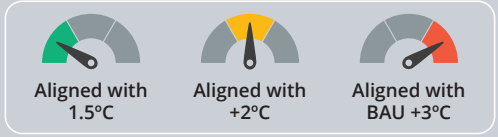
PepsiCo Inc. (PEP:US)
Climate Transition Analysis

Climate Action 100+ Focus Company

Overall Assessment

According to Planet Tracker's analysis, PepsiCo is on track for a 2°C scenario by 2030.

PepsiCo faces a significant challenge in aligning with a 1.5°C pathway, specifically in relation to the mitigation of its indirect emissions. Approximately 90% of the company's projected GhG emissions in 2030 are expected to originate from Scope 3 activities. Extrapolating historical trends, if future emissions are not mitigated it is likely that PepsiCo will fall short of the emissions targets recommended by SBTi[1] by 58%, primarily due to Upstream Scope 3 emissions. The company has demonstrated a strong commitment to addressing its primary sources of GhG emissions through active engagement with suppliers and customers, as well as with climate policymakers aligned with a 1.5°C pathway. The company's sustainability goals are closely monitored by the Board of Directors and Senior Leadership. However, the extent to which management compensation is linked to these goals is unclear. Moreover, while PepsiCo is taking significant steps to address its environmental impact, the current capital allocation and resulting emission mitigation, as disclosed by the company, may not be sufficient to close the gap between its emissions trend and the SBTs level. This calls into question PepsiCo's ability to achieve its SBTs by 2030 and Net Zero by 2040.



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

[1] Science Based Target Initiative

Climate Alignment

- In 2030, it is estimated that over 90% of PepsiCo's total GhG emissions will originate from Scope 3 activities – with 75% stemming from Upstream activities and over 15% from Downstream activities.
- By 2030, the gap of 58% between the total GhG emissions recommended by the SBTi (34,831 $KTCO_2e$) and the extrapolated trend calculated by Planet Tracker (54,981 $KTCO_2e$) will primarily come from Upstream Scope 3 emissions, which, if left unmitigated, will be 68% higher than the levels recommended by SBTi.

Policy and Governance

- PepsiCo actively engages with its suppliers and customers to address its primary sources of GhG emissions. Additionally, the company has demonstrated a strong engagement with climate policymakers aligned with a 1.5°C pathway.
- PepsiCo's sustainable goals are closely overseen by its Board of Directors and Senior Leadership, however, it is unclear to what extent management compensation is linked to environmental KPIs.

Risk Analysis

- The estimated financial impact of climate-related risks and opportunities is projected to reach approximately 42% of the company's three-year average annual operating profit within the next decade, with 23% of this impact stemming from potential Carbon Pricing Mechanisms (CPMs) linked to Scope 3 emissions.
- While PepsiCo addresses the risks and opportunities associated with climate-related physical impacts, it currently does not assess the material financial impact resulting from potential CPMs linked to Scope 3 emissions.

Strategy Assessment

- PepsiCo currently lacks a Net Zero Roadmap, but has launched the PepsiCo Positive (Pep+) initiative as a company-wide strategy alternative to address its environmental impact.
- The disclosed investment would only tackle a quarter of the gap between its trend of emissions and the SBT recommended level, making unclear the company's position to achieve Net Zero by its target date of 2040.

Planet Tracker

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Company Overview

PepsiCo Inc. (PEP:US), a leading player in the global convenience foods and beverages industry, operates in over 200 countries worldwide. The company maintains a dominant position in the savoury snacks market and is the second-largest non-alcoholic beverage provider globally, second to The Coca-Cola Company (KO:US)[2].

Over the past three years (2019-2021), **convenience foods have consistently accounted for 55% of PepsiCo's total annual revenue**, with beverages making up the remainder. Additionally, from 2019 to 2021, the company recorded an average total revenue of USD 72.3 billion and an average total operating profit of USD 10.5 billion, resulting in an average gross profit margin of 14.5%.

Of note, **five countries generated 74% of PepsiCo's total revenue and 79% of its trading operating profit** over the same period, with the United States alone accounting for 57% and 64%, respectively – see Figure 1.

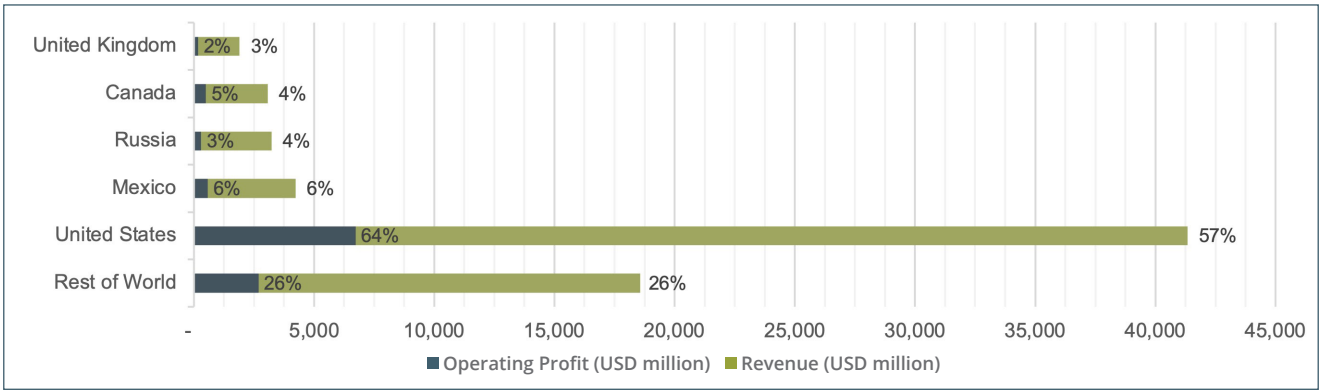

Figure 1: Operating Profit[3] and Revenue – Breakdown by Geography (3Y Avg.). Source: PepsiCo Inc.10K Reports 2019–2021.

Similarly, the top **five countries in terms of invested capital** (defined as "long-lived assets"[4]) for PepsiCo **accounted for 74% of the total**, with the United States leading again with 58% – see Figure 2.

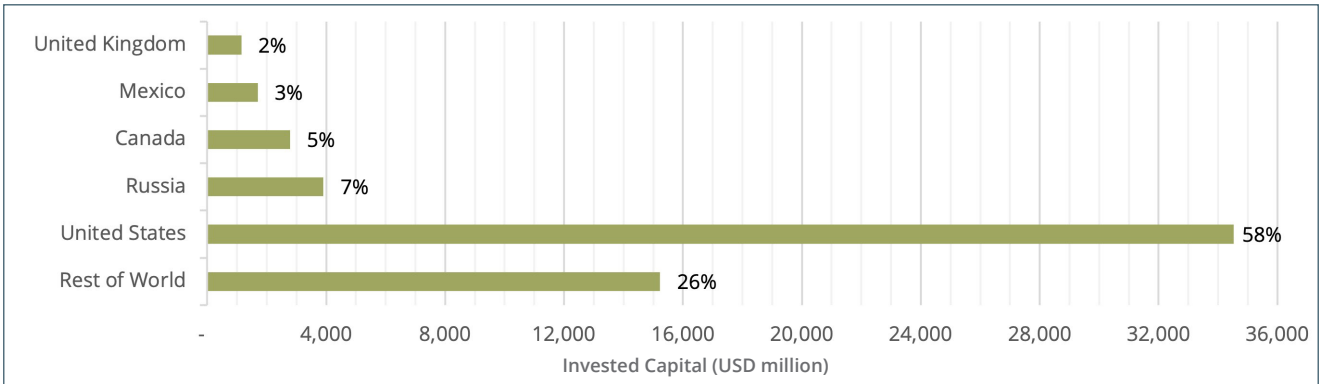

Figure 2: Invested Capital – Breakdown by Geography (3Y Avg.). Source: PepsiCo Inc.10K Reports 2019–2021.

[2] Find the full Climate Transition Report on The Coca-Cola Company here: https://planet-tracker.org/wp-content/uploads/2022/12/CTA-Coca-Cola.pdf

[3] To derive the operating profit per country the 'corporate unallocated expenses' were assigned pro rata to each region, i.e., APAC, AMESA, Europe, Latin American and North America, and subsequently, the gross margin of each region was applied to the revenue per country based on geographical location.

[4] Long-lived assets represent property, plant and equipment, indefinite-lived intangible assets, amortizable intangible assets and investments in noncontrolled affiliates. Investments in noncontrolled affiliates are evaluated for impairment upon a significant change in the operating or macroeconomic environment. These assets are reported in the country where they are primarily used.

With regards to the company's business activities, namely the sale of convenience foods and non-alcoholic beverages, the **key natural commodities to which PepsiCo is exposed**, as disclosed by the company, **include corn, palm oil, potatoes, sugar, and wheat**.

However, it should be observed that **the level of granularity in this disclosure is low**, as the company only provides a wide range of estimates for all key commodities – see Table 1.

Table 1: % of Revenue Dependent on Natural Commodities. Source: PepsiCo's Forests and Water CDP Reports 2020-2022.

	2018	2019	2020
Corn	40% to 60%	40% to 60%	40% to 60%
Palm oil	40% to 60%	40% to 60%	40% to 60%
Potatoes	40% to 60%	40% to 60%	40% to 60%
Sugar	40% to 60%	40% to 60%	40% to 60%
Wheat	40% to 60%	40% to 60%	40% to 60%

Additionally, with regard to the origin of these commodities, **PepsiCo only disclosed country volume data for palm oil** – see Table 2.

Table 2: Natural Commodities Sourcing Origin and Volume (2021). Source: PepsiCo's Forests CDP Report 2022.

	Colombia	Ecuador	Guatemala	Honduras	Indonesia	Malaysia	Peru	Thailand	Other
Palm oil	15.2%	1.0%	1.2%	3.5%	48.2%	18.9%	1.6%	3.6%	7.0%

Based on this information, it can be inferred that **between a third and half of PepsiCo's revenue is dependent on palm oil sourced from three countries**[5]: **Indonesia**, with a revenue exposure between 19% and 29%, **Malaysia**, with an exposure between 8% and 11%, and **Colombia**, with an exposure between 6% and 9%.

In summary, based on the geographic source of revenue, location of invested capital, and location of key suppliers, it is clear that **PepsiCo is heavily dependent on the United States and Indonesia**. As such, the company is primarily subject to these countries' climate risks and related policies.

[5] Please note that 'dependency' refers to the proportion of products measured by revenue that use a particular commodity (so percentages will sum to more than 100% because products depend upon more than one commodity).

Climate Alignment

EMISSIONS INVENTORY[6]

From 2019 to 2021, PepsiCo's greenhouse gas (GhG) emissions averaged a total of 59,764 $KTCO_2e$, compared to a low of 55,574 $KTCO_2e$ in 2019 and a high of 63,817 $KTCO_2e$ in 2021 or an annual average increase of 7.2%.

Of the total of 63,817 $KTCO_2e$ emissions disclosed in 2021, 5.6% came from Scope 1, 2.8% from Scope 2 (location-based) and the majority, 91.6%, from Scope 3. With 69.8% coming from Scope 3 upstream activities[7] and 21.7% from Scope 3 downstream activities[8], the top three sources were "Purchased Goods" (61.6%), "Distribution" (9.8%) and "Consumption" (6.6%) – see Figure 3.

Given that these three categories account for 78% of the company's total emissions in 2021, going forward, these should be at the centre of PepsiCo's ambitions.

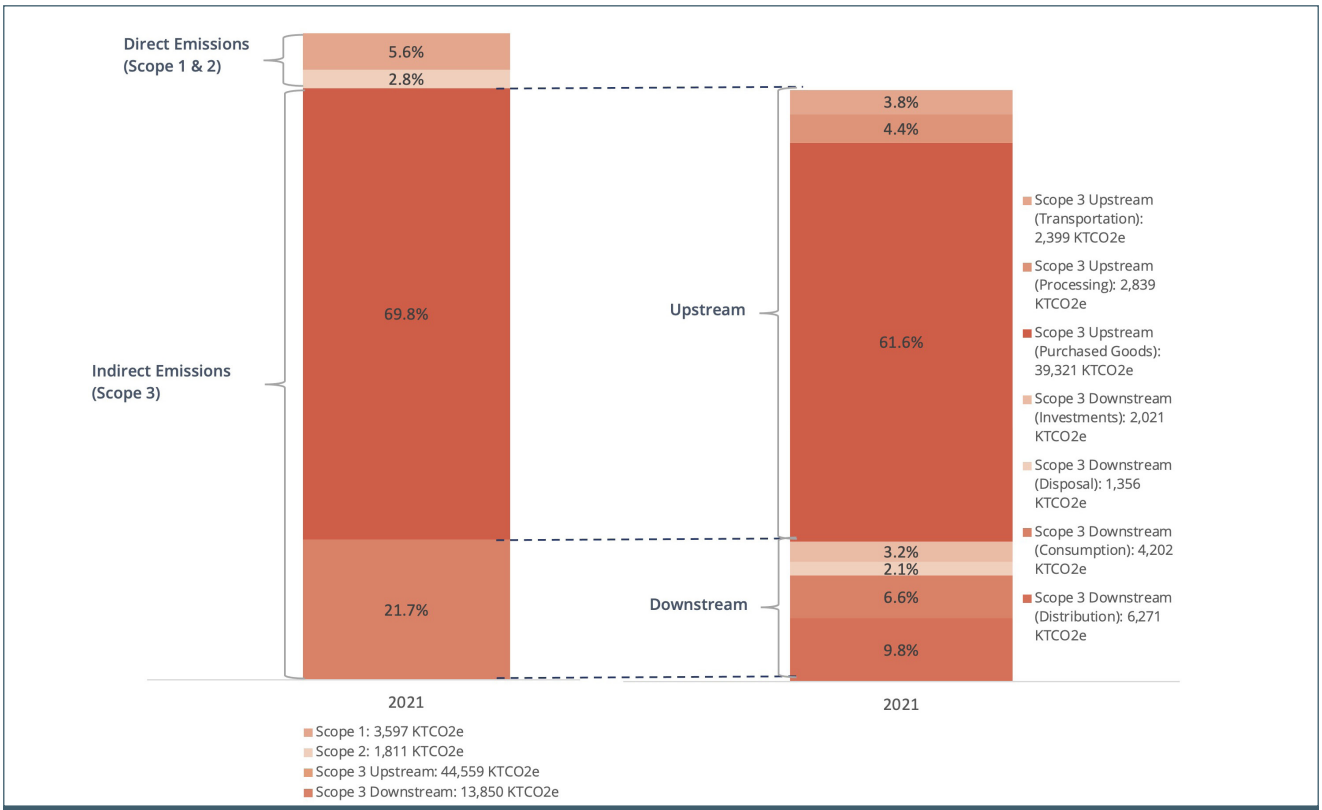

Figure 3: Value Chain GhG Emissions (2021) – Percentage Breakdown by Scope. Source: PepsiCo's Climate Change CDP Answers 2022.

[6] PepsiCo's GhG emissions profile is more similar to other food manufacturers such as Nestlé and Danone rather than the main beverage producer, Coca-Cola where the majority of Scope 3 emissions come from Downstream activities – for more details read the full report here.

[7] Scope 3 upstream emissions include: (1) Purchased Goods – accounting for the emissions from agricultural sourcing, packaging materials sourcing, non-product related sourcing as well as co-manufacturing services; (2) Processing – including the emissions from "Fuel and Energy Activities" not covered in Scope 1 and 2, emissions from "Waste from Operations" and "Capital Goods" where capital equipment spending is used by PepsiCo as a proxy for emissions calculations; (3) Transportation – covering emissions from "Inbound Transport" and "Employee Commuting".

[8] Scope 3 downstream emissions include: (1) Investment – accounting for the emissions from the "Franchises" of bottling operations and emissions from "Joint Venture" operations; (2) Disposal – including emissions from the "End of Life of Sold Products"; (3) Consumption – covering emissions from the "Processing of Sold Products" and "Other" which stands for emissions from complementary products used together with PepsiCo's products – primarily milk used with their oat products; (4) Distribution – accounting for the emissions linked to downstream "Transportation and Distribution" and "Business Travel".

EXTERNALITIES TRENDS AND TARGETS

In the last three years (2019-2021), PepsiCo's GhG emissions increased at an average annual rate of 7.2%. This increase breaks down into an absolute increase of 1% in Scope 1 emissions, 16% in Scope 2 (location-based) emissions, 23% in Scope 3 upstream emissions and an absolute decrease of 4% in Scope 3 downstream emissions – see Figure 4.

Figure 4: CO_2e Evolution in the last three years by Scope. Source: PepsiCo's Climate Change CDP Answers 2020–2022 and Planet Tracker Calculations.

Despite this, it is worth noting that **PepsiCo's revenue also increased at a compound annual growth rate (CAGR) of 8.78% over the same period**. Therefore, when projecting the company's historical emissions trends into the future, its financial growth should be taken into account. To do so, **we have considered a long-term revenue growth rate of 4.8% per annum**, which we believe is aligned with the company's profile as a mature business. This growth rate was derived by calculating the company's average annual growth in revenue over the past five years (2016-2021).

In order to determine the expected greenhouse gas (GhG) emissions for 2025 and 2030, we have multiplied the extrapolated revenue by the future CO_2e intensity ratios (emissions/revenue). This ratio defines the amount of GhG emissions relative to the business activity level measured by revenue. This accounts for special economic circumstances, such as the recent COVID-19 pandemic. To calculate the future CO_2e intensity ratios, we have examined the historical emissions trends from an intensity perspective. **The ratio for Scope 1, 2 and 3 downstream emissions decreased from a high of 0.29 in 2019 to a low of 0.24 in 2021, indicating an average annual decrease of 8.6% per year[9]. Meanwhile, the intensity ratio for Scope 3 upstream emissions decreased from a high of 0.65 in 2016 to a low of 0.52 in 2021, pointing to an average annual decrease of 4.5% per year[10]** – see Figure 5. It should be noted that we have considered a longer timeframe to calculate the upstream intensity ratios due to the lack of Scope 3 data disclosure from 2016 to 2018, which would make it impossible to calculate the Scope 3 upstream intensity ratio for the 2017 to 2019 period[11].

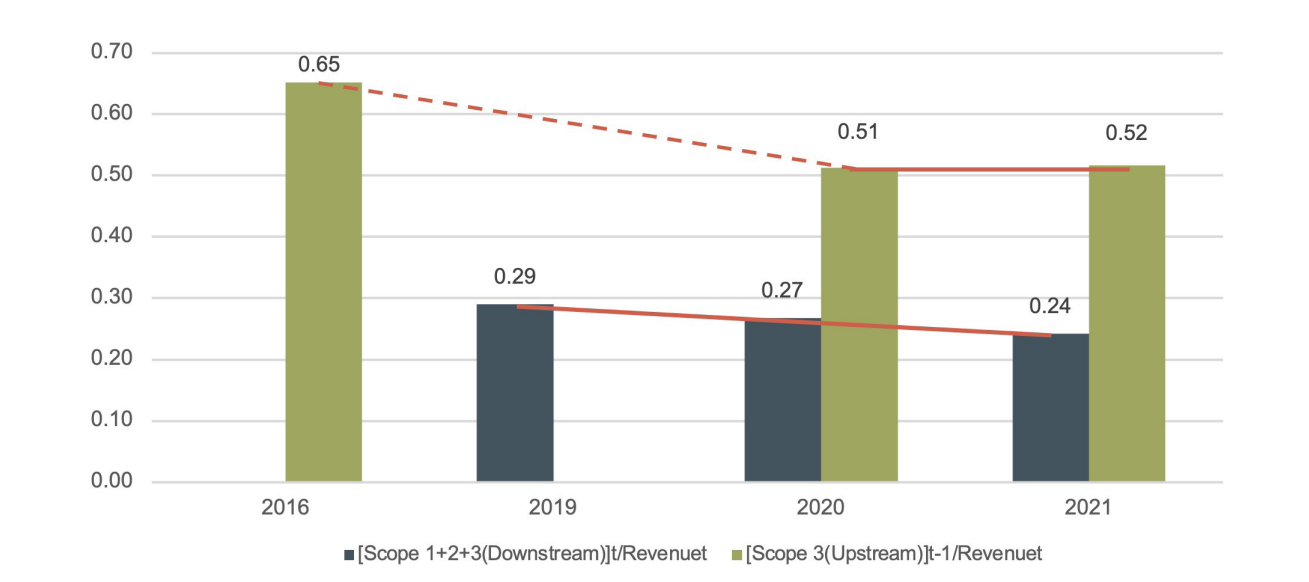

Figure 5: CO_2e Emissions Intensity Ratios – Breakdown by Scope and Year of occurrence. Source: Planet Tracker Calculations.

As previously outlined, to project PepsiCo's emissions to 2030, we are applying a simple extrapolation model that compounds forward the annual rate of change in the emissions intensity ratio and multiplies it by the expected future revenue.

Applying this model, **a yearly decrease in the emissions intensity ratio for Scope 1, 2, and 3 downstream activities of 8.6% leads to** an intensity emissions ratio of 0.11 by 2030. Multiplying this ratio by the expected revenue of USD 121.4 billion results in **a total of 13,692 $KTCO_2e$ emissions from Scope 1, 2, and 3 downstream activities by 2030**. Additionally, as a result of its annual decrease of 4.5%, **the intensity ratio of Scope 3 upstream emissions will be 0.32 by 2031**. Multiplying this ratio by the expected 2031 revenue of USD 127.3 billion **results in a total of 41,289 $KTCO_2e$ of Scope 3 upstream emissions by 2030**[6].

[9] These ratios have been calculated by dividing the $KTCO_2e$ produced in a year 't', by the firm's revenue in the same year 't'.

[10] The Scope 3 Upstream intensity ratios have been calculated by dividing the $KTCO_2e$ produced in a year 't-1', by the firm's Revenue in the year 't'. This one-year lag is employed as the Scope 3 Upstream emissions are assumed to arise in the previous year to the manufacturer's revenues (matching inputs into the business).

[11] To determine the intensity ratio for Scope 3 upstream activities in 2016, we utilized the revenue data from PepsiCo's 2016 10K report and the Scope 3 upstream emissions data from the company's 2019 Climate CDP answers, which were based on 2015 sales volumes.

In total, by 2030, the adjusted extrapolated emissions will add up to 54,981 KTCO$_2$e, with 5% belonging to Scope 1 activities, 4.7% to Scope 2, 15.3% to Scope 3 downstream and 75.1% to Scope 3 upstream – see Figure 6.

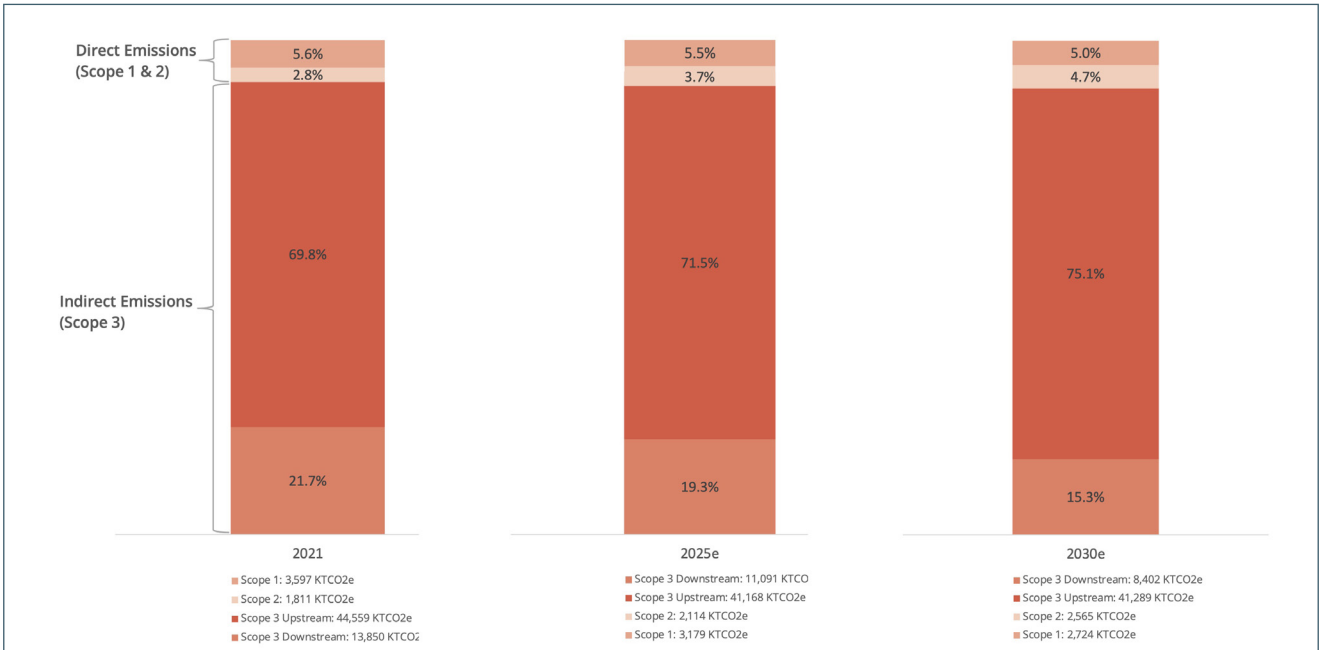

Figure 6: Value Chain GhG Emissions (2025e & 2030e) – Percentage Breakdown by Scope. Source: PepsiCo's Climate Change CDP Answers 2020–2022; Planet Tracker Calculations.

In 2016, in alignment with a 2ºC pathway, PepsiCo set Science-Based Targets (SBT) aiming to reduce its absolute emissions across its entire value chain by 20% by 2030 against a 2015 baseline. Subsequently, in 2020, the company signed the Business Ambition for 1.5ºC pledge, committing to raise its ambition towards a long-term Net Zero goal.

In 2021, PepsiCo updated its SBTs to achieve Net Zero by 2040 and align with 1.5ºC by 2030. These new targets commit the company to reduce absolute Scope 1 and 2 GhG emissions by 75% and Scope 3 GhG emissions by 40% by 2030 from a 2015 base year. It is worth mentioning that **the 2015 base year was not updated in spite of the availability of more accurate emissions in recent years** (i.e. 2019 to 2021) compared with the emissions estimates based mostly on the company's sales available for 2015.

However, **the company does update its baseline emissions on an annual basis to include/exclude Mergers and Acquisitions and divestitures data**, making its baseline comparable to the most current level of business activity[12].

[12] Due to its improved accuracy, for the calculation of Scope 3 Upstream emissions trend we use the 2015 base year data as updated in PepsiCo's CDP Climate Change response 2022.

Despite these ambitious targets, progress in terms of absolute emissions reductions has been limited from 2015 to 2021. **If 2021, emissions are used as a starting point** and compared to the level of emissions recommended by the current SBT by 2030, **Scope 1 and 2 emissions would need to decline by 74% and Scope 3 by 43% by 2030** from a 2021 baseline. Comparatively, the company's extrapolated trends for Scope 1 and 2(location-based) GhG emissions will result in an absolute reduction of 2% from 2021 to 2030, while the extrapolated emissions for Scope 3 will yield an absolute decline of 15% over the same period.

As a result, **PepsiCo's total extrapolated emissions by 2030 will be 54,981 $KTCO_2e$, or a 14% reduction compared to its 2021 level, while the SBT recommended emissions by 2030 should be 34,831 $KTCO_2e$, or a 45% reduction compared to the 2021 baseline** – see Figure 7.

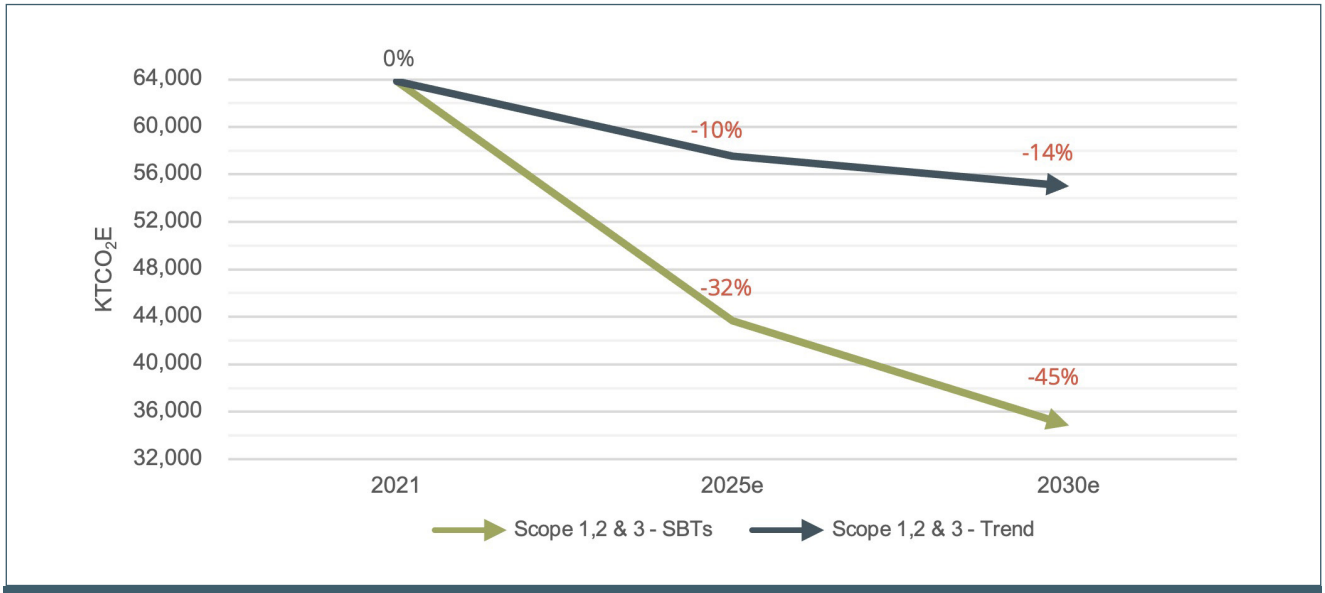

Figure 7: Future GhG Emissions – SBT vs Extrapolated Trends. Source: PepsiCo's Climate Change CDP Answers 2020–2022; Planet Tracker Calculations.

In summary, based on our calculations, **PepsiCo will miss its SBT emissions limit by 58% (54,981 $KTCO_2e$ vs 34,831 $KTCO_2e$) if additional emissions mitigation actions are not implemented**. As per our temperature sensitivity model[13], overshooting the target limit by 58% would result in an additional 0.2ºC to the theoretical 1.5ºC target.

Therefore, **according to the adjusted historical trend of GhG emissions, PepsiCo aligns with a below 2ºC scenario by 2030. Additionally, it is crucial to closely monitor the evolution of Scope 3 upstream emissions, which will overpass the SBT limit by 68% by 2030, a difference that would add 0.3ºC to the theoretical 1.5ºC target if considered individually. Concluding, PepsiCo's alignment with a 1.5ºC scenario by 2030 cannot be confirmed based on the extrapolated historical trend of GhG emissions**.

[13] Explained in the "Strategy Assessment" section.

Policy and Governance

ENGAGEMENT AND INFLUENCE

Suppliers' Engagement

PepsiCo engages with its suppliers through two main strategies: (1) Information collection to gain insight into supplier behaviour and (2) Innovation and collaboration to drive change in market behaviour.

The company's **information collection strategy covers 7% of its suppliers and 36% of its total procurement expenditure** (direct and indirect). **The carbon data collection primarily focuses on suppliers of key categories such as agriculture, packaging, and third-party logistics, which account for 50% of supplier-related Scope 3 emissions**. PepsiCo's success in addressing climate change and collecting carbon data from suppliers is evaluated based on the participation rate and average supplier score. In 2021, this engagement had a response rate of 70%, with 67% of total suppliers indicating having a target for emissions reduction.

The **innovation and collaboration strategy**, which **targets 100% of its suppliers and 100% of its total procurement expenditure**, aims to reduce the climate impact of its products and services through innovation. **In 2021, this program accounted for 2% of supplier-related Scope 3 emissions**. The Sustainable Farming Program (SFP) is the key initiative under this strategy, aimed at promoting positive social, environmental, and economic outcomes among farmers from whom the company directly sources crops such as potatoes, corn, oats, oranges, palm oil, and cane sugar. The program includes self-assessment, capacity building, and verification, and focuses on improving agricultural productivity and increasing the availability of sustainably sourced crops. In 2015, the company set a goal to sustainably source these crops by 2020, and other key ingredients such as vegetable oils by 2025.

As of 2021, the company reports that approximately 50% of key ingredients were sustainably sourced and that it has helped to spread the adoption of regenerative agriculture on over 345,000 acres, representing approximately 5% of the land used globally to grow its key crops and ingredients.

Building on this progress, in 2021, the company announced new, impact-driven goals to accelerate regenerative agriculture up to 100% of the land used and strengthen farming communities by 2030, as part of its broader PepsiCo Positive (pep+) ambition aiming to reduce over 3,000 $KTCO_2e$ by 2030.

Customers' Engagement

PepsiCo engages with its customers through two main strategies: (1) Education and information sharing and (2) Collaboration and innovation.

The **first strategy aims to educate customers** about the climate change impacts of PepsiCo's products, goods, and services. According to the company, **this program is aimed at 100% of its customers and covers approximately 7% of its supplier-related Scope 3 emissions**, as estimated by total PepsiCo Beverages North America sector packaging emissions against total Scope 3 emissions. The program aims to increase beverage container recycling rates through the provision of recycling solutions to colleges and universities, K-12 schools, high-traffic retail locations, professional sports facilities, events and other organizations across the United States where the highest volume of PepsiCo products is consumed[14]. The program measures success by the number of participating schools and year-over-year trends in engagement. **In 2021, this engagement included 6,980 active participating schools with more than 4.4 million students**[15].

[14] Based on this follow-up disclosure, we may infer that this strategy does not effectively cover 100% of PepsiCo's customers, but rather only those in the United States.

[15] The number of people enrolled in school in the United States reached 73.2 million by October 2020 according to the U.S. Census Bureau – for more details look up Table 1 at https://www.census.gov/data/tables/2020/demo/school-enrollment/2020-cps.html

The **collaboration and innovation strategy aims to encourage innovation** to reduce climate change impacts. **This programme covers 100% of customers and approximately 65% of supplier-related Scope 3 emissions** (62% from agriculture and packaging and 3% from Franchise operations). To this end, PepsiCo together with its largest retail customer[16] regularly engage in collaborative initiatives such as the Midwest Row Crop Collaborative, which aims to expand solutions that protect air and water quality and enhance soil health across the corn and soy system in the Midwest (United States).

Additionally, PepsiCo created the Closed Loop Fund in 2014 and continues to support and invest in the fund to improve recycling in the United States and internationally. The Midwest Row Crop Collaborative's success is measured by, among other things, the percentage of row crop acres in Illinois, Iowa and Nebraska that are engaged in sustainability measures by 2025, and the extent to which Illinois, Iowa, and Nebraska meet the 45% nitrogen loss reduction goal and partnerships established to expand across the Upper Mississippi River Basin by 2035.

The Closed Loop Fund has continued to make progress, with the company **estimating that it kept 3.6 million tons of material in circulation and avoided 6.8 million tons of GhG emissions in 2021**. PepsiCo has also implemented a Partner Outreach Program to drive energy conservation with its strategic franchise operations across the United States, Mexico, Latin America, South America, Western Europe, and Asia. These franchise operations were selected based on their production volume and revenue and thus were prioritized for engagement based on materiality.

The company has extended its Resource Conservation program to these franchise operations, providing training and access to tools that enable the measurement and tracking of performance, as well as the identification and implementation of improvement opportunities. The company tracks the reduction in GhG emissions within franchise operations as a measure of success. **As a result of these efforts, PepsiCo states observing an approximate 8% decline in emissions in 2021 compared to the 2015 baseline year**.

Influence on Policymakers

PepsiCo has demonstrated a largely positive engagement with specific climate policies. In April 2020, the company submitted formal comments to the European Commission in support of the EU Emissions Trading Scheme and the EU Carbon Border Adjustment Mechanism (CBAM) – without taking a stance on the removal of existing exemptions in the CBAM.

Additionally, in the same year, PepsiCo expressed support for raising the ambition of the EU's 2030 Climate Target and the European Climate Law while highlighting the importance of "regulatory simplicity and realism" in the latter. From 2017-2019, PepsiCo actively advocated for a revenue-neutral federal-level carbon tax (via dividends returned to citizens) in the United States through its involvement with the Climate Leadership Council (CLC).

However, it should be noted that the CLC's position also included support for the rollback of other forms of carbon regulation, such as the Clean Power Plan. More recently, in August 2021, PepsiCo endorsed the Council's Bipartisan Climate Roadmap, which continues to advocate for "trading the most ambitious carbon price enacted by any leading emitter nation for regulatory relief." A summary of PepsiCo's interaction with policymakers can be found in Table 3.

[16] Undisclosed name – referred to (by PepsiCo) as its largest retail customer worldwide.

Table 3: Policy Makers influenced by PepsiCo[17]. Source: PepsiCo's Climate Change CDP Answers 2022.

Organisation	Geographic Coverage	Policy Focus	Policy Ambition	PepsiCo's Influence
Climate Leadership Council (CLC)	United States of America	Carbon Tax	To promote a carbon dividend framework as the most cost-effective, equitable and politically viable climate solution	Support with minor exceptions
European Union/ European Commission	Europe	Carbon Tax	To establish a carbon border tax	Support with minor exceptions
European Union/ European Commission	Europe	Climate Smart Agriculture	To establish profitable business models for farmers to take on more sustainable farming practices	Support with no exceptions
Ceres	United States of America	Emissions	To support capital market lead-ers in achieving commitments to get to Net Zero emissions by 2040 and to get to 50% reductons by 2030.	Support with no exceptions
European Union/ European Commission	Europe	Regional Climate Policy	To write into law the goal set out in the European Green Deal – for Europe's economy and society to become climate-neutral by 2050.	Support with minor exceptions
European Union/ European Commission	Europe	Circular Economy	To reform its packaging legisla-tion in a way that packaging would have to be designed to be recyclable, reusable and including recycled content as of 2030.	Support with major exceptions

PepsiCo also discloses a list of industry associations of which it is a member. However, provides limited information on its role within each association, the extent of alignment between its own positions and those of the groups, and actions taken to address any misalignment – see Table 4.

[17] Note that this is the terminology used by the company in its CDP Climate Change Responses.

Table 4: PepsiCo's Trade Associations Memberships. Source: PepsiCo Climate Change CDP Answers 2022.

Organisation	Sustainability Position
American Beverage Association (ABA)	ABA may support various types of legislation related to climate change, such as legislation on energy efficiency, consistent with PepsiCo's views.
Consumer Brands Association (CBA)	CBA may support various types of legislation related to climate change, such as legislation on energy efficiency, consistent with PepsiCo's views
Union of European Soft Drinks Associations (UNESDA)	UNESDA welcomes the European Commission's proposal for establishing a Cir-cular Economy in Europe and the recently concluded review of the Waste Framework Directive (WFD) and the Packaging and Packaging Waste Directive (PPWD).
FoodDrinkEurope	FoodDrinkEurope submitted its response to the European Commission's call for inputs on a strategy for long-term EU greenhouse gas emissions reductions in line with the Paris Agreement. The organisation is yet to adopt a more proactive approach in support of climate neutrality, but its members have agreed to pri-oritize climate-related goals when assessing the performance of packaging.
European Organization for Packaging and Environment (EUROPEN)	EUROPEN supports the objectives of the EU Circular Economy package. EUROPEN advocates for a packaging waste policy framework that clearly defines the roles and responsibilities of all actors involved in waste management. The organisa-tion does not plan on engaging in climate-specific files at this stage but sup-ports the climate neutrality objective through its advocacy on the circular economy.
European Snacks Association (ESA)	ESA supports sustainable practices to protect natural resources as well as a circular economy for packaging and actively engages in packaging-related policy initiatives at EU level.
European Brands Association (AIM)	AIM supports and promotes the UN SDGs. They have taken a position on climate change, sustainable product policy, and packaging among environmental issues.

According to Lobbymap.org, **the company is also a member of Business Roundtable, which has demonstrated mixed positions on climate policy**. Additionally, **PepsiCo maintains its membership in influential groups that are largely opposed to U.S. climate policy, such as the National Association of Manufacturers and the U.S. Chamber of Commerce**.

However, it should be pointed out that **the company has stated it does not share the U.S. Chamber of Commerce's views on climate and does not serve on its board**.

In summary, **PepsiCo demonstrates a comprehensive engagement strategy with its suppliers and customers, focusing primarily on reducing agricultural emissions upstream and promoting materials recycling downstream. Additionally, the company engages positively with policymakers aligned with a 1.5°C scenario**.

MANAGEMENT ALIGNMENT

Sustainability Targets Oversight

According to the company, PepsiCo views sustainability as a fundamental aspect of its business strategy. To this end, **the company's governance integrates the oversight of its Board of Directors and Senior Leadership**. To aid the Board in directing and aligning with its sustainability agenda, **in 2017, the Board established the Public Policy and Sustainability Committee, which was later renamed in 2020 to the Sustainability, Diversity and Public Policy Committee** to better reflect the Committee's ongoing focus.

This Committee, which is composed entirely of independent directors, **assists the Board in providing enhanced oversight of the company's policies, programs, and associated risks related to key sustainability, diversity, inclusion, equity and public policy matters** – see Table 5.

Table 5: Board of Directors Organisational Structure & Responsibility. Source: PepsiCo's 2022 Proxy Statement.

Organisation	Audit	Compensation	Nominating and Corporate Governance	Sustainability, Diversity and Public Policy
Segun Agbaje	E			
Shona L. Brown		C		•
Cesar Conde		•	•	
Ian Cook (Presiding Director)			•	
Edith W. Cooper	•			
Dina Dublon		•		•
Michelle Gass	E			
Dave Lewis	E			
Ramon L. Laguarta				
David C. Page		•		•
Robert C. Pohlad		•	C	
Daniel Vasella		•	•	
Darren Walker			•	C
Alberto Weisser	C E			

C = Committee Chair **E** = Audit Committee Expert

To ensure the integration of sustainability into its business strategy, senior leadership commitment is crucial. **The PepsiCo Executive Committee (Table 6), composed of the Chairman and CEO, the CFO, sector CEOs and functional heads, has direct oversight of the sustainability agenda, strategic decisions, and performance management**. This approach ensures that sustainability is a key accountability factor for every member of PepsiCo's senior leadership team. Additionally, with the launch of the pep+ strategy, which aims to accelerate the company's sustainability journey and further integrate sustainability into the plans, operations, and core strategies of the business, PepsiCo has established a Sustainability Leadership team. Under this team, sector leaders will work closely with the Global Sustainability Office to ensure strong coordination across the company and business segments. **The Global Sustainability Office, led by the Chief Sustainability Officer, is responsible for coordinating and driving the company's sustainability agenda across its entire value chain, as well as for the collection and management of sustainability data.**

Table 6: Executive Committee.
Source: PepsiCo 2022 Proxy Statement.

Committee	Position
Ramon L. Laguarta	Chairman of the Board and CEO, PepsiCo
Hugh F. Johnston	Vice Chairman, Executive Vice President (EVP) and Chief Financial Officer (CFO), PepsiCo
Silviu Popovici	CEO, Europe
Kirk Tanner	CEO, PepsiCo Beverages North America (PBNA)
Steven Williams	CEO, PepsiCo Foods North America (PFNA)

Management Compensation

PepsiCo's executive compensation programmes are designed to align the interests of executive officers with those of shareholders. These programmes primarily **consist of fixed compensation, represented by an Annual Base Salary, and performance-based compensation, represented by a variable Annual Incentive and a Long-Term Incentive, which are linked to three-year performance goals**. In 2021, the target pay mix for the Chairman and CEO and Named Executive Officers was as shown in Figure 8.

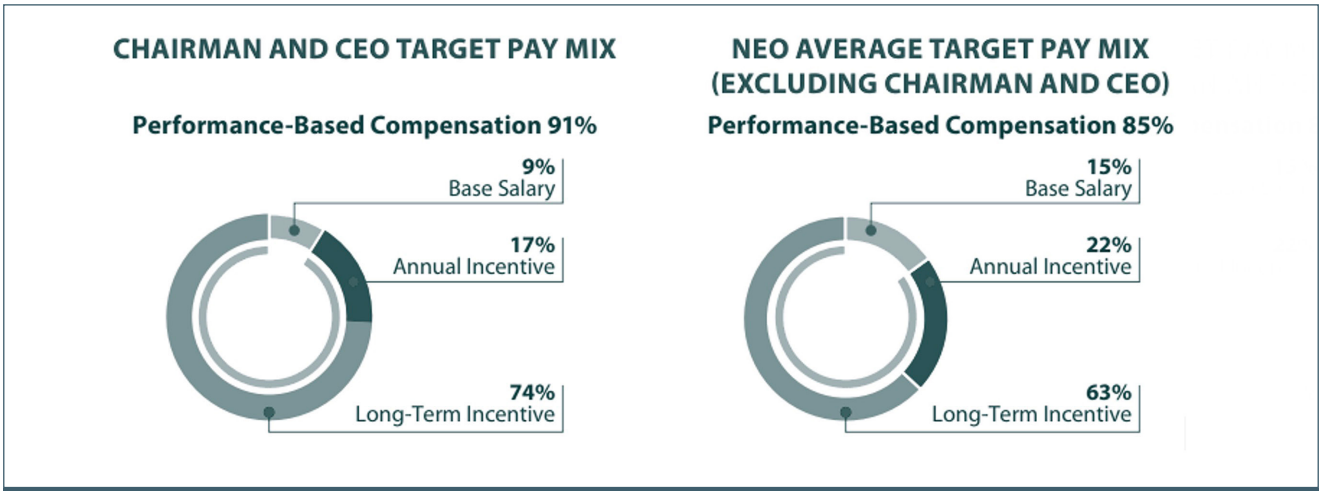

Figure 8: Executive Remuneration Breakdown[18]. Source: PepsiCo 2022 Proxy Statement.

[18] NEO stands for Named Executive Officer.

Of this mix, only the Annual Incentive Award is linked to sustainability KPIs through the Individual Performance Multiplier – see Figure 9.

Figure 9: PepsiCo's Annual Incentive Award. Source: PepsiCo 2022 Proxy Statement.

The individual performance is evaluated based on objectives related to an individual's contribution to PepsiCo's strategic business imperatives, such as improving operational efficiencies, driving innovation, increasing customer satisfaction, enhancing environmental sustainability, and managing and developing the workforce. These strategic business imperatives can be both quantitative and qualitative and vary for each executive officer, generally tailored to the scope of their respective responsibilities.

When it comes to ESG goals, holistic accomplishments related to each stage of PepsiCo's value chain are considered. These include, but are not limited to, next-generation agriculture, water stewardship, sustainable packaging, products, climate change, and people . The Compensation Committee ultimately takes these outcomes into consideration, in conjunction with the executive officer's broader contributions to PepsiCo's business imperatives, translating into their Individual Performance Multiplier, which ranges from 0% to 150% to allow for differentiated pay-outs.

In summary, **PepsiCo's engagement and influence strategies with regard to its suppliers and customers align with its climate transition ambitions**. However, the company's management compensation structure may not fully support these goals. Specifically, **the short-term nature of the Annual Incentive Reward and its focus on achieving strategic business imperatives rather than specific climate-related goals do not align management incentives with the long-term prospects of a climate transition. Additionally, there is a lack of transparency in how the bonus is linked to the company's ESG goals, making it difficult to determine management's alignment with a 1.5°C scenario.**

Risk Analysis

FINANCIAL IMPACT

PepsiCo identifies a range of climate-related risks and opportunities with the potential to impact its business. To effectively evaluate and manage these challenges, the company employs a probability scale that ranges from "unlikely" to "virtually certain". To aid in comparison and analysis, Planet Tracker has assigned numeric values to these probability designations – see Table 7.

Table 7: PepsiCo's Probability Denominations – Numeric Equivalent.

Probability Denomination	Numeric Probability
Unlikely	25%
About as likely as not	50%
More likely than not	66%
Likely	75%
Very likely	90%
Virtually certain	99%

These risks and opportunities are categorised into two main drivers of change: External Policy and Physical Impact.

External Policy Drivers

PepsiCo faces both risks and opportunities from the potential implementation of Carbon Pricing Mechanisms (CPMs) which may lead to changes in direct and indirect operating costs and margins. To address these challenges, the company's global Public Policy and Government Affairs (PPGA) team closely monitors new regulations around the globe to better prepare the company and mitigate financial risks associated with fuel/energy taxes and climate regulations. This information is subsequently shared with PepsiCo's Risk Committee (PRC) and Board for further evaluation.

In 2020, the PPGA team conducted an exercise to understand the implications of future CPMs, such as the United States federal price on carbon, on the company's business[19]. According to PepsiCo the analysis utilised carbon price projections for each of the company's physical assets and the associated emissions to understand carbon pricing risk for different temperature scenarios[20]. By only **analysing the potential impact of CPMs applied to Scope 1 and 2 emissions, PepsiCo quantified the maximum risk at USD 95 million[21], or just under 1% of the annual three-year average trading operating profit**. Additionally, the **company assesses that this risk could be realised in the next five to ten years, with a probability of 90%**.

To validate these findings, **Planet Tracker employed the Inevitable Policy Response (IPR) carbon pricing for 2030, applied to PepsiCo's both Scope 1 and 2 emissions[22]**. Utilising a geographic origin weighting of the last three years, we have derived a future weighted average price of USD 59 per TCO_2e. Multiplying this price by the projected sum of Scope 1 and 2 emissions of 5,289 $KTCO_2e$ by 2030, **in the event of no mitigation, the financial impact would be USD 314.5 million. This potential impact is over three times greater than PepsiCo's estimates and represents 3% of its three-year average annual operating profit**. Even **when assuming a 90% likelihood of realisation in the next five to ten years, as PepsiCo does, the potential impact would** still **be USD 283.1 million or 2.7% of its three-year average annual operating profit** – see Table 8.

[19] United States alone accounted for 49.7% of PepsiCo's Scope 1 and 2 emissions from 2019 to 2021 – Source: PepsiCo's CDP Climate answers from 2020 to 2022.

[20] No details were disclosed by PepsiCo regarding the different scenarios used.

[21] Data extracted from PepsiCo's Climate Change CDP Answers 2021.

[22] The Inevitable Policy Response to Climate Change (2021)

However, a more significant concern is that **PepsiCo does not include the potential effects of CPMs linked to its Scope 3 emissions in its risk appraisal**[23]. As the European Carbon Border Adjustment Mechanism[24] develops, the company may be required to extend its assessment. Therefore, we also calculated the potential financial impact of future CPMs on PepsiCo's operations in relation to its Scope 3 emissions. Using a revenue geographic origin weighting of the last three years, we have derived a future weighted average price of USD 62 per TCO_2e[25]. By multiplying this price by the projected Scope 3 emissions of 49,691 $KTCO_2e$ by 2030, if not mitigated, in the next ten years PepsiCo could be exposed to an increase in costs of up to USD 3.1 billion per year. Even assuming only an 80% cost absorption from suppliers or customers, it would still represent over USD 2.4 billion or 23% of its three-year average annual operating profit, with 19% linked to its Scope 3 Upstream emissions. Thus, by failing to consider Scope 3 emissions in its risk and opportunity assessment, PepsiCo may be significantly underestimating the risks associated with future CPMs – See Table 8.

Table 8: External Policy Drivers – Summary of Material Risks by 2030. Source: PepsiCo Climate Change CDP Answers 2021-2022; Planet Tracker Calculations.

Assessment by	Value Chain	Implied Price per TCO_2e by 2030	Expected $KTCO_2e$ by 2030	Probabilistic Financial Impact
PepsiCo	Scope 1 and 2	USD 68	1,396	USD 86 million
Planet Tracker	Scope 1 and 2	USD 59	5,289	USD 283 million
Planet Tracker	Scope 3	USD 62	49,691	USD 2,449 million

In summary, **PepsiCo's underrating of the potential impact of Scope 1 and 2 emissions and the omission of Scope 3 emissions from its risk and opportunity assessment may hinder its progress towards aligning with a 1.5°C scenario by 2030.**

Physical Impact Drivers[26]

In regards to Physical Impact, PepsiCo focuses on Chronic Physical Impact, which is divided into two categories. The first category evaluates the impact of highly variable weather patterns on the company's direct operations, while the second category evaluates the same impact on its upstream activities.

From 2019 to 2021, the primary risk identified by the company as having a material impact on its direct operations was the increased mean temperature. According to PepsiCo, temperature extremes could result in direct impacts such as increased cooling costs at facilities or regular production disruptions as temperatures exceed equipment tolerance levels. Direct impacts could also include rising utility prices, equipment degradation, and failure of transportation and supply chain infrastructure. The financial impact is estimated by PepsiCo based on modelling temperature extremes specific to the physical location of company-owned assets, such as manufacturing plants and warehouses, which account for 90% of the impact, and

[23] Something its competitors do. Read Nestlé full Climate Transition Analysis here.

[24] EU: New regulation taxing produce coming from countries with a lower carbon tax.

[25] 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.

[26] These physical impacts are assessed under the current climate change conditions of 1.1C, being this the best estimate of global warming since 1850-1900, as stated in IPCC (2020): Summary for Policymakers / Climate Change 2021: The Physical Science Basis.

third-party assets, such as franchises, accounting for the remaining 10% of the impact. By multiplying the modelled vulnerability or decline in productivity of the assets due to temperature extremes by the value of the physical assets, **over the last three years, the company derived an average potential impact of USD 1.4 billion or 13.6% of its three-year average annual operating profit. Additionally, the company regards this risk as virtually certain and estimates an occurrence timeframe of up to five years as of 2021.**

When it comes to the Chronic Physical Impact on PepsiCo's upstream activities, **the company identified in 2021 that temperature extremes could also lead to yield impacts for key agricultural commodities such as corn and potatoes**. Additionally, PepsiCo predicts that **without adaptation, rising temperatures in Thailand may render 45% of potato farmland in the country unsuitable for potato cultivation by 2025**. However, the company does not publicly disclose the potential financial impact of such an occurrence on its business, **though it does acknowledge that 34% of its potato volume originates from regions experiencing water stress** – see Table 9.

Table 9: Key Agricultural Commodities sourced from areas with Water Stress. Source: PepsiCo Water CDP response 2022.

Agricultural Commodities	% of Total (2021)
Corn	28%
Potatoes	34%
Palm Oil	0%
Sugar	43%
Wheat	16%

In prior years, PepsiCo's assessment of Chronic Physical Impact on its upstream activities focused on changes in precipitation patterns. The company evaluated direct impacts such as reduced water availability for crop growth and increased water prices, as well as reductions in water quality and yield impacts due to an increasing likelihood of drought for key commodities. To estimate the financial impact, the company modelled the probability of drought at commodity sourcing locations and the probable decline in yields of the sourced commodities due to drought or soil moisture availability.

In 2020, the company derived a potential impact to costs of USD 71 million, representing less than 1% of its three-year average annual operating profit. In 2019, using the same methodology, the company derived a potential impact of USD 241 million or 2.3% of its three-year average annual operating profit. In both cases, the company estimated an occurrence timeframe of between five and ten years with a probability of 90%. However, **it is worth noting that the 2020 assessment focused on key commodities such as potatoes, oats, palm oil, sunflower, and wheat sourced from the United States, Canada, Brazil, Australia, United Kingdom, Hungary, and Russia, while the 2019 assessment focused on key commodities such as corn, potatoes, and sugarcane sourced from the United States, Brazil, Turkey, India, and Thailand. The company did not provide an explanation for the changes in its risk appraisal from one year to the next.**

Considering that the 2021 assessment refers back to the vulnerability of corn and potatoes, particularly when sourced from Thailand, **we believe the latter figure to be more accurate. Therefore, we assume an expected financial impact of USD 217 million (90% of USD 241 million) or 2.1% of the company's three-year average annual operating profit will be realised in the next five to ten years.**

In short, **the expected Chronic Physical Impact on PepsiCo's operating costs amounts to 16% of the company's three-year average annual operating profit**. When **combined with the potential impact of CPMs**, which is estimated to be 26% of the company's three-year average annual operating profit, **the total financial impact PepsiCo is exposed to due to Climate Change and Transition is 42% of its three-year average annual operating profit. These risks are expected to materialise in the next ten years.**

RISK MANAGEMENT

PepsiCo faces two main areas of material risk: exposure to potential CPMs and dual exposure to high variability in climate and weather patterns, affecting both the company's direct operations and upstream activities.

To manage the potential CPMs risk, the company focuses on reducing its Scope 1 and 2 emissions by investing in renewable energy and energy efficiency. For example, in 2019, the company committed to achieving 100% renewable electricity for its United States direct operations starting in 2020. **The company assigned a cost of USD 150 million to the mitigation of this potential risk**. This cost estimate **is based on the company's internal fund that provides Capex relief to business units for implementing energy efficiency and renewable energy projects, as well as projects that lead to sustainable packaging and GhG emission reductions**.

However, **the company only indirectly addresses the main risk of CPMs, specifically the potential financial impact of Scope 3 emissions, through its Pep+ initiative. This initiative aims by 2030 to (a) spread the adoption of regenerative agriculture practices**[27] **across 7 million acres** (approximately equal to 100% of its entire agricultural footprint around the world), **(b) source sustainably 100% of its key ingredients, (c) cut virgin plastic from non-renewable sources per serving across their food and beverage portfolios by 50%, and (d) design 100% of packaging to be recyclable, compostable, biodegradable or reusable.**

To address the financial risks associated with high variability in weather patterns on its direct operations, PepsiCo has allocated a potential cost of USD 850 million for business continuity planning (BCP) for its facilities. This cost estimate is **based on evaluations of investments required for BCP at one of its United States facilities, which have been scaled up to cover the company's top high-risk sites for temperature extremes globally**. The current BCP plan includes investments in developing new third-party manufacturers, new production lines, and efficiency improvements. In 2021, to further integrate climate risks into its existing BCPs, the company also developed a risk mitigation library, which includes various operational, capital, and governance measures to mitigate physical risks, along with an indication of the associated costs. This library can be integrated into the existing BCP process and recommended to plant managers and leadership.

To mitigate the financial impact of Chronic Physical risks on its upstream activities, PepsiCo recognises the potential impact of climate change on its agricultural value chain in the near term. As such, **the procurement team is focused on creating BCPs for key commodities to build supply chain resiliency**. Furthermore, based on its climate risk assessment, the sustainable agriculture team is conducting a deep-dive analysis of high-risk areas and developing adaptation strategies, which include suitable crop variety characteristics, farm management changes, and sourcing strategies. This work began in 2019 and continues into 2021.

In conclusion, **PepsiCo's risk management initiatives, specifically its BCP, are sound in addressing Physical Impact risks. The company has also effectively targeted the mitigation of potential risks related to its Scope 1 and 2 emissions. However, it fails to consider the potential risk associated with Carbon Pricing Mechanisms (CPMs) related to Scope 3 emissions, which could amount to 23% of its three-year average annual operating profit if not mitigated. As a result, this omission may significantly underestimate the risk associated with Climate Transition. Given the materiality of this oversight, the company's risk analysis cannot confirm alignment with a 1.5°C scenario.**

[27] PepsiCo defines regenerative agriculture as a set of farming principles and practices that improve and restore ecosystems while building resilience. These practices aim for the improvement of soil health, GhG emissions reduction and carbon sequestration, watershed management, biodiversity and the livelihoods of agricultural workers.

Strategy Assessment

CAPITAL ALIGNMENT

In 2021, PepsiCo updated its Science-Based Targets (SBTs) to achieve Net Zero emissions by 2040, a decade earlier than the target set by the Paris Agreement. To achieve this goal, the **company has set an ambitious target of reducing absolute GhG emissions across its direct operations by 75% and its indirect value chain by 40% by 2030, compared to a 2015 baseline. This aligns with Planet Tracker calculations, which estimate that in order to align with a 1.5ºC scenario by 2030, PepsiCo would need to reduce its Scope 1 and 2 GhG emissions by 74% and its Scope 3 GhG emissions by 43%, both in absolute terms, from a 2021 baseline.**

To support its ambition, **PepsiCo has issued two Green Bonds**: a 30-year, **USD 1 billion senior notes offering in 2019** and a 10-year, **USD 1.25 billion senior notes offering in 2022**. As of December 2021, the company had allocated USD 974 million in proceeds from its **first Green Bond** to eligible green projects, representing 100% of the net proceeds. These projects **include investments in packaging, decarbonisation, and water**. According to the company, **the eligible decarbonisation expenditure will help PepsiCo to avoid more than 230 $KTCO_2e$ emissions in the company's direct operations and supply chain annually or over 2,070 $KTCO_2e$ by 2030. However, PepsiCo does not specify how much of the investment was allocated individually to the decarbonisation projects which will lead to the quantified emissions mitigation.**

The **second Green Bond** is based on an updated Green Bond Framework that reflects the company's new Pep+ strategy. The net proceeds from this bond can be allocated to four categories[28], with **a focus on the three pillars of Pep+: Positive Agriculture, Positive Value Chain, and Positive Choices. Under Positive Agriculture, PepsiCo aims to spread the adoption of regenerative farming practices across 7 million acres – approximately equal to 100% of the land used around the world to grow key crops and ingredients for the company's products. These efforts are estimated to lead to a net reduction of at least 3,000 $KTCO_2e$ by 2030** reducing further the extrapolated historical trend of emissions.

Based on the partially disclosed GhG mitigation numbers, **it can be inferred that the 20,149 $KTCO_2e$ difference between the adjusted extrapolated trend of emissions (54,981 $KTCO_2e$) and the SBT recommended level of emissions (34,831 $KTCO_2e$) would be reduced at least by a quarter to 15,079 $KTCO_2e$. This represents a gap that the company has not explained so far how is planning to mitigate.**

When comparing PepsiCo to its peers, it can be observed that Danone[29] would need to invest between USD 662 million and USD 1.1 billion in order to reduce its agricultural emissions by 14,721 $KTCO_2e$, while Nestle's[30] regenerative agriculture practices to reduce 41,800 $KTCO_2e$ would cost the company USD 3.2 billion[31]. Thus, at a high level, **PepsiCo's potential investment of USD 2.25 billion to reduce 20,149 $KTCO_2e$ seems comparatively adequate. However, according to the company's disclosures, this investment only represents the potential to reduce 5,070 $KTCO_2e$ by 2030. For a more accurate assessment of the company's possible alignment with a 1.5ºC scenario better granularity regarding the investment dedicated to decarbonisation is required.**

[28] Eligible Projects include the following: 1: Circular Economy & Virgin Plastic Waste Reduction; 2: Decarbonisation And Climate Resilience Within Our Operations And Value Chain; 3: Pursuing Net Positive Water Impact; 4: Regenerative Agriculture.

[29] Find the full report here - https://planet-tracker.org/wp-content/uploads/2022/11/CTA-Danone.pdf

[30] Find the full report here - https://planet-tracker.org/wp-content/uploads/2022/09/CA100_Nestle-report.pdf

[31] Initiative priced according to McKinsey & Company (2020): Agriculture and climate change.

TRANSITION APPRAISAL

At Planet Tracker, we conducted an analysis of PepsiCo's climate transition by reviewing its GhG emissions evolution over the past three years (2019-2021). **In 2021, the company announced updated SBTs with the goal of achieving Net Zero emissions by 2040 and aligning with a 1.5°C warming scenario by 2030**. It is important to note, however, **that these targets are still measured against a 2015 base year where most emissions are mostly estimates based on the company's sales rather than modelled and thus more accurate emissions as we could find in more recent years (i.e. 2019 to 2021).**

To provide a more solid and up-to-date comparison, we examined the adjusted extrapolated emissions trend from 2019 to 2021 versus the SBT-recommended absolute reductions for a 1.5°C scenario by 2030 from a 2021 baseline. Under this scenario, it was calculated that **PepsiCo's Scope 1 and 2 emissions would need to decline by 74% and Scope 3 by 43% by 2030**. We applied a simple extrapolation model to derive PepsiCo's future emissions up to 2030, by compounding forward the annual rate of change in the emissions intensity ratio and multiplying it by the expected future revenue, assuming a CAGR close to 5%.

As a result, **PepsiCo's Scope 1 and 2 GhG extrapolated emissions will yield an absolute reduction of 2% from 2021 to 2030, while the extrapolated emissions for Scope 3 will yield an absolute decline of 15% over the same period. Overall, this represents a 14% reduction compared to its 2021 emissions level, while the SBT-recommended emissions by 2030 would require a 45% reduction compared to the 2021 baseline.**

To assess the company's intention in closing the gap between its extrapolated emissions and its updated SBTs, we also conducted a review of PepsiCo's Policy and Governance and Risk Management. Our findings indicate that **the company has a largely positive engagement with climate policies, suppliers and customers, with a focus on regenerative agriculture and sustainable sourcing upstream, and packing and recycling downstream**. This is highly relevant as the majority of its carbon footprint (92% in 2021) comes from its Scope 3 emissions. **According to PepsiCo, 33% of its carbon footprint in 2021 came from agriculture and 25% from packaging**, making these areas a priority.

However, **despite the oversight of targets by the Board of Directors and Senior Leadership, the link between environmental goals and compensation is unclear, which may detract from the company's ambitions**. Furthermore, **PepsiCo omits to include the potential impact on costs caused by CPMs linked to Scope 3 emissions in its Climate Transition risk appraisal. This material omission may again detract from the company's ambitions and hinder progress in achieving its updated SBTs.**

Finally, in order to assess PepsiCo's alignment with a warming scenario, a climate sensitivity estimate was applied. This involved comparing the company's projected emissions and expected emissions resulting from mitigation investments with the global CO_2e remaining budget by 2030[32]. Specifically, a climate sensitivity estimate was used to compare the global CO_2e remaining budget by 2030 with PepsiCo's CO_2e budget, relative to its SBTs emissions level by 2030, resulting in an alignment in °C.

Accordingly, **as a result of surpassing its recommended SBTs emissions level by 58%, PepsiCo's extrapolated trend of emissions aligns the company with a 1.7oC by 2030. Meanwhile, the high-level disclosed investments supporting PepsiCo's ambitions, indicate that the company is likely to close the gap only up to 43%, which would lead to a similar temperature alignment** – see Table 10.

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

Table 10: PepsiCo's Temperature Alignment – Estimate of Climate Sensitivity. Source: Planet Tracker Calculations.		
Variables	**PepsiCo's Trend**	**Partially disclosed GhG Future mitigation**
Suggested $KTCO_2e$ budget (SBT)	34,831	34,831
Expected $KTCO_2e$ emissions (2030)	54,981	49,911
Target overshoot (undershoot)	58%	43%
SBT temperature (°C)	1.5	1.5
Global $KTCO_2e$ remaining budget (2030)	30,000,000	30,000,000
PepsiCo's Over/(Undershoot) in $KTCO_2e$	17,354,293	12,987,549
Baseline Temperature (°C)	1.1	1.1
Warming Ratio[33]	1.33333E-08	1.33333E-08
PepsiCo's Temperature Alignment (°C)[34]	**1.7**	**1.7**

PepsiCo has implemented significant initiatives to address its environmental impact, particularly since the launch of its Pep+ strategy in 2021. It is important to note that while PepsiCo has not yet established a formal Net Zero Roadmap, it uses its Pep+ Strategy as an alternative. Consequently, much of the climate mitigation strategies and investments are disclosed in an aggregate form.

For a more accurate appraisal, investors should request PepsiCo a more granular level of disclosures especially when it comes to its value chain decarbonisation investment. At the moment, **despite the company addressing its primary sources of emissions actively, based on the information provided its alignment to achieve Net Zero by 2040 cannot be determined.**

In conclusion, we assess that
PepsiCo is on track to align with a 2ºC scenario by 2030[35]

[33] 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 $KTCO_2e$ budget until 2030.

[34] 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 $KTCO_2e$.

[35] Based on the data accessed by Planet Tracker until December 2022.

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ABOUT PLANET TRACKER

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.

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