

超越低碳. 被忽略的社會與管治維度

Beyond Low Carbon : The Missing Social and Governance Dimensions

ESG

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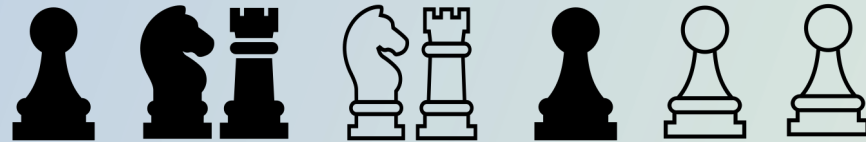
實施ESG戰略的重要性

The Importance of the Implementation of ESG Strategies



在時尚產業推行 ESG (環境、社會和治理) 策略並非僅僅是一種潮流；它是該產業對地球及其人類所遭受的巨大且往往是毀滅性影響的首要回應。

The push for **ESG (Environmental, Social, and Governance) strategies in the fashion textile industry isn't just a trend; it's a fundamental response to the industry's massive and often detrimental impact on the planet and its people.**



**THE FASHION INDUSTRY IS RESPONSIBLE FOR
8-10% OF GLOBAL CARBON EMISSIONS.**

環境必要性：時尚產業是主要的污染源
(碳排放、水資源消耗、廢棄物)。

ESG策略推動循環經濟模式、使用永續材料和提升資源效率，以應對氣候變遷並保護生態系統。

Environmental Imperative (The "E" in ESG)

The fashion industry is a major polluter (carbon, water, waste). ESG drives circular economy models, sustainable materials, and resource efficiency to combat climate change and protect ecosystems.



社會責任：該行業存在勞工剝削和人權問題的歷史。

ESG策略旨在確保公平工資、安全工作條件、供應鏈透明度以及尊重社區權利。

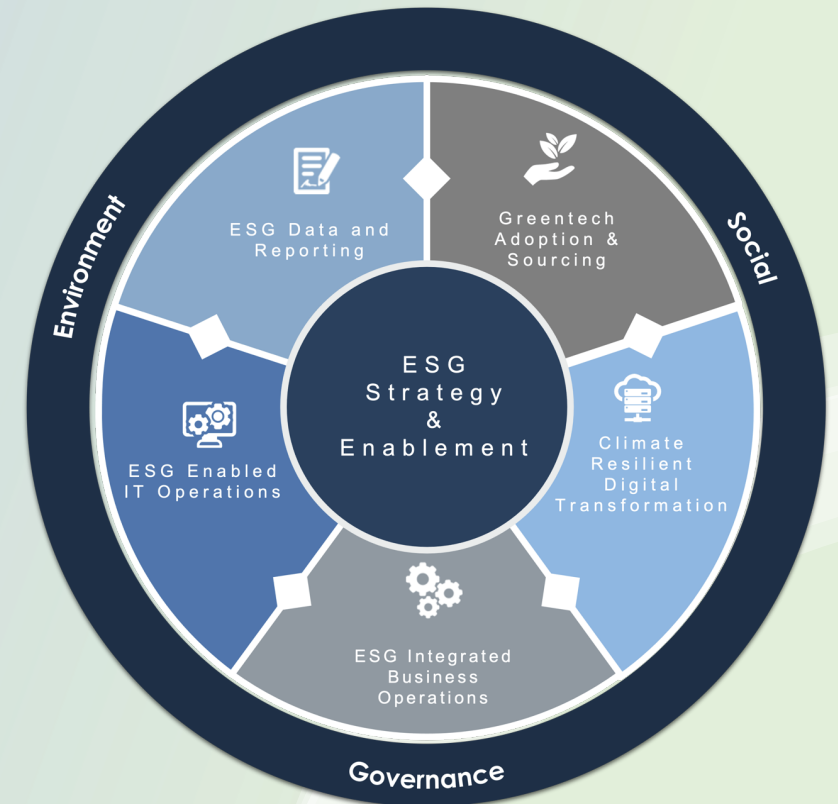
Social Responsibility (The "S" in ESG) The industry has a history of labour exploitation and human rights issues. ESG ensures fair wages, safe working conditions, supply chain transparency, and respect for community rights.



治理與透明度：複雜且不透明的供應鏈為不良行為提供了土壤。ESG要求強有力的監管、可追溯性、反腐敗措施和真實的報告，以防止「漂綠」並建立信任。

Governance & Transparency (The "G" in ESG)

Complex, opaque supply chains enable bad practices. ESG requires strong oversight, traceability, anti-corruption measures, and authentic reporting to prevent greenwashing and build trust.



商業價值：除了道德層面，ESG對於風險管理、吸引投資、遵守新法規、推動創新、滿足消費者和員工對責任感的期望至關重要。


Business Value: Beyond ethics, ESG is vital for risk management, attracting investment, complying with new regulations, driving innovation, and meeting consumer and employee demand for responsibility.



低碳紡織品的真正優勢和隱藏劣勢

The Advantages and Disadvantages of Low Carbon Textiles





對「可持續」紡織品的現實檢驗
A Reality Check on "Sustainable" Textiles

The Current State: Fashion's Carbon Tunnel Vision

- 時尚產業約佔全球碳排放量的10%。
 - 各大品牌正競相透過減少範圍3（材料）排放來達成淨零排放目標。
 - 大規模轉向「低碳」材料以降低碳足跡。
 - 例如：再生聚酯纖維（rPET）、萊賽爾纖維（天絲）、大麻纖維、農業廢棄纖維（橙纖維、鳳梨纖維）。
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- THE FASHION INDUSTRY IS RESPONSIBLE FOR ~10% OF GLOBAL CARBON EMISSIONS.
 - **BRANDS ARE RACING TO MEET NET ZERO TARGETS BY TACKLING SCOPE 3 EMISSIONS (MATERIALS).**
 - **A MASSIVE PIVOT TOWARD "LOW CARBON" MATERIALS TO LOWER THE CARBON FOOTPRINT.**
 - RECYCLED POLYESTER (RPET), LYOCELL (TENCEL), HEMP, AGRICULTURAL WASTE FIBERS (ORANGE FIBER, PIÑATEX).



The Advantages of Low Carbon Textiles (The Promise)

- **減少對化石燃料的依賴：**再生聚酯纖維比再生纖維消耗的能源更少；生物基纖維則減少了对石油的依賴。
- **提高土地和水資源利用效率：**一些新一代材料（如蘑菇皮革或實驗室培育纖維）所需的土地和水資源遠低於傳統棉花或畜牧業。
- **循環利用潛力：**專為回收而設計的材料（單一材料）可減少垃圾掩埋場的負擔。
- **吸引消費者：**滿足日益增長的有意識的消費者市場需求。

- **Reduced Fossil Fuel Dependence:** Recycled polyester uses less energy than virgin; bio-based fibers move away from petroleum.
- **Land & Water Efficiency:** Some Next-Gen materials (like mushroom leather or lab-grown fibers) use a fraction of the land and water compared to conventional cotton or livestock farming.
- **Circularity Potential:** Materials designed for recycling (mono-materials) keep waste out of landfills.
- **Consumer Appeal:** Taps into the growing market of eco-conscious buyers.

The Disadvantages of Low Carbon Textiles (The Technical Reality)

- 微塑膠污染：再生聚酯（rPET）仍然是塑膠。每次洗滌都會隱藏微纖維，這些微纖維最終會進入海洋。
 - 報處理問題：生物基皮革（如蘑菇/仙人掌皮革）通常與合成背襯（如聚氨酯）混合使用，導致不可生物降解且不可恢復。
 - 化學物質的危害：加工大麻或萊賽爾纖維需要大量的化學物質成分（即使是閉環加工也需要溶劑），才能將植物轉化為脆弱的織物。
 - 耐用性問題：天然低碳替代產品的一些使用壽命可能比合成材料短，導致更快的廢棄（這與循環利用的概念相悖）。
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- **Microplastic Pollution:** Recycled polyester (rPET) is still plastic. It sheds microfibers that enter the ocean with every wash.
 - **End-of-Life Confusion:** Bio-fabricated leathers (mushroom/cactus) are often mixed with synthetic backings (PU), making them non-biodegradable and non-recyclable.
 - **Chemical Intensity:** Processing hemp or Lyocell requires significant chemical inputs (solvents, even if closed-loop) to turn the plant into soft fabric.
 - **Durability Concerns:** Some natural low-carbon alternatives may have shorter lifespans than synthetics, leading to faster disposal (contradicting circularity).

ESG中被忽略的“S”及“G”(紡織品社會劣勢及紡織品管治理劣勢)

The Missing “S” in ESG (Social Disadvantages in Textiles)

The Missing “G” in ESG (Governance Disadvantages in Textiles)

ESG

The Missing "S" in ESG (Social Disadvantages in Textiles)

- 低碳並不等於公平的薪資或安全的工作環境。
- **Low carbon does not equal fair wages or safe working conditions.**



The Missing "S" in ESG (Social Disadvantages in Textiles)

- 潛在的社會弊端：有機棉悖論：有機農業需要更多的人工勞動（例如手工除草而非使用除草劑）。如果工人沒有因為這些額外的勞動獲得公平的報酬，「低碳」就建立在剝削之上。
- 土地流失：種植用於「純素皮革」或「生物纖維」的作物會與糧食作物爭奪土地，從而推高發展中國家當地社區的糧食價格。
- 性別盲視：紡織工人大多是女性。低碳倡議往往專注於技術，卻忽略了對孕產婦健康、公平工資或為這些女性提供安全住房的投資。
- 手工藝生計的喪失：用「高科技」低碳機器取代傳統的低碳方法（如手織布或天然靛藍染色）可能會抹殺文化遺產和就業機會。

- **Potential Social Disadvantages:** Organic Cotton Paradox: Organic farming requires more manual labor (weeding by hand instead of using herbicides). If workers aren't paid fairly for this extra labor, "low carbon" is built on exploitation.
- **Land Displacement:** Growing crops for "vegan leathers" or "bio-fibers" can compete with food crops, driving up food prices for local communities in developing nations.
- **Gender Blindness:** The majority of textile workers are women. Low carbon initiatives often focus on technology, ignoring investments in maternal health, fair wages, or safe housing for these women.
- **Loss of Artisanal Livelihood:** Replacing traditional low-carbon methods (like handloom or natural indigo dyeing) with "high-tech" low-carbon machines can erase cultural heritage and jobs.

The Missing "G" in ESG (Governance Disadvantages in Textiles)

缺乏透明度和驗證, 潛在的治理缺陷, 低碳聲明變得毫無意義。

Without transparency and verification, low carbon claims are useless, resulting potential Governance Disadvantages



The Missing "G" in ESG (Governance Disadvantages in Textiles)

- 認證混亂：一件衣服可能採用「低碳天絲」製成，但染色過程卻在排放有毒廢水的工廠進行。究竟哪個認證才能真正監管整個流程？
 - 品質平衡詐欺：在再生材料方面，品牌可能會聲稱他們使用了低碳再生聚酯纖維，但由於「質量平衡」方面的漏洞，實際服裝中可能根本不含任何再生材料。
 - 數據不透明：品牌宣稱使用「低碳」材料，但由於沒有公佈完整的生命週期評估 (LCA) 數據，投資者無法驗證碳排放量是真正減少了，還是僅僅透過可疑的碳信用額度抵消了。
 - 供應商黑箱：低碳材料通常來自新興且複雜的供應鏈。誰來審核新興經濟體中這些新廠是否有腐敗或賄賂行為？
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- **Certification Chaos:** A garment can be made of "low carbon Tencel" but dyed in a facility that dumps toxic wastewater. Which certification governs the whole?
 - **Mass Balance Fraud:** In recycled content, brands may claim they are using low-carbon recycled poly, but due to "mass balance" loopholes, the actual garment contains zero recycled material.
 - **Data Opacity:** Brands announce "lower carbon" materials, but without publishing the full LCA (Life Cycle Assessment) data, investors can't verify if the carbon was reduced or just offset with dubious credits.
 - **Supplier Black boxes:** Low carbon materials often come from new, complex supply chains. Who is auditing the new factories in emerging economies for corruption or bribery?

案例研究 #1：「低碳」聚酯陷阱
案例研究 #1：「生態」棉花農場

Case Study #1: The "Low Carbon" Polyester Trap
Case Study #2: The "Eco" Cotton Farm

Case Study: The "Low Carbon" Polyester Trap

情境：某品牌推出“永續系列”，採用100%再生聚酯纖維（rPET），該纖維由塑膠瓶回收製成。

- **低碳優勢：**與原生聚酯纖維相比，rPET的能耗降低約59%（碳排放）
- **缺失的「社會」現實：**rPET的原料來自非正式的拾荒者，他們不受勞動法保護，沒有醫療保險，並且長期暴露於有毒氣體中（社會責任缺失）
- **缺少的“治理”現實：**該品牌聲稱實踐“循環經濟”，但面料仍然是塑料，使用後無法再次回收利用（降級回收），而且拾荒者的權益也無法得到保障（治理失敗）

The Scenario:

A brand launches a "Sustainable Collection" using 100% Recycled Polyester (rPET) from plastic bottles.

- **The Low Carbon Advantage:**
The rPET uses ~59% less energy compared to virgin polyester. (Carbon win)
- **The Missing "S" Reality:**
The rPET was sourced from informal waste pickers who are not protected by labor laws, have no health insurance, and are exposed to toxic fumes. (Social Failure)
- **The Missing "G" Reality:**
The brand claims "circular economy," but the fabric is still plastic and cannot be recycled again after use (downcycling), and there is no verifiable chain of custody for the pickers' rights. (Governance Failure)

Case Study: The "Eco" Cotton Farm

情境：某奢侈品牌採購「低碳有機棉」。

- 低碳優勢：不使用合成肥料意味著更低的二氧化碳排放量（碳排放）
- 缺乏的「社會」現實：在棉花淡季，種植這種棉花的農民甚至買不起食物，因為該品牌採購部門會延遲六個月支付有機棉溢價（社會責任缺失）
- 缺失的「治理」現實：有機認證雖然存在，但該品牌缺乏相應的管理機制，無法確保其在行銷中承諾的「生活工資」真正惠及農民（治理失靈）

The Scenario:

A luxury brand sources "Low Carbon Organic Cotton."

- **The Low Carbon Advantage:**
No synthetic fertilizers mean lower CO₂ emissions. (Carbon win)
- **The Missing "S" Reality:**
During the off-season, the farmers growing this cotton cannot afford food because the premium paid for organic cotton is delayed by 6 months by the brand's procurement department. (Social Failure)
- **The Missing "G" Reality:**
The organic certificate exists, but the brand has no governance protocol to ensure the "living wage" promises made in their marketing are actually reaching the farmers. (Governance Failure)

解決方案：紡織業的“公正轉型”

The Solution: The "Just Transition" in Textiles

The Solution: The "Just Transition" in Textiles

整合社會指標：不要因為價格就購買低碳材料。
供應商的生活工資、性別平等和結社自由評分應納入考慮。

Integrate Social Metrics: Stop buying low carbon materials solely on price.
Include supplier scores for Living Wage, Gender, Equity, and Freedom of Association.

Human Rights



Human Rights



Gender Equality



Racial Justice



Justice



Voting Rights



Democracy



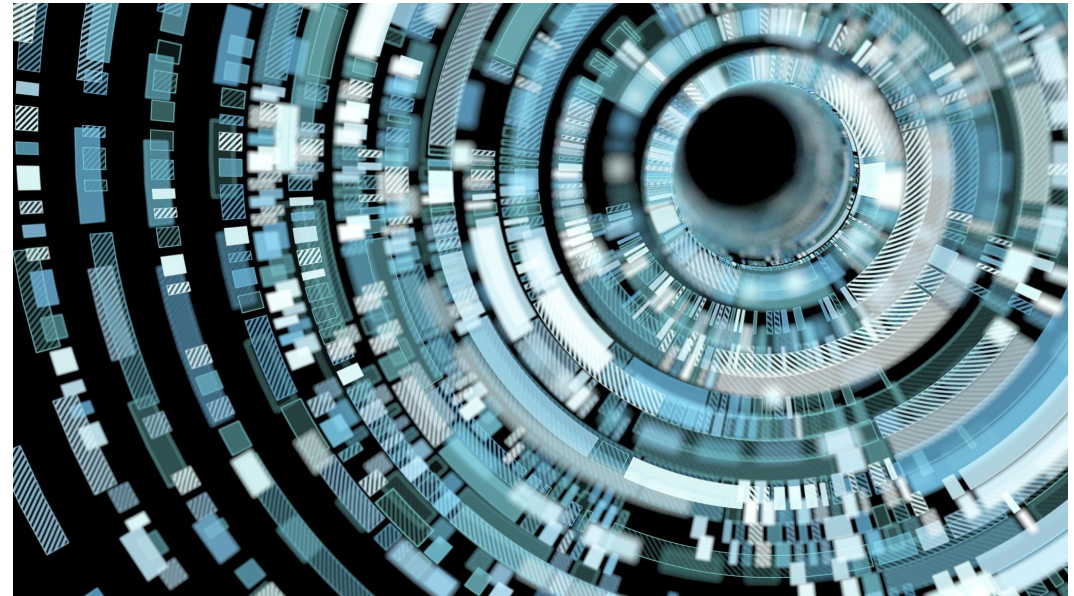
Civic Engagement



The Solution: The "Just Transition" in Textiles

治理技術：使用區塊鏈/數位產品護照不僅是為了“溯源”，更是為了證明原材料階段的公平勞動實踐。

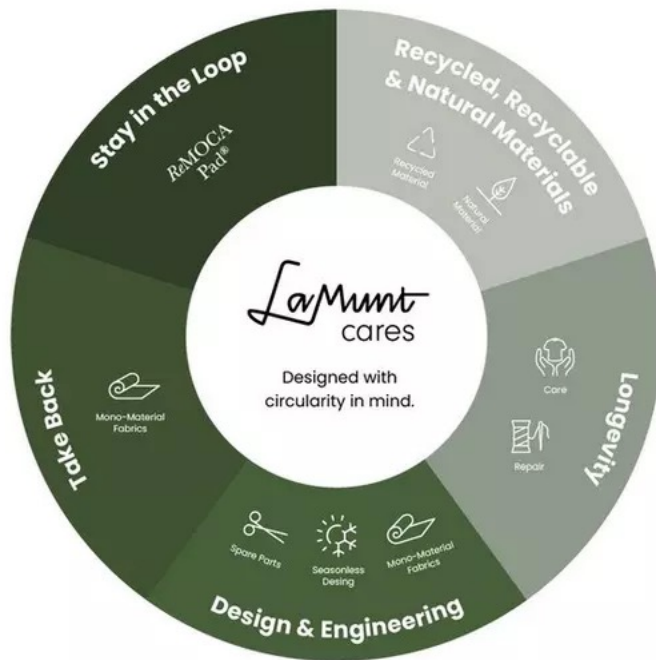
Governance Tech: Use Blockchain/Digital Product Passports not just for "provenance," but to prove fair labor practices at the raw material stage.



The Solution: The "Just Transition" in Textiles

整體設計：如果某種材料無法再次回收利用，就不要因為它是「低碳」材料而選擇它。設計時應兼顧可回收性和耐用性，以保護消費者的錢包。

Holistic Design: Don't pick a material because it's "low carbon" if it can't be recycled again. Design for cyclability AND durability to protect the consumer's wallet.



The Solution: The "Just Transition" in Textiles

政策與採購：時尚買家必須要求其材料供應商提供三重底線報告（人、地球、利潤），而不僅僅是碳排放揭露。

Policy & Procurement: Fashion buyers must demand Triple Bottom Line reporting (People, Planet, Profit) from their material suppliers, not just Carbon Disclosures.



重新定義“永續材料”

Redefining “Sustainable Materials”

Redefining "Sustainable Material"

舊定義：一種二氧化碳排放量較低的材料。

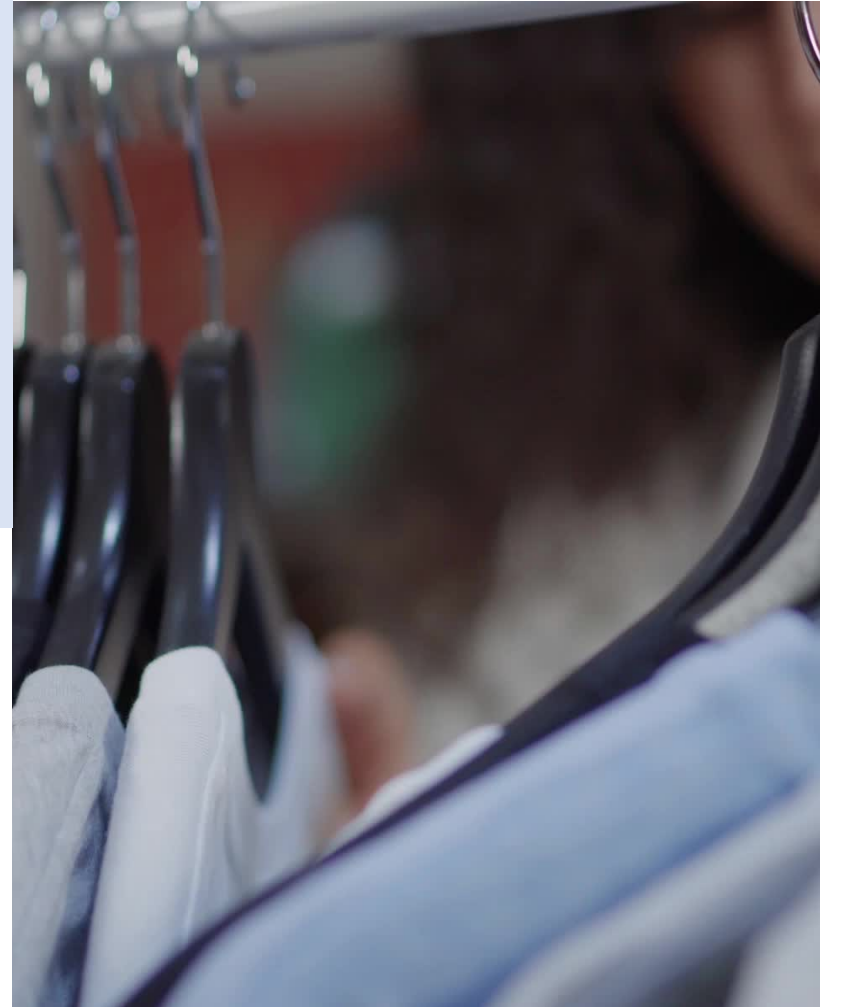
新定義：一種二氧化碳排放量較低且，向農民支付體面工資且，擁有透明、可審計的管理系統的資料。

我們不能讓時尚產業以犧牲窮人的利益為代價來實現脫碳。
紡織業的未來，必須是低碳+高公平。

Old Definition: A material that emits less CO₂.

New Definition: A material that emits less CO₂ AND pays its farmers a living wage AND has transparent, auditable governance.

We cannot decarbonize the fashion industry on the backs of the poor. The future of textiles must be Low Carbon + High Justice.



Call to Action:

我們必須將關注點從以碳排放為中心擴展到以環境、社會和治理為核心的整體考量。

Balancing the Triangle:
We must expand our focus from Carbon-Centric to ESG-Holistic.





Thank you !

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