Alternate Development Services
RE-UPTAKE • CLEAN ENERGY • INDUSTRIAL DECARBONIZATION

WORKSHOP PROCEEDINGS REPORT • CAPACITY BUILDING SERIES

2-Day Capacity Building Workshop on

FIFA (Fossil-free Interventions for Apparel)

Industry Focus: Sports Apparel & Goods Sector

Mashhood Urfi
(mashhood.ads@gmail.com)

Muhammad Usman Bin Ahmed

15–16 May 2026
Javson Hotel, Defence Rd., Sialkot, Pakistan.

Table of Contents

List of Acronyms

ADB	Asian Development Bank
ADS	Alternate Development Services
BSCI	Business Social Compliance Initiative
CDP	Carbon Disclosure Project
CEMS	Continuous Emission Monitoring Systems
CO_2e	Carbon Dioxide Equivalent
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive (EU)
CSDDD	Corporate Sustainability Due Diligence Directive
CTAP	Climate Transition Action Plan
DEFRA	UK Department for Environment, Food & Rural Affairs
EPM	Environmentally Preferred Material
ESRS	European Sustainability Reporting Standards
ESG	Environmental, Social, and Governance
ETP	Effluent Treatment Plant
FFC	Fair Factories Clearinghouse
FIFA	Fossil-free Interventions for Apparel (ADS Program)
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
GSP+	Generalized Scheme of Preferences Plus (EU–Pakistan trade)
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
IFRS	International Financial Reporting Standards
ILO	International Labor Organization
IPCC	Intergovernmental Panel on Climate Change
IROs	Impacts, Risks, and Opportunities
ISSB	International Sustainability Standards Board
ODS	Ozone Depleting Substances
OHS	Occupational Health and Safety
PCRWR	Pakistan Council of Research in Water Resources
PKR	Pakistani Rupee
POSH	Prevention of Sexual Harassment
rPET	Recycled Polyethylene Terephthalate (recycled polyester)
SBTi	Science Based Targets initiative

SECP	Securities and Exchange Commission of Pakistan
SMETA	Sedex Members Ethical Trade Audit
tCO_2e	Tonnes of Carbon Dioxide Equivalent
VFD	Variable Frequency Drive
ZDHC	Zero Discharge of Hazardous Chemicals

About Alternate Development Services (ADS)

Based in Islamabad, **Alternate Development Services (ADS)** is a research, advocacy, campaigning, and capacity-building organization with deep experience in climate change, energy transition, environmental sustainability, and renewable energy uptake pathways. Through its energy and climate work, ADS supports evidence-based policy dialogue on renewable energy, industrial decarbonization, and equitable development in Pakistan. The organization's enduring mission is to provide research, capacity building, and advocacy services to government and non-government organizations for just and sustainable social development, with a vision of enabling an informed policy environment that supports people-centered development.

1. Background, Purpose & Outcome of the Workshop

Background

Pakistan's sports apparel sector stands at a critical crossroads. As one of the country's most strategically significant export-oriented industries; with Sialkot at its heart; the sector faces mounting pressure from international buyers, tightening regulatory frameworks, and discerning global markets to demonstrate a credible and measurable commitment to clean energy adoption and industrial decarbonization. The sector's long-term competitiveness, and its very access to premium markets, depends on how quickly and effectively it can transition away from fossil-fuel-dependent production processes toward sustainable, low-emission alternatives.

In response, ADS designed **FIFA (Fossil-free Interventions for Apparel)**; a structured, firm-specific initiative that supports sports apparel manufacturers, factory owners, industry associations, and investors in navigating the clean energy transition with confidence and clarity. FIFA examines each participating firm's unique energy profile and delivers a tailored decarbonization pathway aligned with international standards, client expectations, and market realities.

Purpose

The primary purpose of this two-day capacity-building workshop was to:

- Build foundational understanding of ESG and its evolution from voluntary CSR to a commercial imperative for market survival.
- Equip participants to navigate global buyer sustainability requirements from Nike, Adidas, and PUMA, and translate factory performance into internationally recognized reporting formats.
- Develop practical skills in carbon footprint measurement, Scope 1, 2, and 3 emission identification, and decarbonization scenario planning.
- Introduce participants to practical, low-cost (Kaizen) approaches to measuring and reducing industrial air pollution on the factory floor.
- Empower sustainability and compliance teams to move from awareness to structured implementation.

Outcome

As a result of the workshop, participants developed a substantially stronger and more practical understanding of the ESG landscape and its direct relevance to the Sialkot sports apparel sector. They gained clarity on how to respond to buyer-driven sustainability requirements, measure and communicate their factory's carbon footprint, and identify and act on decarbonization opportunities using available tools. Hands-on group activities bridged the gap between theory and real-world application, enabling participants to simulate compliance negotiations, ESG reporting, emission calculations, and decarbonization scenario planning within their own organizational contexts. The workshop reinforced that the path from compliance to competitive advantage is both achievable and commercially rewarding.

2. Overview

Day 01 | 15 May 2026

i. ESG in Global Apparel Supply Chains; Navigating Compliance & Commercial Imperatives

Trainer: Dr. Zaeem bin Babar | Time: 09:45 – 01:30 hrs. | Core Idea: From Compliance to Competitive Advantage

This session laid the conceptual and practical foundation of the two-day programme. Rather than treating ESG as a regulatory obligation, the trainer reframed it as a strategic lever for winning global market share. Participants explored ESG's three pillars; Environmental, Social, and Governance; through a sports apparel lens, examined Pakistan's evolving regulatory timeline including the CSR Act 2026, understood the commercial risk of losing GSP+ duty-free EU access, and analyzed real-world process emission hotspots specific to Sialkot. The session included two highly participatory group activities: a Risk Scavenger Hunt and The Buyer's Hot Seat role play.

ii. Buyer Requirements Mapping, Sustainability Reporting & Regulatory Interplay

Trainer: Dr. Javaria Shakeel | Time: 02:30 – 05:00 hrs. | Core Idea: Speaking the Buyer's Language

The afternoon session focused on how factories translate operational performance into the data, dashboards, and reports that international buyers demand. Participants mapped the sustainability expectations of Nike, Adidas, and PUMA against major reporting frameworks (GRI, CSRD/ESRS, IFRS S1/S2, CDP, SBTi) and applied learning through a structured Buyer-Aligned ESG Reporting Assessment and a comprehensive Buyer Requirement and Reporting Mapping exercise.

Day 02 | 16 May 2026

iii. Decarbonization & Emission Identification; Understanding Carbon Footprint & GHG Emissions

Trainer: Dr. Javaria Shakeel | Time: 09:30 – 01:00 hrs. | Core Idea: The Math of Decarbonization

The second day opened with a deep dive into carbon footprinting. Participants learned to classify emissions across Scopes 1, 2, and 3; understand emission factors and their hierarchy; and use a purpose-built Carbon Footprint Calculator to estimate their factory's baseline and model solar PV and rPET substitution scenarios. A worked example demonstrated a combined 18.4% emission reduction from a baseline of 4,492 tCO_2e/year.

iv. Measuring and Reducing Industrial Pollution (Emissions and Air Quality Management)

Trainer: Dr. Zaeem bin Babar | Time: 02:00 – 04:35 hrs. | Core Idea: Minimizing Emissions; Kaizen Fixes

The final session brought all learning back to the factory floor, covering industrial air quality challenges, pollutant mapping for sports apparel, microfiber generation, CEMS and low-cost sensor deployment, and practical Kaizen-based solutions that simultaneously improve worker health, operational efficiency, and regulatory compliance. The day concluded with interactive exercise and certificates distribution.

3. Workshop Agenda

Day 01: 15 May 2026

Time	Topic / Subject	Trainer
09:30 – 09:45	Brief Introduction of Trainers & Attendees (Name, Designation, Company, Hobby, Recent Watch)	ADS Team
09:45 – 11:15	**ESG in Global Apparel Supply Chains: Navigating Compliance & Commercial Imperatives** Foundations: Sustainability, CSR, Commercial Imperative · Defining ESG in Sports Apparel · Key Global Regulations & Pakistan · Business Case: Green Factories · Process Hotspots: Emissions in Apparel Manufacturing · Sialkot Context: Regional Risks and Gender Gap	Dr. Zaeem bin Babar
11:15 – 11:45	*Tea Break*	—
11:45 – 12:15	**Activity 1: Risk Scavenger Hunt** Groups identify 2–3 risks per factory profile and propose practical mitigation strategies	Dr. Zaeem bin Babar
12:15 – 01:00	**Case Study: Adidas Legacy** Financials, Green Premium & Strategic Partnerships · Practical Implementation Roadmap	Dr. Zaeem bin Babar
01:00 – 01:30	**Activity 2: The Buyer's Hot Seat (Role Play)** Team A (Factory Owners) vs. Team B (Global Brand Buyers) — negotiating a $2M contract with Green Premium	Dr. Zaeem bin Babar
01:30 – 02:30	*Lunch Break*	—
02:30 – 03:15	**Buyer Requirements Mapping, Sustainability Reporting & Regulatory Interplay** Global Buyer Expectations · ESG, Climate & Responsible Sourcing · GRI, IFRS, CSRD, ESRS, CDP & SBTi · Regulatory Interplay · Reporting Templates & Dashboard Basics · Mini Case Studies	Dr. Javaria Shakeel
03:15 – 04:30	**Activity 3: Buyer-Aligned ESG Reporting Assessment & Framework Crosswalk** Analyze buyer expectations → Evaluate KPI readiness → Develop 12-month ESG improvement roadmap; mapping (GRI / ESRS / IFRS)	Dr. Zaeem & Dr. Javaria

Day 02 — 16 May 2026

Time	Topic / Subject	Trainer
09:30 – 11:00	**Decarbonization & Emission Identification: Understanding Carbon Footprint & GHG Emissions** Scope 1, 2 & 3 Classification · Emission Source Identification · Calculation Basics · Hotspot Analysis · Decarbonization Opportunities · Brand case studies (Adidas CTAP, Puma RE:FIBRE)	Dr. Javaria Shakeel
11:00 – 11:30	*Tea Break*	—
11:30 – 01:00	**Activity 4: Decarbonize Your Chain — Carbon Footprint Calculator Exercise** Identify emission sources · Categorize Scope 1, 2 & 3 · Estimate baseline · Identify hotspots · Model Solar PV & rPET decarbonization scenarios	Dr. Javaria Shakeel

01:00 – 02:00	*Lunch Break*	—
02:00 – 04:15	**Measuring and Reducing Industrial Pollution (Emissions & Air Quality Management)** Health–Wealth Link · Pollutant Mapping in Sports Apparel · Microfiber Generation · Manual vs. CEMS Monitoring · Low-Cost Sensors · Kaizen-Based Solutions	Dr. Zaeem bin Babar
04:15 – 04:35	**Interactive Exercise**	Dr. Zaeem bin Babar
04:35 – 05:00	Certificate Distribution & Group Photo	ADS Team

4. Session Summaries

Day 1 | Session 01: ESG in Global Apparel Supply Chains | Dr. Zaeem bin Babar

Foundations: Sustainability, CSR & ESG

Dr. Zaeem bin Babar opened the workshop by reframing ESG; not as a compliance checklist, but as a strategic commercial tool. He traced the evolution from traditional CSR (voluntary, philanthropy-based) to ESG as a fully integrated Commercial Imperative: if you don't comply, you lose contracts. ESG was defined across three dimensions within the sports apparel context: Environmental (ZDHC compliance in dyeing, carbon footprint, water recycling, fabric circularity); Social (OHS; needle guards, minimum wage, gender equity on the factory floor); and Governance (professional board oversight, anti-bribery policies, no unauthorized subcontracting).

Pakistan's Regulatory Timeline & International Obligations

Participants were walked through Pakistan's ESG regulatory evolution: from the 2013 CSR General Order to the landmark **CSR Act 2026** passed by the National Assembly in early 2026, making ESG reporting mandatory. The SECP ESG Voluntary Disclosure Guidelines (2024, updated December 2025) bridge toward mandatory audit and assurance of sustainability reports by 2027–2029. The session highlighted the commercial risk embedded in the EU's **GSP+ arrangement**, which provides Pakistan approximately 12% duty-free access to EU markets; conditional on compliance with 27 international conventions:

- **UNCAC**: mandating anti-bribery policies in factories.
- **Montreal Protocol (1987)**: phasing out Ozone Depleting Substances (CFCs, HCFCs) used in older chillers and AC equipment.
- **Basel Convention (1989)**: restricting cross-border hazardous waste disposal.

Emission Process Hotspots: Sialkot Context

The trainer mapped specific emission hotspots across the apparel manufacturing value chain. Weaving is energy-intensive due to air-jet looms requiring compressed air and humidification systems at 70–80% to prevent dry yarn from snapping. Wet processing represents the largest carbon cost, requiring heating thousands of liters of water to 130°C using boilers. Three regional risks specific to Sialkot/Punjab were highlighted:

- **Groundwater depletion** at 0.7 meters per year over 20 years (PCRWR), with dyeing units using 120L/kg fabric against the ESG standard of under 50L/kg.
- **Unauthorized subcontracting to unapproved village sheds**: the number one cause of failed buyer audits and immediate blacklisting, as buyers cannot verify child labor or safety conditions.
- **Gender gap**: women constitute 70% of stitchers but under 5% of supervisory and managerial positions (Source: ILO Pakistan Decent Work Country Programme), now directly assessed as a Social and Governance ESG risk by global buyers.

Case Study: Adidas Legacy & the Path to Strategic Partnership

The 1996 Atlanta Olympics exposure of child labor in Sialkot's football stitching operations triggered a global boycott and nearly caused Adidas to exit Pakistan entirely. The response; pioneering the **Fair Factories Clearinghouse (FFC)** with real-time digital traceability linking every ball to a specific audited stitching center and worker ID; transformed Sialkot. Today approximately 50 Sialkot units are considered "World Class" as a direct result. The trainer illustrated the difference between being a **Vendor** (replaceable, competes on price) and a **Strategic Partner** (co-invests in ESG with the brand, qualifies for co-financing of solar or ETP, is "too clean to quit"). ESG-certified factories can charge a verified **Green Premium of 3–8%** per unit (BCG, 2023) and qualify for lighter self-assessment audit processes.

Practical Implementation Roadmap

Step 1; Baseline Audit: GAP analysis covering social performance (BSCI/SMETA) and environmental performance (Higg Index), identifying gaps such as untracked steam leaks or per-machine electricity data.

Step 2; Policy Decisions: Formalizing board-level rules on anti-corruption (aligned with UNCAC), Prevention of Sexual Harassment (POSH), and Responsible Sourcing Policies for own suppliers.

Step 3; Technology Upgrades: Moving beyond LED lights to Variable Frequency Drives on rotors, RO water recycling plants, heat exchangers for dyeing effluent, and water meters for consumption tracking.

Activities conducted in Day 1 – Session 1

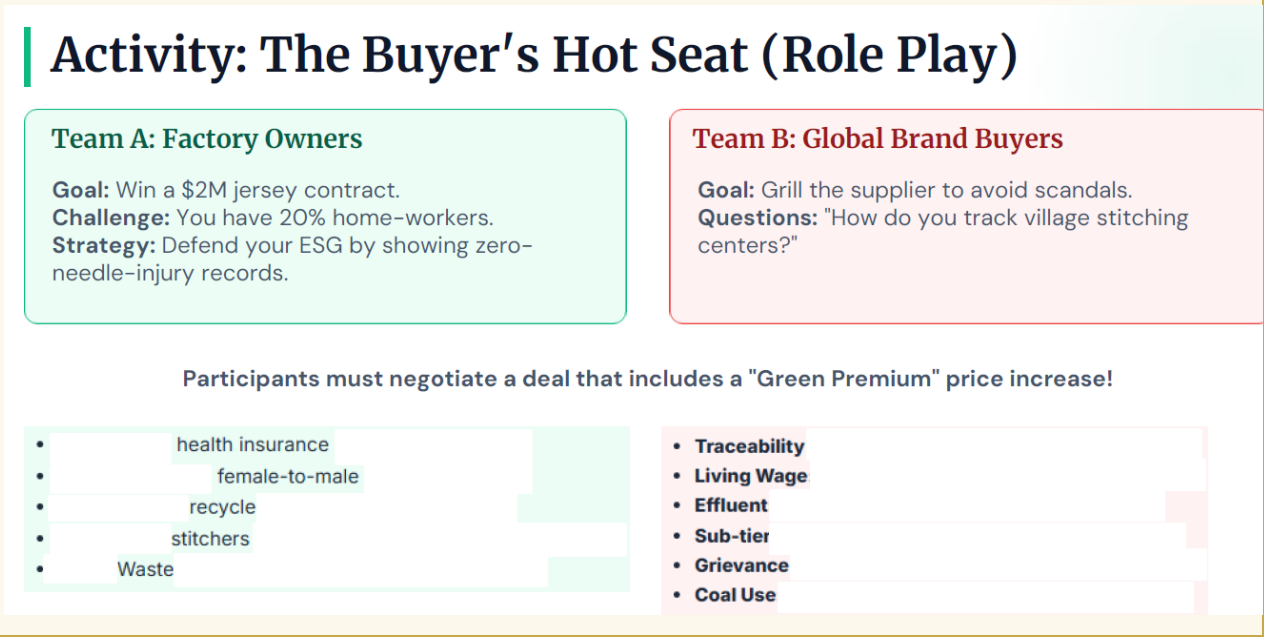
> **Activity 1: Risk Scavenger Hunt**
> Participants were divided into groups; each assigned a factory profile. Each group identified 2–3 specific ESG risks (environmental, social, or governance) and proposed practical, actionable mitigation strategies.

The exercise surfaced issues ranging from chemical handling and water usage to home-worker tracking and audit documentation gaps, prompting lively cross-group discussion on practical solutions.

Factory Profile Excerpt	Primary Risk (E, S, G)	Level	Mitigation Step
1. Unit uses village women for football stitching without contracts.	Child Labor / Lack of Traceability (S)	High	Biometric registration & central village centers.
2. Fabric dyeing unit uses local wood for boilers.	Deforestation / Air Pollution (E)	High	Transition to biomass pellets or solar-steam.
3. Factory floor has 400 workers but only 1 fire exit.	OHS / Fire Safety (S)	High	Install external fire escape stairs immediately.
4. Production manager is factory owner's nephew; no HR policy.	Governance / Nepotism (G)	Med	Draft formal HR hiring & grievance policy.
5. Chemical waste is dumped in the local municipal drain.	Environmental Contamination (E)	High	Install Effluent Treatment Plant (ETP).

Activity 2: The Buyer's Hot Seat (Role Play)

This high-energy role play divided participants into two teams: Team A (Factory Owners) tasked with winning a $2 million jersey contract while defending ESG credentials despite 20% home-workers; and Team B (Global Brand Buyers) conducting a rigorous interrogation, asking probing questions such as "How do you track village stitching centers?" Both teams negotiated a final deal including a Green Premium price increase. The creative dialogue generated significant insight into the commercial stakes of sustainability preparedness, in terms of health standards, women and child labor, recyclability etc.



Day 1 | Session 02: Buyer Requirements Mapping & Regulatory Interplay | Dr. Javaria Shakeel

Global Sustainability Pressure Chain

Dr. Javaria Shakeel established that even with limited local regulations, Pakistani exporters face intense international ESG demands through their buyer relationships. The pressure flows downstream through the entire supply chain: the EU Green Deal mandates disclosure for large companies, which cascade requirements to Tier 1 and Tier 2 suppliers in countries like Pakistan. Key global drivers include climate change accountability, EU mandatory disclosures, investor ESG ratings tied to financing, and rising ethical consumer demand.

Global Buyer Sustainability Expectations: Nike, Adidas & PUMA

The session provided a granular breakdown of what the three dominant sports brands require of their supplier base:

- ✓ **Nike:** 96% of suppliers achieved Level 3 Health & Safety maturity; 96% use renewable electricity; expect Scope 1, 2 & 3 emission inventories, EPM tracking, and gender equity assessments. Nike's Scope 3 emissions (99%+ of total footprint) originate from supplier manufacturing and transportation, making supplier-level action central to their decarbonization strategy.

- ✓ **Adidas:** Aligns supplier requirements with ESRS standards, with focus on workers in the value chain, climate disclosures, circular economy integration, and supply chain traceability. Sustainability statements must be ESRS-aligned.
- ✓ **PUMA:** Has achieved 75% recycled polyester content, 100% renewable electricity at owned entities, 27% renewable energy at Tier 2 suppliers, 91% of core factories with worker representatives, and 87.8% reduction in waste to landfill per footwear pair.

Four Nike case studies were presented covering:

(i) Supplier climate and energy management: RECs, onsite solar, emissions monitoring;

(ii) Circularity and sustainable material integration; recycled polyester, rubber, waste diversion;

(iii) Comprehensive carbon management; supplier scorecards, hotspot identification, net-zero alignment; and

(iv) Water stewardship; ZDHC-aligned wastewater compliance, freshwater intensity reduction.

The Sustainability Reporting Ecosystem

The session mapped the major reporting frameworks and their distinct roles:

- **CSRD**: The EU law mandating sustainability disclosure for over 50,000 companies.
- **ESRS**: The mandatory EU technical standards used to comply with CSRD.
- **GRI**: The global baseline focused on a company's impact on the world (stakeholder-oriented).
- **IFRS S1/S2 (ISSB)**: The global baseline focused on how sustainability affects financial value (investor-oriented).
- **CSDDD**: The EU action mandate for identifying and mitigating actual supply chain risks.
- **CDP & SBTi**: Disclosure and science-based target-setting platforms increasingly required by buyers.

Practical Roadmap for Sialkot Vendors

Phase 1 (0–6 months): Map Scope 1 & 2 emissions, document labour practices under ILO standards, and trace raw material origins for EUDR readiness.

Phase 2 (6–18 months): Align disclosures with GRI and European/German regulations.

Phase 3 (18 months+): Negotiate preferred supplier agreements, apply for SBP green banking credit, pursue Bluesign or Leather Working Group certification, and package the cluster's collective ESG story as a "Sustainable Sialkot" origin brand for co-marketing with global sports brands.

Activities conducted in Day 1 – Session 2

Activity 3: Buyer-Aligned ESG Reporting Assessment & Framework Crosswalk

Scenario: A Sialkot sports company exporting to Nike, Adidas, and PUMA receiving ESG data requests across climate, energy, water, waste, chemicals, social standards, and supply chain traceability.

Using a structured Excel workbook, groups were required to:

(i) Identify which ESG areas are critical, and which gaps create the highest compliance risk;

(ii) Evaluate KPI readiness across all ESG pillars, identifying missing data, weak areas, and high-risk gaps; and

(iii) Develop a 12-month ESG improvement roadmap spanning GHG inventory, energy and water tracking, waste segregation, ZDHC compliance, OHS assessment, supplier documentation, carbon hotspot analysis, solar feasibility, and GRI-aligned reporting.

A Framework Crosswalk table mapped each supplier data area against GRI, CSRD/ESRS, IFRS S1/S2 references, and audit evidence requirements. A second mapping exercise required each participant to select their primary buyer and map that brand's full requirement themes, expected supplier preparation, typical KPIs, and ESG framework interplay in detail.

ESG Pillar	Buyer Expectation	Buyer-Aligned KPI	Reporting Framework Alignment	Unit	Current Status	Target	Priority Level	Evidence Required
Climate	Scope 1 Emissions Tracking	Total Scope 1 Emissions	GRI 305 / IFRS S2 / ESRS E1	tCO2e			Critical	Fuel Consumption Records
Climate	Scope 2 Emissions Tracking	Total Scope 2 Emissions	GRI 305 / IFRS S2 / ESRS E1	tCO2e			Critical	Electricity Bills
Climate	Carbon Intensity	Emissions per Unit Produced	ESRS E1	kgCO2e/product			High	Production Data
Energy	Renewable Energy Transition	Renewable Energy Ratio	GRI 302 / CDP	%			Critical	Solar / RE Certificates
Water	Water Stewardship	Water Consumption Intensity	GRI 303 / ESRS E3	m3/product			High	Water Meter Logs
Water	Wastewater Compliance	Wastewater Compliance Rate	ZDHC / GRI 303	%			Critical	Lab Reports
Waste	Circularity Programs	Waste Recycling Rate	GRI 306 / ESRS E5	%			High	Waste Disposal Records
Waste	Landfill Reduction	Waste to Landfill	GRI 306	tons			High	Waste Tracking Data
Chemicals	ZDHC Compliance	MRSL Compliance Rate	ZDHC	%			Critical	Chemical Inventory
Social	Worker Safety	LTIFR / Injury Rate	GRI 403 / ESRS S1	Rate			Critical	OHS Records
Social	Gender Inclusion	Female Workforce Ratio	GRI 405 / ESRS S1	%			Medium	HR Records
Social	Training & Capacity Building	Average Training Hours	GRI 404	Hours/Employee			Medium	Training Logs
Governance	Supply Chain Transparency	Traceable Supplier Ratio	CSDDD / ESRS	%			Critical	Supplier Documentation
Governance	ESG Oversight	ESG Policy Implementation Status	GRI 2 / IFRS S1	Status			High	Policies & SOPs

Buyer Brand	Priority ESG Area	Expected Supplier Requirement	Current Compliance Status	Gap Identified	Risk Level	Immediate Action Needed
Nike	Climate	Scope 1 & 2 Inventory			Critical	
Nike	Renewable Energy	Solar / RE Transition			High	
adidas	Traceability	Supply Chain Transparency			Critical	
adidas	Circularity	Recycled Material Integration			High	
PUMA	Chemical Compliance	ZDHC Wastewater Compliance			Critical	
PUMA	Worker Engagement	Worker Representation Systems			Medium	

Month	ESG Focus Area	Planned Activity	Expected Deliverable	Buyer Alignment	Responsible Department	KPI Linked
Month 1	Climate	Develop Scope 1 & 2 Data Collection System	Baseline GHG Inventory	Nike / adidas	Sustainability	Scope 1 & 2 Emissions
Month 2	Energy	Collect Electricity & Fuel Data	Energy Consumption Dataset	Nike	Engineering	Energy KPI
Month 3	Water	Install Water Tracking Logs	Water Consumption Dashboard	PUMA	Production	Water Intensity
Month 4	Waste	Waste Segregation & Tracking	Waste Inventory	adidas	Operations	Waste Recycling Rate
Month 5	Chemicals	Chemical Inventory & MRSL Screening	ZDHC Compliance Tracker	PUMA	Chemical Dept.	MRSL Compliance
Month 6	Social	Worker Safety Assessment	OHS Risk Register	Nike	HR/OHS	Injury Rate
Month 7	Governance	Supplier ESG Documentation Collection	Supplier ESG Database	adidas	Procurement	Traceability KPI
Month 8	Climate	Identify Carbon Hotspots	Hotspot Analysis Report	Nike	Sustainability	Carbon Intensity
Month 9	Energy	Renewable Energy Feasibility	Solar Transition Plan	Nike/PUMA	Engineering	Renewable Energy Ratio
Month 10	Reporting	Prepare ESG KPI Dashboard	Buyer ESG Dashboard	All Buyers	Sustainability	All ESG KPIs
Month 11	Reporting	Prepare GRI-Aligned ESG Report	Draft ESG Report	adidas	Sustainability	GRI Reporting
Month 12	Strategy	Develop 3-Year ESG Roadmap	Buyer Readiness Strategy	All Buyers	Management	Strategic ESG KPIs

Day 02 | Session 03: Decarbonization & Emission Identification | Dr. Javaria Shakeel

Carbon Footprint Fundamentals

Dr. Javaria Shakeel opened Day 2 with the principle: **"You cannot manage what you do not measure."** A carbon footprint is the total GHG emissions caused directly and indirectly by an organization, measured in CO_2 equivalent (CO_2e). Participants learned to distinguish between the three emission scopes:

- **Scope 1:** Direct emissions from owned sources; generators, vehicles, boilers, thermic fluid heaters.
- **Scope 2:** Indirect emissions from purchased electricity, steam, or cooling; calculated location-based (national grid factor) or market-based (RECs).
- **Scope 3:** All other indirect value chain emissions across 15 GHG Protocol categories. Most material for sports apparel: Category 1 (purchased goods/raw materials), Category 4 (upstream transport), Category 5 (waste), and Category 9 (downstream transport).

Emission Calculation Methodology

The standard formula is: **Emissions ($kgCO_2e$) = Activity Data × Emission Factor**, converted to tCO_2e by dividing by 1,000. A tiered hierarchy for emission factor selection was established: Tier 1

(supplier-specific primary data), Tier 2 (national databases), Tier 3 (DEFRA/IPCC/Ecoinvent), Tier 4 (industry average proxies). Key Pakistan-specific emission factors applied in training:

- Pakistan grid electricity: 0.45 $kgCO_2e/kWh$ (updated annually)
- Natural gas: 2.00 $kgCO_2e/m^3$ | Diesel: 2.68 $kgCO_2e$/liter
- Virgin polyester: 5.50 $kgCO_2e/kg$ | rPET: 2.50 $kgCO_2e/kg$
- Cotton/fabric: 3.00 $kgCO_2e/kg$ | Chemicals: 4.00 $kgCO_2e/kg$ | Packaging: 1.50 $kgCO_2e/kg$ | Logistics: 0.10 $kgCO_2e$/tonne-km.

Brand Decarbonization Case Studies

- ✓ **Adidas:** Operates under a Climate Transition Action Plan (CTAP) integrated with financial and operational functions; targets a deforestation- and conversion-free (DCF) supply chain by 2030; provides on-the-ground technical advice to Tier 1 and 2 suppliers.
- ✓ **Puma:** Achieved 100% green electricity at all owned entities; produced millions of football jerseys from recycled textile waste (RE:FIBRE initiative); achieved a 17% absolute reduction in Scope 3 purchased goods emissions (2017–2024) and 27% renewable energy penetration at core suppliers.

Activities conducted in Day 2 – Session 1

Activity 4: Justification Role-Play; Supplier vs. Buyer – Emission Factor Justification

1. Activity Objective & Framework

This exercise was structured as an interactive live debate modeling the high-stakes compliance environment that Sialkot exporters face during international brand inspections. The objective was to train factory sustainability teams to defend their corporate carbon footprint reports, validate data traceability, and correctly apply the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard under rigorous third-party scrutiny.

2. Participant Allocation and Briefs

The workshop cohort was split into two opposing stakeholder teams to simulate an authentic corporate audit environment:

- **Team A: The Supplier Sustainability Team:** Assigned the task of defending a recently submitted corporate carbon footprint report for a vertical textile manufacturing facility. Participants had to justify operational boundaries, defend specific Scope 3 category exclusions, and validate the integrity of their emission factor (EF) selections.
- **Team B: The Global Buyer Audit Team:** Assigned the role of international brand auditors. Participants were briefed to aggressively probe structural weaknesses in the supplier's report, challenge data gaps, question geographic anomalies in conversion factors, and verify full alignment with global greenhouse gas standards.

3. The Live Audit Debate & Cross-Examination Dynamic

The simulation centered around a mock review of a carbon report submitted by a textile supplier, which detailed the following operational inventory boundaries:

Reporting Boundary Element	Operational Scope & Category	Boundary Treatment & Source Data Status
Direct Operations	Scope 1: Direct Emissions	Included: On-site natural gas boilers and diesel backup generators.
Purchased Energy	Scope 2: Indirect Emissions	Included: Market-based accounting using supplier Renewable Energy Certificates (RECs).

Material Sourcing	Scope 3, Category 1: Purchased Goods	Included: Raw material tracking for cotton yarn and polyester raw inputs.
Industrial Machinery	Scope 3, Category 2: Capital Goods	**Excluded from Inventory Boundary**.
Energy Supply Chain	Scope 3, Category 3: Fuel & Energy Activities	Not Assessed.
Inbound Logistics	Scope 3, Category 4: Upstream Transport	Included: Inbound raw material road freight logistics.
Employee Travel	Scope 3, Category 7: Employee Commuting	Included: Daily transport tracking for approximately 450 factory workers.
Operational Residuals	Scope 3, Categories 5, 6, 8–15	**Excluded**: Classified as immaterial to overall operations.

The interaction intensified during the live debate phase as Team B (Auditors) systematically cross-examined Team A (Suppliers) using specific structural challenges:

Auditor Challenge on Boundary Exclusions: "Your facility operates in a highly machinery-intensive sector utilizing heavy looms, cutting equipment, and industrial dyeing units. These assets represent massive, embodied carbon. How can you justify completely excluding Category 2 (Capital Goods) from your reporting boundary, and what explicit quantitative threshold was utilized to determine its immateriality?"

Supplier Justification Response: Team A successfully countered by citing specific quantitative screening criteria under the GHG Protocol Scope 3 Standard. Participants argued that a spend-based quantitative assessment proved the facility's annual capital expenditures accounted for less than 0.8% of total Scope 3 emissions, placing it comfortably below their internal 1% materiality threshold. Furthermore, they cross-referenced asset ledgers showing the major production looms were fully depreciated and would not face replacement within the active reporting cycle.

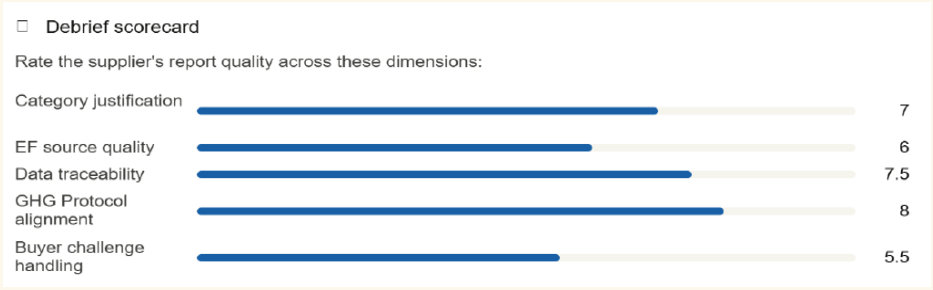
Auditor Challenge on Geographical Relevance: "Your carbon inventory relies heavily on UK DEFRA emission factors. Your production facility is located in Pakistan, where local energy infrastructure, logistics efficiencies, and industrial supply conditions differ fundamentally from Western Europe. Why should we accept a report built on geographically irrelevant data?"

Supplier Justification Response: Team A acknowledged the geographic uncertainty but defended their selection by demonstrating a lack of localized alternatives. They explained that because the national environmental protection agencies had not published a verified, sector-specific emission factor registry for textile operations, they evaluated international peer-reviewed options. DEFRA was selected because it is updated annually, publicly accessible, and widely recognized by international disclosure platforms like the Carbon Disclosure Project (CDP). They proved that these geographic variances were transparently documented within their formal uncertainty analysis.

4. The Debrief & Performance Scorecard

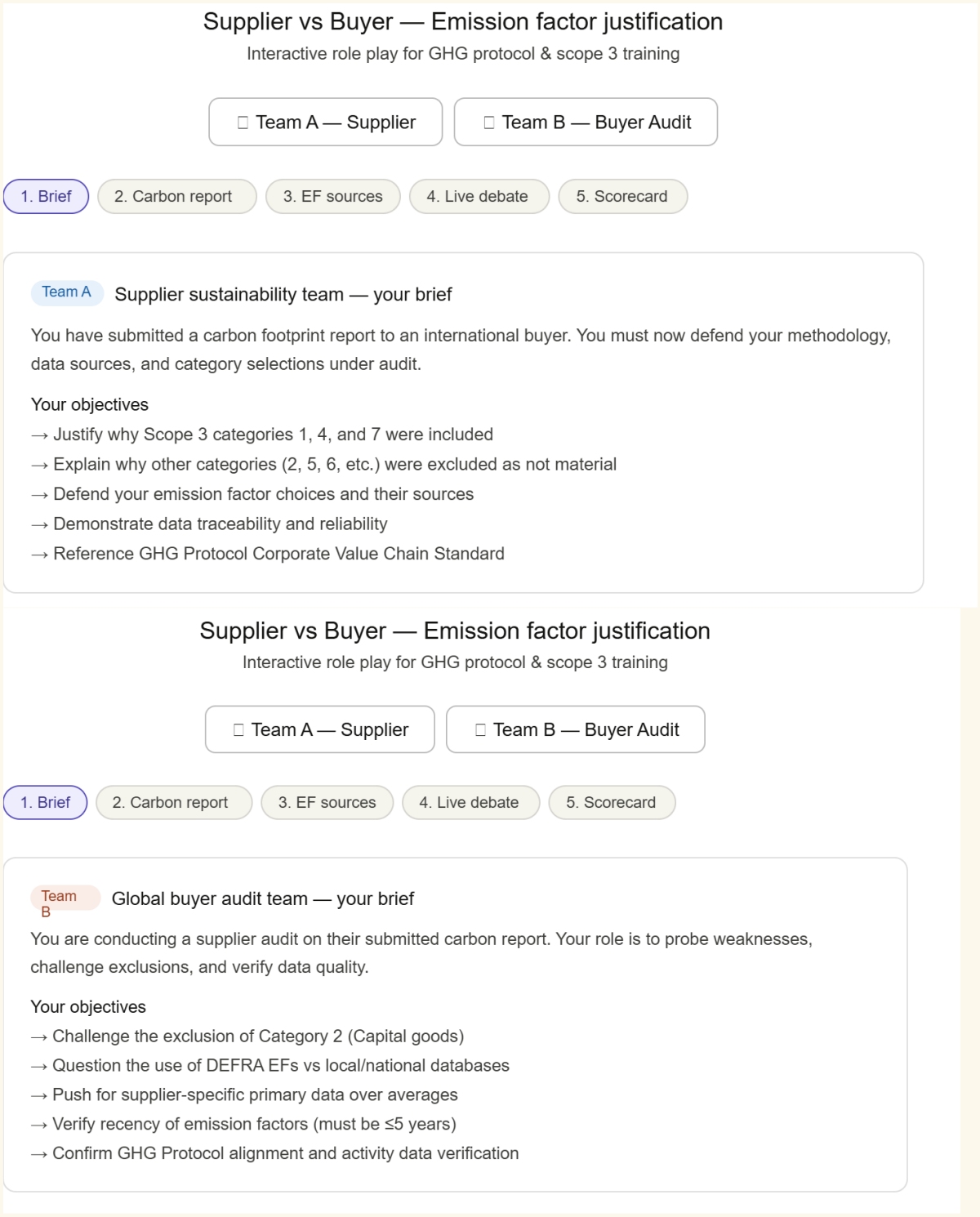
Following the live debate, the trainers facilitated a comprehensive debrief session. Participants collaborated to evaluate the supplier's performance, culminating in a standardized data quality scorecard:

Activity 1: Supplier Reporting Performance Evaluation



Based on the scorecard results, participants mapped out five critical corrective actions required to elevate the mock facility to international procurement readiness:

- **Replace Secondary Averages:** Issue mandatory primary data requests to the primary cotton suppliers to replace industry-average secondary conversion factors with verified product-level lifecycle assessments.
- **Logistics Primary Tracking:** Mandate the collection of primary fuel logs directly from third-party logistics providers for Category 4 transport, moving away from generic tonne-kilometer estimations.
- **Formalize Materiality Registers:** Maintain a comprehensive, documented materiality register that explicitly outlines the quantitative and qualitative screening thresholds used to exclude capital assets.
- **Localization Alignment:** Transition inventory metrics to localized national database emission factors as soon as they are published by domestic regulatory bodies.
- **Independent Assurance:** Secure a limited third-party verification engagement for all Scope 3 data points to guarantee compliance before final buyer presentation.



Activity 5: Decarbonize Your Chain: Carbon Footprint Calculator Exercise

1. Activity Objective & Technical Setup

The second major activity shifted participants from verbal defense to digital modeling. Utilizing a customized digital calculator developed for sports apparel production facilities, participants worked in technical teams to input raw manufacturing data, isolate operational carbon hotspots, and evaluate the environmental and financial viability of capital-intensive clean energy interventions.

2. Guided Step-by-Step Simulation Workflow

The workshop tracking followed a rigorous five-step operational workflow:

Step	Title	Description
1	Input Sheet Setup	Enter facility profiles, annual production volumes, and monthly utility/fuel logs.
2	Baseline Inventory Calculation	Review automated Scope 1 and Scope 2 carbon footprint outputs and emission intensities.
3	Decarbonization Scenario Modeling	Model mitigation strategies, including 1 MW Solar PV offsets and rPET material substitution.
4	Emission Factor Verification	Audit database version controls using the recommended data hierarchy.
5	Dashboard and Buyer Report Generation	Review auto-generated KPI dashboards and performance charts for brand compliance.

In short, Participants used a purpose-built Carbon Footprint Calculator to establish a baseline for a representative sports textile vendor (1 million pieces/year, 2026 reporting year). The baseline totaled 4,491.5 tCO_2e/year, with natural gas (boilers) as the largest contributor at 2,400 tCO_2e, followed by grid electricity (1,125 tCO_2e), virgin polyester (550 tCO_2e), cotton/fabric (150 tCO_2e), diesel (134 tCO_2e), chemicals (80 tCO_2e), logistics (30 tCO_2e), and packaging (22.5 tCO_2e).

Two decarbonization scenarios were modelled:

- 1 MW Solar PV: 1.5 million kWh/year clean electricity → 675 tCO_2e reduction (15.0%); PKR 82.5 million/year cost saving; PKR 180 million CAPEX.
- 50% rPET Substitution: 50,000 kg virgin polyester replaced → 150 tCO_2e reduction (3.3%); PKR 4 million/year premium cost.

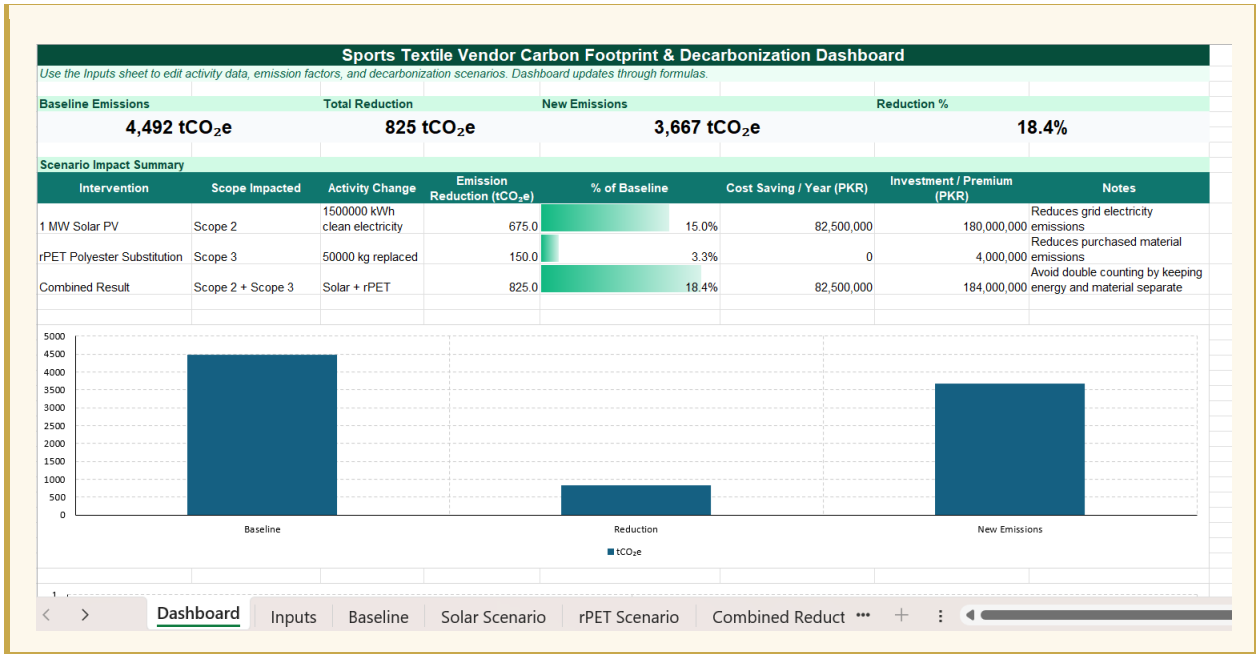
Combined result: 825 tCO_2e total reduction (18.4%); new emissions 3,666.5 tCO_2e/year; emission intensity improved from 4.492 to 3.667 $kgCO_2e$/piece. Each group produced a Buyer-Ready Decarbonization Summary with evidence documentation requirements mapped against buyer reporting expectations.

Participant Engagement Analysis & Key Takeaways

The strategic design of these exercises drove strong engagement across all manufacturing segments represented at the workshop. Rather than receiving passive theoretical instruction, factory owners, regulatory experts, and technical compliance leads collaborated directly on data analysis.

The simulation exercises yielded three critical insights that shifted the cohort's approach to sustainable export manufacturing:

1. **Data as a Commercial Prerequisite:** Participants realized that international apparel brands like Adidas, Nike, and Puma no longer view sustainability as an abstract public relations exercise, but as a rigid requirement for supply chain inclusion. A factory's data systems are now valued as highly as its physical production capacity.
2. **The Reality of the "Green Premium":** The modeling exercises demonstrated that achieving verifiable carbon reductions is not merely a cost burden. Factories with documented ESG data and certified low-carbon operations can leverage their transparency to capture a 3% to 8% commercial "Green Premium" from global buyers looking to derisk their own Scope 3 footprints.
3. **The Transition to Strategic Partnership:** The technical training provided participants with the clear vocabulary needed to evolve from transactional garment vendors into long-term strategic partners. This shift allows facilities to secure co-investment from global brands for major capital upgrades like effluent treatment plants (ETPs) and massive renewable energy arrays.



Sports Textile Vendor Carbon Footprint & Decarbonization Dashboard

Use the Inputs sheet to edit activity data, emission factors, and decarbonization scenarios. Dashboard updates through formulas.

Baseline Emissions	Total Reduction	New Emissions	Reduction %
4,492 tCO_2e	825 tCO_2e	3,667 tCO_2e	18.4%

Scenario Impact Summary

Intervention	Scope Impacted	Activity Change	Emission Reduction (tCO_2e)	% of Baseline	Cost Saving / Year (PKR)	Investment / Premium (PKR)	Notes
1 MW Solar PV	Scope 2	1500000 kWh clean electricity	675.0	15.0%	82,500,000	180,000,000	Reduces grid electricity emissions
rPET Polyester Substitution	Scope 3	50000 kg replaced	150.0	3.3%	0	4,000,000	Reduces purchased material emissions
Combined Result	Scope 2 + Scope 3	Solar + rPET	825.0	18.4%	82,500,000	184,000,000	Avoid double counting by keeping energy and material separate

Day 02 | Session 04: Measuring and Reducing Industrial Pollution | Dr. Zaeem bin Babar

The Health–Wealth Link

Dr. Zaeem bin Babar opened the final session by establishing that poor air quality is not merely an environmental compliance issue but a direct productivity, health-cost, and reputational risk for factories. Industrial pollution management is simultaneously a worker welfare obligation, a regulatory requirement, and a buyer-facing ESG performance indicator.

Pollutant Mapping in Sports Apparel

Specific pollution streams in sports apparel manufacturing were identified: dyeing and finishing effluents containing azo dyes (releasing carcinogens), formaldehyde (used for fast coloring), and heavy metals (chromium VI); microfibre generation from synthetic fabric processing — an emerging area of global regulatory scrutiny; and airborne particulate matter and VOC emissions from chemical application processes. Participants mapped these pollutants against their own facility types.

Emission Monitoring: From Manual to CEMS

The session compared monitoring approaches: periodic manual stack testing (lower cost, limited real-time insight) against Continuous Emission Monitoring Systems (CEMS), which provide granular, real-time emission data. The trainer introduced low-cost sensors; both ambient outdoor and indoor variants; as a practical entry point for factories not yet ready for full CEMS investment. Industrial case studies demonstrated how continuous monitoring enables both regulatory compliance and operational optimization.

Kaizen-Based Pollution Reduction

The session's core practical message was delivered through the **Kaizen philosophy**; small, continuous, low-cost improvements that accumulate into significant gains:

- Recalibrating boiler controls to reduce incomplete combustion and improve fuel efficiency.
- Improving ventilation and air circulation in wet processing units to reduce worker VOC exposure.
- Conducting regular machine maintenance to prevent fugitive emissions from seals and connections.
- Installing basic flow meters and air quality sensors to establish baseline pollution data.
- Segregating waste streams to reduce hazardous disposal costs and improve compliance documentation.

These Kaizen fixes simultaneously improve worker health, reduce input costs, and generate buyer-reportable ESG data – a triple benefit that makes the business case for pollution management self-evident. The day concluded with an interactive exercise in which participants applied pollution monitoring concepts to their own facilities, followed by a formal certificate distribution ceremony and group photograph.

5. Key Observations / Challenges

Across the two days, the training revealed a consistent set of structural challenges facing the Sialkot sports apparel sector in its sustainability transition. These observations are drawn from participant responses, activity outputs, and facilitator reflections.

Observation 1 **ESG as Commercial Imperative, Not Understood as Such** While participants were largely aware of sustainability concepts, many continued to frame ESG primarily as a compliance burden rather than a source of competitive advantage. A central challenge was shifting mindsets toward proactive commercial positioning; understanding that verified green factories command price premiums, attract co-financing, and qualify for lighter audit regimes.	**Observation 2** **Data Availability and Internal Coordination Gaps** Both the ESG reporting activity and the Carbon Footprint Calculator exercise exposed significant gaps in data availability. Factories lack centralized systems for tracking energy per machine, water per kg of fabric, or chemical inventory by batch. Cross-departmental data sharing remains largely informal, creating critical bottlenecks when responding to buyer data requests under time pressure.
Observation 3 **Scope 3 Complexity and Supplier Engagement Readiness** Participants grasped Scope 1 & 2 concepts readily but found Scope 3 accounting significantly more complex. Most organizations have not yet engaged their own Tier 2 suppliers in any sustainability data collection, making comprehensive Scope 3 reporting a longer-term challenge requiring coordinated value chain.	**Observation 4** **Financial Literacy Gap for Green Project Development** Although participants showed strong interest in solar PV and rPET substitution, many found the financial structuring component; calculating payback periods, linking energy cost savings to loan repayment capacity, and preparing bankable project documentation; to be a significant skill gap.
Observation 5 **Unauthorized Subcontracting as a Persistent Governance Risk** Across multiple activities, unauthorized subcontracting to unapproved home workers and village sheds emerged as the highest-risk governance failure for Sialkot factories. Participants acknowledged this is a widespread practice capable of triggering immediate buyer blacklisting and contract termination.	**Observation 6** **Gender Gap as an Underappreciated ESG Risk** The statistic that women constitute 70% of the stitching workforce yet under 5% of supervisory and management roles was met with significant reflection. Many participants had not previously considered this disparity as a rated ESG risk affecting Social (S) and Governance (G) scores used by global buyers in supplier evaluations aligned with GRI 405 and ESRS S1.
Observation 7 **High Appetite for Practical Tools and Local Guidance** Participants consistently expressed a need for simplified, locally adapted tools; carbon footprint calculators pre-loaded with Pakistan-specific emission factors, ESG reporting templates calibrated	**Observation 8** **Activities as the Most Effective Learning Mode** Hands-on activities; Risk Scavenger Hunt, Buyer's Hot Seat, ESG Reporting Assessment, and Carbon Footprint Calculator exercise; were consistently the most impactful components, not only reinforcing conceptual learning but also exposing real

to Sialkot's export profiles, and buyer requirement checklists tailored to Nike, Adidas, and PUMA.	organizational gaps in systems, data, and decision-making processes.

6. Participant Questions & Discussions

The workshop generated rich and substantive discussion across all four sessions. The following questions and discussion themes reflect participants' most pressing concerns and areas of inquiry over the two days.

Q1. How do we practically respond to increasing buyer-driven compliance requirements when we have limited internal ESG capacity?

Participants discussed building internal readiness systematically; starting with cross-functional working groups (operations, finance, compliance), assigning clear data ownership for each ESG KPI, and using buyer questionnaires as a structured framework for identifying internal gaps. The consensus was that starting small with documented progress is more effective than waiting for full-system readiness.

Q2. Is losing GSP+ genuinely a risk for Sialkot, or is it a distant regulatory concern?

The trainer confirmed that GSP+ conditionality is an active and monitored obligation. Pakistan's continued access to duty-free EU market entry (worth approximately 12% in saved tariffs) is reviewed against compliance with 27 international conventions. Failures in labour rights, anti-corruption, or environmental treaty compliance can trigger suspension with direct and immediate commercial impact on the sports goods industry.

Q3. Which Scope 3 categories should Sialkot factories prioritize first?

Given that virgin polyester typically represents the largest Scope 3 Category 1 contributor for sports apparel, participants were advised to begin there; quantifying annual volumes from purchase records then exploring rPET substitution scenarios. Outbound logistics (Category 9) was identified as the second priority due to its direct relevance to buyer-reported supply chain emissions.

Q4. What makes a solar PV project actually 'bankable' for a textile factory in Sialkot?

Discussion centred on three factors:

(i) A credible baseline energy dataset demonstrating current electricity consumption and cost;

(ii) A clear linkage between projected solar generation, grid cost savings, and annual cash flows sufficient to service the loan; and

(iii) Technical credibility; an independent solar feasibility report with site-specific yield data. The calculator example (1 MW solar, PKR 82.5M/year saving, PKR 180M CAPEX) provided a concrete reference point.

Q5. How can a factory start ESG reporting without hiring external consultants?

Participants discussed a self-start approach using the buyer requirement mapping templates and 12-month ESG roadmap developed during the workshop. The recommended starting point is assembling an evidence folder; utility bills, water meter logs, chemical purchase records, OHS incident logs, and production data; which simultaneously satisfies the documentation requirements of GRI, ESRS, and major buyer audits.

Q6. What is the difference between ZDHC MRSL and RSL, and which matters most?

The MRSL (Manufacturing Restricted Substances List) governs which chemicals can be used in production processes, while the RSL (Restricted Substances List) governs what residues are permitted in finished products. For factories supplying Nike or PUMA, both are mandatory. Factories were advised to maintain a current chemical inventory, obtain Safety Data Sheets for all substances, and conduct regular ZDHC-aligned wastewater testing.

Q7. How can we address the gender gap in factory management; is it realistically achievable?

The trainer acknowledged the structural nature of the gender gap but noted that buyers increasingly score it as a measurable ESG KPI. Practical first steps include formalizing a gender equity policy, establishing minimum representation targets for women in supervisory positions, and documenting current data aligned with GRI 405 and ESRS S1 disclosures.

Q8. How can we develop a 'Sustainable Sialkot' identity that benefits the whole cluster?

This question generated one of the most enthusiastic discussions of the workshop. Participants were receptive to the idea of a collective origin brand; "Sustainable Sialkot"; aggregating the ESG credentials of the cluster and positioning it as a premium sourcing destination for global sports brands. The Sialkot Chamber of Commerce and Industry was identified as a natural convenor, with the post-1996 FFC model cited as proof of what collective action can achieve.

7. Conclusion and Next Steps

The two-day FIFA workshop successfully delivered a comprehensive, practically grounded, and commercially relevant capacity-building experience for the Sialkot sports apparel sector. Through a deliberately sequenced combination of expert-led sessions, brand case studies, regulatory deep dives, and high-engagement group activities, participants moved from awareness to initial implementation readiness across four interconnected domains: ESG foundations, buyer-aligned sustainability reporting, carbon measurement and decarbonization, and factory-floor pollution management.

The workshop demonstrated that the Sialkot sports apparel sector already possesses significant foundational assets; a skilled workforce, established buyer relationships, and a pioneering track record in governance reform. What is now required is a systematic transition from informal, reactive compliance to structured, proactive ESG management embedded within business strategy.

Workshop at a Glance

4 Expert-led training sessions across 2 days	**4** Hands-on group activities & role plays	**18.4%** Modelled emission reduction (solar + rPET)	**6+** Reporting frameworks decoded (GRI, CSRD, ESRS, IFRS, CDP, SBTi)

Next Steps

1. **Follow-up Technical Sessions:** Organize advanced workshops on GHG Protocol-aligned Scope 3 accounting, ZDHC wastewater compliance auditing, solar project bankability preparation, and GRI-based sustainability report drafting for Sialkot factories.
2. **Carbon Footprint Calculator Deployment:** Share the sports textile vendor Carbon Footprint Calculator with all participants as a practical self-assessment tool. Participants are encouraged to complete a factory-specific baseline within 60 days.
3. **Buyer Requirement Mapping Completion:** Follow up with participants to ensure each organization completes a full buyer-aligned ESG KPI readiness assessment for their primary buyer using the Framework Crosswalk tool provided during Session 02.
4. **Cluster-Level ESG Initiative:** Explore the feasibility of developing a 'Sustainable Sialkot' collective ESG origin brand in partnership with the Sialkot Chamber of Commerce and Industry, building on the FFC model and the cluster's international reputation in sports goods manufacturing.
5. **Monitoring and Progress Tracking:** Conduct periodic follow-ups at 30, 90, and 180 days post-workshop to assess how participants are applying training concepts, tracking progress on carbon baseline completion, ESG KPI data collection, policy documentation, and buyer reporting submissions.
6. **Policy Advocacy:** Use documented challenges and observations to inform ADS's broader advocacy work on Pakistan's industrial decarbonization policy, particularly around green finance access, SECP ESG reporting support for SMEs, and alignment of domestic standards with international buyer requirements.

8. Coverage Links

Day 1 Coverage:

1. https://www.linkedin.com/posts/fifaprogram-capacitybuilding-sialkot-ugcPost-7460969570393141248-BnkE?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAVY_goBN6Fp8LfNxM5aFMixUr5GP5bOb88
2. https://www.instagram.com/p/DYWk4cEiOVR/?utm_source=ig_web_button_share_sheet&igsh=MzRlODBiNWFlZA==
3. https://www.linkedin.com/feed/update/urn:li:activity:7461316202754179072
4. https://x.com/AREC_PAK/status/2055552557783658776?s=20
5. https://www.instagram.com/p/DYZClWniP9k/?utm_source=ig_web_copy_link&igsh=MzRlODBiNWFlZA%3D%3D

Day 2 Coverage:

1. https://www.linkedin.com/posts/fifaprogram-capacitybuilding-sialkot-ugcPost-7461377010544730112-vIV9?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAVY_goBN6Fp8LfNxM5aFMixUr5GP5bOb88
2. https://x.com/AREC_PAK/status/2055611017275809861?s=20
3. https://www.instagram.com/reel/DYZdXQxxxuD/?utm_source=ig_web_copy_link&igsh=MzRlODBiNWFlZA%3D%3D
4. https://www.instagram.com/p/DYZecJmiD67/?utm_source=ig_web_copy_link&igsh=MzRlODBiNWFlZA%3D%3D&img_index=3
5. https://x.com/AREC_PAK/status/2055616385074503824?s=20
6. https://www.instagram.com/p/DYZfykPCOYY/?utm_source=ig_web_copy_link&igsh=MzRlODBiNWFlZA==

Annex I: Event Visuals

Day 1: Session 1

Day 1: Session 2


Key drivers behind global ESG pressure


FIFA Program
e Interventions for Apparel
ewable energy transition in Pakistan's sports
apparel sector
GCA

Day 2: Session 1


Fossil-Free


EMISSION SOURCES IN
FIFA SUPPLY CHAINS


FIFA Program
Fossil-Free Interventions for Apparel


GCA
Green Corporate Alliance
FIFA Program
Fossil-Free Interventions for Apparel


FIFA Program


Alternate
Development Services
GCA
FIFA Program

Day 2: Session 2


Alternate
Development Services
GCA
Green Corporate Alliance
FIFA Program
Fossil-Free Interventions for Apparel
Accelerating renewable energy transition in Pakistan's sports

Annex II: Shields and Certificates Distribution






For Partnership & Further Queries

Alternate Development Services (ADS)
House 17, Street 51, G-13/2, Islamabad, Pakistan | Ph: +92-51-2306852
mashhood.ads@gmail.com | thealternate.info@gmail.com | www.alternate.org.pk