lighting and HVAC upgrades, sustainable building materials and refrigeration retrofitting.
Zero Waste and Circular Economy	307.5	Projects including general recycling of cardboard, organics and other materials.
Sustainable Transport	66.5	Hydrogen forklifts.
Habitat Restoration and Conservation	6.9	Through Walmart's Acres for America program.
Water Stewardship	3.0	Projects including water treatment plants and irrigation monitoring.

36 Find more details here.
37 While the Green Bond allows for a look-back period of three years pre-issuance (beginning September 2018), Walmart's current allocations are limited to the period beginning with Walmart's fiscal year (FY) 2021, which started on February 1, 2020, through the end of FY2022, which ended on January 31, 2022.
38 Please be aware that .at the time this paper was released Walmart's Green Bond had been fully allocated. Find more details here

Although specific emissions reductions for each workstream are not disclosed,[39] Walmart revealed that Renewable Energy projects yielded savings of 772 KTCO_2e in 2020 and 1,968 KTCO_2e in 2021. This suggests that Walmart's green bond allocation could potentially close the 8,631 KTCO_2e gap, helping its move towards carbon neutrality by 2040.

Moreover, Walmart pledged to reduce or avoid one billion tonnes of CO_2e by 2030, linked to its upstream and downstream activities. While specific investment details are absent, the gap between Scope 3 SBTs and the extrapolated emissions trend appears challenging to address independently. Hence, Walmart's collaborative approach seems prudent, as detailed further in the upcoming section.

TRANSITION APPRAISAL

Planet Tracker analysed Walmart's Climate Transition strategy, evaluating its GHG emissions from 2019 to 2021 and future alignment with the Paris Agreement. As mentioned, Walmart's primary objective is carbon neutrality by 2040, while its broader goals rely on collaboration with numerous suppliers and manufacturers.

To assess Walmart's commitment to bridging its transition gap, the company's Policies, Governance and Risk Management were reviewed. Walmart's customer engagement exhibits limitations, while its supplier engagement seems highly ambitious, offering a broad range of resources to aid suppliers in their climate transition journey. However, engagement efficiency is questionable, given the double-digit growth in supplier emissions over the last three years (29% increase in upstream Scope 3 emissions from 2019 to 2021). Notably, Walmart's influence on Climate Policy is also commendable, pushing the industry towards more ambitious climate goals.

Another gap in Walmart's transition strategy pertains to Climate Risk Assessment and Management, lacking quantified financial impacts, opex and capex metrics for credibly tackling its Climate Transition and Climate Change risks.

Lastly, our Temperature Alignment estimation involved comparing Walmart's projected emissions and recommended emissions with the global CO_2e budget by 2030[40]. This model evaluates alignment in degrees Celsius, considering Scope 1 and 2 trends alone, with the green bond investments added and also considering Scope 3 – see Table 9.

39 Company representatives highlighted that "while Walmart has not made specific disclosures about its capital planning and allocation with respect to climate [...] information regarding Walmart's climate-related plans [is] on par with information [the company provides] on other investments".

40 As stated by IPCC (p. 95) – 'Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development'.

Table 9: *Walmart's Temperature Alignment - Estimate of Climate Sensitivity. Source: Planet Tracker Calculations.*

Variables	Walmart's S1 & S2 Trend	Walmart's S1 & S2 Trend + Investment	Walmart's full value chain + Investment
Suggested KTCO$_2$e budget (SBT)	6,972	6,972	106,408
Expected KTCO$_2$e emissions (2030)	15,603	6,972	704,256
Target overshoot (undershoot)	124%	0%	562%
SBT temperature (°C)	1.5	1.5	1.5
Global KTCO2e remaining budget (2030)	30,000,000	30,000,000	30,000,000
Walmart's Over/(Undershoot) in KTCO$_2$e	37,138,130	0	168,552,808
Baseline Temperature (°C)	1.1	1.1	1.1
Warming Ratio[41]	1.33333E-08	1.33333E-08	1.33333E-08
Walmart's Temperature Alignment (°C)[42]	2.0	1.5	3.7

In summary, Walmart's report highlights diverse mitigation initiatives, succeeding in the mitigation of operating (i.e., Scope 1 and 2) GHG emissions. Considering these alone, the company would align with a 2°C scenario and the green bond investment could push its alignment towards 1.5°C. However, despite the broad Scope 3 engagement, consistent mitigation is lacking and, even with the Scope 1 and 2 disclosed mitigation investment, the company would potentially push that 2ºC historical alignment towards a BAU C global warming scenario by 2030 when Scope 3 is included.

Planet Tracker expects Walmart to align with a 2°C pathway by 2030 when the operating emissions are considered[43].

41 The warming ratio is defined as the difference between the SBT recommended temperature (1.5°C) and the actual temperature baseline (1.1°C) divided by the global remaining KTCO$_2$e budget until 2030.

42 The temperature alignment number is the sum between the SBT recommended temperature (1.5°C) and the product of the warming ratio and the company's over/(undershoot) in KTCO$_2$e.

43 Based on the data accessed by Planet Tracker until July 2023.

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Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries.Our mission is to create significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

PLANET TRACKER'S CLIMATE TRANSITION ANALYSIS – FOOD SYSTEM COMPANIES

As part of its Food & Land Use programme, Planet Tracker is examining the transition plans of the food system (Consumer Goods) companies covered by the Climate Action 100+ list (https://www.climateaction100.org/whos-involved/companies). Our goal is to provide investors with the key information and analysis they need to be able to hold food system companies to account for the quality of their climate transition plans and their execution against those plans, and to encourage them to use this information to engage effectively with these companies with the ultimate aim of driving the sustainable transformation of the global food system.

ACKNOWLEDGEMENTS

Lead Author: **Ion Visinovschi,** Research Analyst, Planet Tracker
Reviewers: **Sarah Clark-Hamel**, Senior Manager of Climate Action 100+ at Ceres Inc.;
Nako Kobayashi, Manager of Food Emissions 50 at Ceres Inc.

WITH THANKS TO OUR FUNDERS

climateworks FOUNDATION

Suggested citation: Visinovschi I., Walmart Climate Transition Analysis, Planet Tracker (2023)

For further information please contact: Nicole Kozlowski, Head of Engagement, Planet Tracker nicole@planet-tracker.org