The Gap Is Back:

Economically Resurgent, Environmentally Unchanged

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Introduction: A Retail Resurrection with an Environmental Shadow

After a decade of contraction, store closures, collapsing cultural relevance and declining revenue, Gap Inc. has staged a striking economic return. The company that once looked destined for retail obsolescence is suddenly visible again in fashion cycles, social media, and quarterly earnings. Yet the question that matters for a fashion-literate, environmentally conscious readership is not whether Gap is back financially, but whether its comeback represents any meaningful environmental progress. The evidence suggests a sharp divergence: the economic revival is real and measurable, while the environmental position remains structurally unchanged.

The Economic Return: How Gap Rebuilt Its Commercial Power

Gap's financial recovery began in earnest in 2023 and accelerated through 2024 and 2025. The appointment of Richard Dickson as CEO in August 2023 marked a decisive shift. Dickson, known for reviving Mattel's Barbie franchise, applied the same discipline to Gap: a tighter brand identity, a return to clean basics, and a renewed emphasis on cultural nostalgia. By Q4 2024, Gap Inc. reported net sales of approximately $4.3 billion, a modest year-on-year increase but significant given the previous decade's decline. Operating income improved by more than 20 percent compared with 2022, driven largely by cost discipline and a leaner store footprint.

The store closures that once signalled decline now appear as strategic pruning. Between 2020 and 2023, Gap Inc. closed more than 350 Gap and Banana Republic stores in North America, reducing fixed costs and improving profitability per square foot. By 2025, the remaining stores were performing at materially higher productivity levels, with Old Navy and Athleta continuing to generate the bulk of revenue. Old Navy alone accounted for more than $8 billion in annual sales in 2024, providing the volume engine that underwrites the group's stability.

Culturally, the brand benefitted from the resurgence of 1990s and early-2000s aesthetics. Gap's archive of logo hoodies, denim, and normcore basics aligned perfectly with the nostalgia wave. The company's 2024 and 2025 campaigns, including collaborations with celebrities and stylists, restored a sense of relevance that had been missing for years. Economically, the comeback is therefore grounded in both financial restructuring and cultural timing.

Environmental Reality: A Business Model That Has Not Moved

Gap's economic revival has not been matched by environmental transformation. The company's sustainability reporting, including its 2023 and 2024 Impact Reports, provides extensive disclosure but limited structural change. The core environmental issues—fibre composition, chemical processing, water use, and waste—remain fundamentally tied to the company's high-volume, petrochemical-dependent business model.

The fibre mix is the clearest indicator. Polyester remains one of Gap Inc.'s dominant materials, with industry estimates placing the company's synthetic fibre usage at well over 50 percent of total volume across Gap, Old Navy, and Athleta. Polyester, elastane, and nylon are all fossil-fuel-derived, non-biodegradable, and responsible for microplastic shedding during wear and washing. Gap's increased use of recycled polyester does not materially alter this reality. Recycled PET fibres still shed microplastics, still rely on petrochemical feedstocks, and still divert plastic bottles away from closed-loop bottle-to-bottle recycling systems. The environmental burden remains unchanged.

Water and chemical impacts are equally significant. Denim, one of Gap's signature categories, is among the most water-intensive and chemically intensive textile products. A single pair of conventionally produced jeans can require between 1,500 and 3,000 litres of water, depending on cotton sourcing and finishing processes. Gap's water-reduction initiatives, including partnerships with Water.org and investments in cleaner dyeing technologies, have produced measurable improvements in specific facilities. However, the overall environmental footprint is determined by production volume, and Gap's economic comeback has increased that volume rather than reduced it.

Chemical management remains a high-risk area. Gap's supply chain spans multiple countries with varying regulatory standards, and the company's own disclosures acknowledge the ongoing challenges of wastewater treatment, dye effluent, and chemical compliance. The company aligns its reporting with GRI, SASB, and TCFD frameworks, which ensures transparency but does not guarantee environmental performance. The forward-looking statements in these reports repeatedly emphasise uncertainty, signalling that the company is not committing to the kind of structural fibre transition or degrowth strategy that would materially reduce environmental harm.

The Numbers Behind the Environmental Gap

The contrast between economic and environmental performance becomes sharper when viewed through data. Gap Inc.'s Scope 1 and Scope 2 emissions have decreased modestly due to energy-efficiency improvements, but Scope 3 emissions—those associated with raw materials, manufacturing, and consumer use—remain overwhelmingly dominant. Industry-wide analyses suggest that more than 90 percent of a mass-market apparel company's emissions occur in Scope 3, and Gap's own disclosures confirm this pattern.

In 2023, Gap reported approximately 5.2 million metric tonnes of CO_2-equivalent emissions across its value chain. This figure has not materially declined in proportion to revenue, meaning the company's carbon intensity remains largely unchanged. Water usage in cotton and denim supply chains continues to be measured in billions of litres annually, with only incremental reductions achieved through efficiency programmes. Waste remains a structural issue: the majority of Gap's garments are not recyclable due to fibre blends containing elastane, polyester, and other synthetics that cannot be mechanically separated at scale.

Why the Environmental Position Has Not Improved

The fundamental reason Gap is not "back" environmentally is that its business model has not changed. The company continues to rely on high-volume production, globalised supply chains, and petrochemical-based fibres. Economic recovery has intensified these dynamics rather than disrupted them. A brand cannot achieve environmental progress while increasing unit output, maintaining synthetic fibre dependency, and operating within a linear take-make-waste system.

Gap's sustainability strategy is disclosure-heavy and transformation-light. It provides transparency, but transparency is not the same as environmental improvement. Without commitments to fibre transition, circular design, end-of-life responsibility, or reduced production volumes, the environmental impact will remain structurally tied to the company's economic success.

Conclusion: A Split-Screen Comeback

Gap is back economically. The financial data, cultural momentum, and strategic discipline all point to a genuine commercial revival. But environmentally, the company remains anchored in the same extractive, petrochemical-dependent model that defined its operations a decade ago. The comeback increases environmental pressure rather than alleviating it. For a brand of Gap's scale, environmental relevance cannot be achieved through efficiency alone; it requires structural change. Until that occurs, the economic resurgence will stand in sharp contrast to an environmental position that has not moved.

How Gap Calculates Its Emissions: A Forensic Analysis of Methods, Models, and Structural Limits

Gap's emissions figures do not come from an independent environmental authority. They come from Gap itself. Like every major apparel company, Gap calculates its own Scope 1, Scope 2, and Scope 3 emissions using the Greenhouse Gas Protocol, a framework that defines categories but does not verify the underlying data. The company's sustainability, finance, and supply-chain teams compile information from factories, mills, logistics partners, energy bills, and supplier declarations. These inputs are then processed through internal models and third-party software tools to generate the final emissions totals that appear in Gap's annual ESG and Impact Reports.

The methodology begins with activity data. For Scope 1 and Scope 2, this is relatively straightforward: fuel consumption in company-owned vehicles, natural gas used in stores and offices, and electricity purchased from utilities. These figures are converted into carbon emissions using standard emissions factors published by national agencies or international bodies. Because these scopes cover only the company's own operations, they represent a small fraction of total emissions and are the easiest to reduce through energy-efficiency upgrades and renewable-energy procurement. This is why Gap's Scope 1 and 2 emissions have declined modestly over the past three reporting cycles.

Scope 3 is where the complexity begins. Gap must estimate emissions from every stage of the garment life cycle, including fibre production, fabric manufacturing, dyeing, finishing, cut-and-sew operations, global transport, retail distribution, customer washing and drying, and end-of-life disposal. The company does not directly measure these emissions. Instead, it relies on supplier-reported data, industry averages, lifecycle-assessment databases, and modelling tools that apply emissions factors to estimated production volumes. Polyester, for example, is assigned a carbon intensity based on petrochemical feedstock extraction, polymerisation, and filament spinning. Cotton is assigned a different intensity based on fertiliser use, irrigation, and ginning. These intensities are multiplied by the tonnage of each fibre Gap purchases annually.

Fabric manufacturing emissions are calculated using regional grid-emissions factors. A mill in Bangladesh running on coal-heavy electricity will produce significantly higher emissions than a mill in Portugal running on renewables. Gap's models incorporate these regional differences, but the accuracy depends entirely on the quality of supplier data. Dyeing and finishing emissions are estimated using process-specific factors for heated water, steam, and chemical treatments. Cut-and-sew emissions are calculated using factory energy consumption and production volumes. Transport emissions are derived from freight distances, modes (ship, truck, air), and load factors.

Downstream emissions are modelled rather than measured. Customer use is estimated using assumptions about washing frequency, water temperature, and drying methods. End-of-life emissions are calculated using national waste-management statistics, landfill methane factors, and incineration profiles. These assumptions are standardised under the GHG Protocol, but they are not specific to Gap's actual customers or waste streams.

The result is a system that produces precise-looking numbers built on layers of estimates, proxies, and supplier declarations. Gap's 2023 value-chain emissions of approximately 5.2

million tonnes CO_2-equivalent are therefore best understood as a modelled representation of the company's environmental footprint rather than a measured reality. Third-party auditors provide limited assurance, checking that the methodology follows the GHG Protocol, but they do not verify the accuracy of supplier data or the environmental conditions in factories. The verification process confirms compliance with reporting rules, not environmental performance.

This methodological structure explains why Scope 3 emissions remain so large and so unchanged. The calculations reflect the underlying business model: high-volume production, petrochemical-based fibres, coal-powered manufacturing regions, and linear end-of-life pathways. Even if Gap improves its modelling accuracy or increases supplier reporting, the emissions will not materially decline unless the company reduces production volumes, shifts away from synthetics, or restructures its supply chain. The numbers are therefore not just environmental data; they are a mirror of the company's economic strategy.

The Mathematical Model Behind Gap's Emissions Accounting

Gap's emissions calculations follow a standardised mathematical structure defined by the Greenhouse Gas Protocol. The company's sustainability team applies a set of linear emissions-factor models to activity data collected from suppliers, factories, logistics partners, and internal operations. The model is additive, deterministic, and based on the principle that total emissions equal the sum of all activity quantities multiplied by their respective emissions factors.

The core equation is:

$E_{total} = E_1 + E_2 + E_3$

where
(E_1) = Scope 1 emissions,
(E_2) = Scope 2 emissions,
(E_3) = Scope 3 emissions.

Each scope is calculated using the same fundamental structure:

[E = $\sum_{i=1}^{n} A_i$ x EF_i

where
(A_i) = activity data (e.g., litres of fuel, kWh of electricity, tonnes of polyester),
(EF_i = emissions factor for that activity,
(n) = number of activities included in the scope.

This is the backbone of Gap's emissions accounting.

Scope 1: Direct Operational Emissions

Scope 1 covers fuel burned in Gap-owned facilities and vehicles. The model is straightforward:

$$E_1 = (F_{gas} \times EF_{gas}) + (F_{diesel} \times EF_{diesel}) + (F_{petrol} \times EF_{petrol})$$

If Gap burns 1,200,000 kWh of natural gas in stores and offices, and the emissions factor is 0.183 kg CO_2e per kWh, then:

$$E_{1,gas} = 1{,}200{,}000 \times 0.183 = 219{,}600 \text{ kg } CO_2e$$

This is why Scope 1 is small: Gap owns very little heavy infrastructure.

Scope 2: Purchased Electricity

Scope 2 uses the same structure but applies grid-specific electricity factors:

$$E_2 = \sum_{r=1}^{m} kWh_r \times EF_{grid,r}$$

where
(r) = region (e.g., US, UK, China),
$EF_{grid,r}$ = emissions factor for that region's electricity grid.

If Gap buys 50 million kWh of electricity in the US at 0.38 kg CO_2e/kWh:

$$E_2 = 50{,}000{,}000 \times 0.38 = 19{,}000{,}000 \text{ kg } CO_2e\}$$

Again, modest compared to Scope 3.

Scope 3: The Full Life-Cycle Model

Scope 3 is where the mathematical model becomes large, multi-layered, and heavily dependent on supplier data and lifecycle-assessment databases. Gap calculates Scope 3 as the sum of emissions from all upstream and downstream activities:

$$E_3 = E_{fibre} + E_{fabric} + E_{dye} + E_{cut} + E_{transport} + E_{distribution} + E_{use} + E_{end}$$

Each component is itself a model.

1. Fibre Production Model

For each fibre type:

$$E_{fibre} = \sum_{J=1}^{k} (M_j \text{ x } EF_j)$$

where
(M_j) = mass of fibre (j) purchased (tonnes),
(EF_j) = emissions factor for that fibre.

Typical factors:
Polyester: 9.5–12.0 kg CO_2e/kg
Cotton: 2.1–4.0 kg CO_2e/kg
Elastane: 15–20 kg CO_2e/kg

If Gap buys 120,000 tonnes of polyester:

$E_{polyester}$ = 120,000,000 kg x 10.5 = 1.26 million tonnes CO_2e

This is why polyester dominates.

2. Fabric Manufacturing Model

$$E_{fabric} = \sum_{p=1}^{q} (Y_p \text{ x } EF_{energy,p})$$

where
(Y_p) = fabric yield (kg),
($EF_{energy,p}$) = emissions factor for regional grid energy used in spinning, weaving, knitting.

If 200,000 tonnes of fabric are produced in coal-heavy regions:

$E_{fabric} \approx$ 0.8 million tonnes CO_2e

3. Dyeing and Finishing Model

$$E_{dye} = \sum_{d=1}^{S} (W_d \text{ x } EF_{heat}) + (C_d \text{ x } EF_{chem})$$

where
(W_d) = heated water used,
(C_d) = chemicals used.

Dyeing is extremely energy-intensive, often adding **0.5–1.0 tonnes CO_2e per tonne of fabric**.

4. Cut-and-Sew Model

E_{cut} = P x $EF_{factory}$

where
(P) = number of garments produced.

Factories in Bangladesh, Vietnam, and India often run on coal-based grids, increasing the factor.

5. Transport Model

$E_{transport} = \sum$ (D x W x EF_{mode})

where
(D) = distance,
(W) = weight,
(EF_{mode}) = emissions factor for ship, truck, or air.

Air freight is 60–80× more carbon-intensive than sea freight.

6. Customer Use Model

$E_{use} = N_{washes}$ x $EF_{wash} + N_{dries}$ x EF_{dry}

Gap assumes standard washing behaviour (e.g., 50 washes per garment).

7. End-of-Life Model

E_{end} = (L x $EF_{landfill}$) + (I x $EF_{incineration}$)

where
(L) = landfill share,
(I) = incineration share.

Because Gap's garments are mostly synthetic blends, recycling is mathematically negligible.

The Final Model

Putting everything together:

$E_{total} = E_1 + E_2 + (E_{fibre} + E_{fabric} + E_{dye} + E_{cut} + E_{transport} + E_{distribution} + E_{use} + E_{end})$

This is the mathematical skeleton behind Gap's reported **5.2 million tonnes CO_2e**.

Numerical worked example with hypothetical Gap data

1. Scope 1: Direct fuel use

Assume Gap's global stores, offices, and vehicles use:

- **Natural gas:** (1,200,000kWh})
- **Diesel (vehicles):** (300,000 litres)

Emissions factors:

- Natural gas: (0.183 kg CO_2e kWh)
- Diesel: (2.68 kg CO_2e litre)

Scope 1 emissions:

$E_{1,gas}\}$ = 1,200,000 x 0.183 = 219,600 kg CO_2e

$E_{1,diesel}$ = 300,000 x 2.68 = 804,000 kg CO_2e

E_1 = 219,600 + 804,000 = 1,023,600 kg CO_2e ≈ 1,024 tonnes CO_2e

2. Scope 2: Purchased electricity

Assume Gap buys:

- **US + EU electricity:** (50,000,000 kWh) at (0.38 kg CO_2e/kWh)

E_2= 50,000,000 x 0.38 = 19,000,000 kg CO_2e} = 19,000 tonnes CO_2e

3. Scope 3: Upstream and downstream: Now the big one. Assume Gap produces **600 million garments** in a year.

3.1 Fibre production

Assume fibre mix by mass:

- Polyester: (120,000 tonnes) at (10.5 kg CO_2e/kg)
- Cotton: (80,000 tonnes}) at (3.0 kg CO_2e/kg)
- Elastane: (5,000 tonnes) at (18.0 kg CO_2e/kg)

Convert tonnes to kg:

- Polyester: (120,000,000 kg)
- Cotton: (80,000,000 kg)
- Elastane: (5,000,000 kg)

Emissions:

$E_{polyester}$ = 120,000,000 x 10.5 = 1,260,000,000 kg CO_2e = 1.26 million tonnes

E_{cotton} = 80,000,000 x 3.0 = 240,000,000 kg CO_2e = 0.24 million tonnes

$E_{elastane}$ = 5,000,000 x 18.0 = 90,000,000 kg CO_2e = 0.09 million tonnes

Total fibre emissions:

E_{fibre} = 1.26 + 0.24 + 0.09 = 1.59 million tonnes CO_2e

3.2 Fabric manufacturing

Assume total fabric output: (220,000 tonnes)
Average fabric manufacturing factor: (4.0 kg CO_2e kg)

E_{fabric} = 220,000,000 x 4.0 = 880,000,000 kg CO_2e = 0.88 million tonnes

3.3 Dyeing and finishing

Assume dyeing adds (0.8 tonnes CO_2e tonne fabric):

E_{dye} = 220,000 x 0.8 = 176,000 tonnes CO_2e

3.4 Cut-and-sew

Assume cut-and-sew factories emit (0.4 kg CO_2e garment):

E_{cut} = 600,000,000 x 0.4 = 240,000,000 kg CO_2e = 0.24 million tonnes

3.5 Transport (upstream + distribution)

Assume:

- Average transport emissions: (0.15 kg CO_2e/garment)

$E_{transport}$ = 600,000,000 x 0.15 = 90,000,000 kg CO_2e = 0.09 million tonnes

3.6 Customer use

Assume:

- Each garment is washed **50 times**
- Each wash (including drying) emits **0.6 kg CO_2e**
- Not all garments are washed equally; assume effective average of **30 washes/garment**

Per garment: $E_{use,per\ garment}$ = 30 x 0.6 = 18 kg CO_2e

For 600 million garments: E_{use} = 600,000,000 x 18 = 10,800,000,000 kg CO_2e = 10.8 million tonnes

You can see how customer use can dwarf production if the assumptions are aggressive.

3.7 End-of-life

Assume: Each garment at end-of-life emits **1.0 kg CO_2e** (landfill + incineration mix)

E_{end} = 600,000,000 x 1.0 = 600,000,000 kg CO_2e = 0.6 million tonnes

4. Total emissions

Now sum everything:

Scope 1: E_1 ≈1,024 tonnes

Scope 2: E_2 = 19,000 tonnes

Scope 3 components (in million tonnes):

- Fibre: (1.59)
- Fabric: (0.88)
- Dyeing: (0.176)
- Cut-and-sew: (0.24)
- Transport: (0.09)
- Use: (10.8)
- End-of-life: (0.6)

Total Scope 3: E_3 = 1.59 + 0.88 + 0.176 + 0.24 + 0.09 + 10.8 + 0.6 = 14.376 million tonnes CO_2e

Total emissions: E_{total} ≈ 0.001 + 0.019 + 14.376 ≈ 14.396 million tonnes CO_2e

In this hypothetical worked example, **Scope 3 is more than 99% of total emissions**, which is directionally consistent with real-world fashion data.

Forensic critique: why this model structurally underestimates emissions

1. Supplier data is incomplete, biased, and often optimistic

The model assumes that mills, factories, and logistics providers report accurate energy use, fuel types, and production volumes. In reality:

- Many suppliers lack precise metering.
- Energy use is often estimated, not measured.
- There is a commercial incentive to under-report or present "best case" data.

Because emissions are calculated as (A_1 x EF_i), any under-reported activity data (A_1) directly suppresses the final emissions figure.

2. Emissions factors are averages, not realities

The model uses **average emissions factors** from lifecycle databases and national inventories. These averages:

- Smooth over the worst-performing factories and regions.
- Assume typical technology, not the oldest, dirtiest equipment.
- Often lag behind current grid mixes and fuel prices.

If a dye house runs outdated coal boilers, its real emissions per kg of fabric may be far higher than the factor used. The model cannot see that; it only sees the average.

3. Omitted processes and "boundary choices"

Companies choose **system boundaries**: what to include and what to leave out. Common omissions include:

- Capital goods (machinery, buildings, IT infrastructure).
- Upstream emissions from chemical production beyond a certain tier.
- Retail fixtures, packaging variations, and returns logistics.
- Microplastic pollution and its downstream climate feedbacks (not counted at all).

Every boundary decision trims off emissions that are real but uncounted.

4. Customer use is based on behavioural assumptions

The customer-use model assumes a certain number of washes, temperatures, and drying methods. In practice:

- Some garments are washed far more frequently (e.g., basics, kidswear).
- Tumble-drying is more common in some markets than assumed.
- Ironing and steaming are often ignored.

If the model assumes 30 washes but reality is 60, the use-phase emissions are **underestimated by 50%**.

5. End-of-life is treated as a simple, linear factor

End-of-life emissions are usually modelled with a single factor per kg of waste, based on national landfill/incineration averages. This ignores:

- Illegal dumping and open burning.
- Extended decomposition times for synthetics.
- Additional transport and handling emissions in fragmented waste systems.

Again, the model compresses a messy reality into a single, conservative number.

6. No feedback loops, no systemic effects

The model is **strictly linear**. It does not account for:

- Induced demand (cheap clothes → more purchases → more production).
- Land-use change from cotton farming (deforestation, soil carbon loss).
- Climate feedbacks (e.g., warming reducing soil carbon, increasing irrigation needs).

These systemic effects are real but invisible to the equation.

7. Self-reporting and reputational incentives

Finally, the model is operated by the company whose reputation depends on the outcome. Even when there is no outright manipulation, there is a structural incentive to:

- Choose lower emissions factors where ranges exist.
- Use optimistic assumptions for customer behaviour.
- Highlight intensity reductions (per garment) while increasing total volume.

The result is a dataset that looks precise, is methodologically compliant, but is **conservatively biased** in favour of the brand.

Conclusion

The numerical model you've just seen is **exactly how a company like Gap turns its global operations into a single emissions number**. It is mathematically coherent, internally consistent, and aligned with the Greenhouse Gas Protocol.

But structurally, it is built on:

- incomplete supplier data,
- averaged emissions factors,
- narrow system boundaries,
- optimistic behavioural assumptions, and
- self-interested reporting.

So even when the model says "5.2 million tonnes CO_2e," the true climate burden of Gap's business model is almost certainly **higher, not lower**. The math is clean; the reality is not.

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