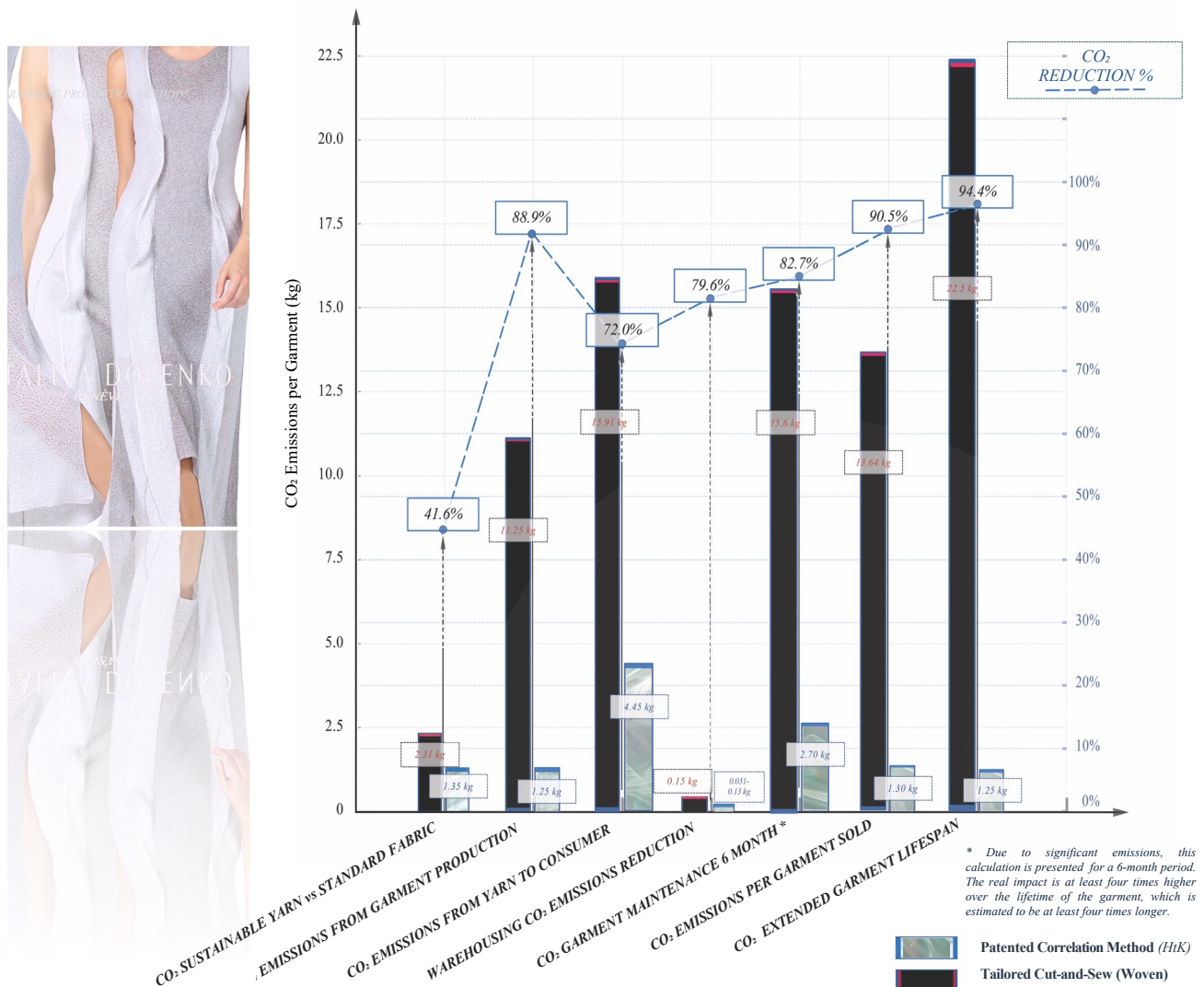


Ultimate Sustainability: CO₂ Reduction Through Perfect Fit

Sustainable innovation is no longer optional – it is essential. **The Patented Method (HtK)** is revolutionising garment production by enabling perfectly fitting, self-adjusting garments at scale, while reducing CO₂ emissions **by up to 94.4%**. Unlike traditional woven garments, which rely on excessive processing, long production times and bulk storage, this Method streamlines the entire lifecycle. By replacing high-emission woven fabric (10 kg CO₂/kg) with optimised sustainable yarn (5.84 kg CO₂/kg), emissions are reduced by **41.6%** before production even begins. Production emissions are reduced **by 88.9%** as the process takes just 2.4 hours per garment compared to 15 hours for cut-and-sew, using **90%** less energy.

The efficiency extends far beyond manufacturing. Lightweight direct-to-consumer shipping cuts logistics emissions **by 85-91.3%**, while dynamic inventory management reduces warehousing CO₂ by **up to 79.6%**. Garment maintenance is no longer a hidden polluter – halving wash cycles, reducing ironing and eliminating dry cleaning cuts CO₂ **by 82.7%** over six months – a fourfold impact over the full life cycle. Unsold stock is minimised, ensuring **90.5%** fewer emissions per garment actually worn. One of the biggest breakthroughs is in longevity – while traditional garments wear out twice as fast, the Patented Method's structural resilience with self-adjusting panels doubles the life of the garment, reducing lifetime CO₂ **by 94.4%**.

**CO₂ EMISSIONS & REDUCTION IMPACT: Interconnected Factors:
PATENTED METHOD (HtK) VS. TAILORED CUT-AND-SEW (Woven)**



1. CO₂ Emission Reduction per Garment Sustainable Yarn vs. Standard Fabric: 41.6%

Unlike knitted fabrics, which generally require an additional complete processing step, the weaving of the fibre itself, for garments made directly from yarn (fibre). Luxury woven fabrics require multiple finishing treatments, increasing CO₂ emissions. **The Patented Method (HiK)**, providing perfect and stable fit, reduces CO₂ emissions per kg of fibre by **41.6%**. Due to significant cost increase, mass production of sustainable luxury fabrics is not an option for the time being, considering a minor reduction in the total CO₂ emissions per garment*.

- **Standard Tailored (Woven):** 10 kg CO₂
- **Sustainable Yarn with Patented Method:** 5.84 kg CO₂
- **CO₂ Reduction:** 41.6%

2. CO₂ Emission Reduction from Garment Production: 88.9%

Traditional cut-and-sew requires 15 hours per garment, consumes 22.5 kWh of energy and emits 11.25 kg CO₂ per garment. Patented Method completes production in 2.4 hours, using only 2.5 kWh and emitting 1.25 kg of CO₂ per garment.

- **Tailored (Woven):** 15 hours × 1.5 kWh/hour = 11.25 kg CO₂
- **Patented Method:** 2.4 hours × 1.04 kWh/hour = 1.25 kg CO₂
- **CO₂ Reduction:** 88.9%

3. CO₂ Emission Reduction from Fibre to Consumer: 72.0%

The Patented Method integrates fibre (yarn)-to-garment production to achieve perfect fit, eliminating intermediate processes for woven such as weaving, dyeing, cutting waste, and multiple transport steps.

- **Tailored (Woven) Industry Baseline for CO₂:** 8.94 kg CO₂
- **Patented Method:** 2.5 kg CO₂
- **CO₂ Reduction:** 72.0% CO₂

4. CO₂ Emission Reduction Warehousing: 13.3% - 79.6%

Warehousing emissions depend on stock levels, storage duration, and energy usage.

The Patented Method reduces CO₂ from dynamic inventory control, reduced stock levels, and real-time manufacturing.

- **Tailored Cut-and-Sew (Woven):** Emissions: 0.15 kg CO₂ per garment.
- **Stock Level:** 100%

A. Minimum CO₂ Reduction Scenario, Patented Method:

- **Stock reduction:** 3.75% - 25%
- **Storage time:** 3-5 months (vs. 6 months for woven)
- **CO₂ per garment:** 0.075 - 0.13 kg CO₂
- **Reduction:** 13.3% - 50%

B. Maximum CO₂ Reduction Scenario, Patented Method:

- **Stock reduction:** 25% - 50%
- **Storage time:** 3 months or less
- **CO₂ per garment:** 0.031 - 0.090 kg CO₂
- **Reduction:** Up to 79.6%

5. CO₂ Reduction from Garment Maintenance, 6-Month Representation: 82.7%

Ironing, dry cleaning, and frequent washing account for 15.6 kg CO₂ per garment (Woven) vs.

2.7 kg CO₂ (Patented Method) over six months. Over two years of average garment use, the impact is four times higher. 6 Months:

- **Tailored Cut-and-Sew (Woven):** Dry Cleaning: 6 times → 12.0 kg CO₂ + Ironing: 12 times → 3.6 kg CO₂ = **Total CO₂ Impact:** 15.6 kg CO₂ per garment
- **Patented Method:** Regular Washing: 3 times → 1.8 kg CO₂ + Ironing: 3 times → 0.9 kg CO₂ = **Total CO₂ Impact:** 2.7 kg CO₂ per garment
- **Patented Method Savings:** No dry cleaning needed. Ironing reduced by 90%. Fewer washes (2x less frequent).
- **CO₂ Reduction:** 82.7%

6. CO₂ Reduction per Garment Sold: 90.5%

Unsold garments inflate emissions. Adjusting for unsold stock

17.5% (Woven) vs. 3.75% (Patented Method) reveals a **90.5%** CO₂ reduction per garment actually worn.

- **Tailored Cut-and-Sew per Garment Sold:** 13.64 kg CO₂
- **Patented Method per Garment Sold:** 1.30 kg CO₂
- **CO₂ Reduction:** 90.5%

7. CO₂ Reduction from Extended Garment Lifespan: 94.4%

Woven garments often need early replacement due to wear and repair. The Patented Method's panel movement resists tearing and deformation, doubling garment lifespan and reducing CO₂ impact by **94.4%**.

- **Woven Lifespan Emissions:** 11.25 × 2 = 22.5 kg CO₂
- **Patented Method Lifespan Emissions:** 1.25 kg CO₂
- **CO₂ Reduction:** 94.4%

- * **Standard fabric emissions:** 2.31 kg CO₂/garment
- * **Sustainable fabric emissions:** 1.62 kg CO₂/garment
- * **Reduction achieved:** 0.69 kg CO₂/garment
- * **This reduction constitutes:** (0.69 kg CO₂) ÷ (15.22 kg CO₂) × 100 = 4.3%

For full methodology, calculations, and future scaling models, the complete Warehousing emissions and Circularity White Paper will be made available online.

