

POLICY BRIEF

CBAM POLICY DEVELOPMENT, ADAPTATION AND COMPLIANCE

Preparing Pakistan's Textile Sector for the EU Carbon Border Adjustment Mechanism

A Policy Brief Based on a Case Study of Punjab's Textile Sector

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Executive Summary

The European Union's Carbon Border Adjustment Mechanism (CBAM) is a carbon pricing instrument that requires importers of carbon-intensive goods into the EU to pay a price on the embedded emissions of those goods, equivalent to the price paid by EU producers under the EU Emissions Trading System (ETS). CBAM entered a transitional reporting phase in October 2023, with the definitive regime, including certificate purchase obligations, taking effect from 2026 and annual surrender obligations beginning in 2027. Although CBAM currently covers a narrow set of carbon-intensive sectors (iron and steel, cement, aluminum, fertilizers, electricity, and hydrogen), the European Commission has signaled that downstream sectors, including textiles, may be brought within its scope in future review cycles from 2028 onward.

Pakistan cannot afford to treat this as a distant risk. Textiles account for approximately 60 percent of the country's merchandise exports and 8.5 percent of GDP, and Punjab hosts roughly 70 percent of national textile production capacity. Germany, the Netherlands, and Spain alone account for the majority of Pakistan's textile exports to the EU. Any future extension of CBAM to textiles, or continued tightening of related EU sustainability requirements such as the Circular and Sustainable Textile Strategy and the Digital Product Passport, would directly affect the competitiveness of Pakistan's largest export sector.

This policy brief translates the findings of a four-component research study into actionable guidance for government ministries, regulatory agencies, industry associations, and exporters. The underlying study examined: (1) the alignment between Pakistan's federal, provincial, and industry-level policy framework and EU CBAM requirements; (2) firm-level CBAM readiness among 27 leading textile exporters, measured through a CBAM Readiness Index (CRI); (3) the economic disadvantages of non-compliance relative to the cost of compliance; and (4) the scale of export revenue exposed to EU market-access risk.

Key Findings

- **Awareness is high, but operational readiness is uneven.** Leading exporters understand CBAM's technical requirements, including embedded carbon reporting and Scope 1/Scope 2 emissions tracking, largely because of buyer pressure and industry association engagement. However, this awareness has not consistently translated into verified monitoring, reporting and verification (MRV) systems or capitalized investment, particularly among small and medium-sized enterprises (SMEs).
- **Domestic energy policy instability is the single largest barrier to readiness.** The Off-the-Grid (Captive Power Plants) Levy Act, 2025 and the NEPRA Prosumer Regulations, 2025 have introduced sustained uncertainty into industrial energy planning, discouraging the very renewable energy and efficiency investments that CBAM readiness requires.
- **Compliance is economically preferable to non-compliance for most firms.** The average firm-level CBAM Readiness Index score is 66.8 out of 100, indicating moderate-to-high readiness. Compliance produces a positive net economic benefit for 100 percent of low-readiness firms, 80 percent of moderate-readiness firms, and between 67 and 78 percent of high-readiness firms in the baseline scenario. When modest compliance-linked efficiency gains are factored in, compliance remains beneficial for all low- and high-readiness firms and for 93.3 percent of moderate-readiness firms.

- **National export exposure is economically significant.** The top 20 textile exporters alone account for an estimated USD 1.38 billion in EU export exposure. Under conservative trade-diversion assumptions, revenue at risk from a hypothetical loss of EU market access ranges between USD 345 million and USD 1.75 billion.
- **Structural policy contradictions undermine transition incentives.** Continued reliance on fossil-fuel subsidies and administered energy pricing, combined with regulatory volatility in renewable energy policy, works against the decarbonization investment that export competitiveness under carbon-adjusted trade rules will increasingly require.

Major Policy Messages

First, CBAM readiness in Pakistan's textile sector is no longer primarily a technical or awareness problem; it is a policy coordination challenge. Second, the economic case for early, phased compliance is already favourable, and this case strengthens once the emissions-reduction benefits of compliance investment are taken into account. Third, the benefits of compliance are not evenly distributed: lower-readiness firms gain the most from avoiding strategic and buyer-related losses in the short run, while higher-readiness, EU-integrated firms carry the greatest absolute exposure should carbon border pricing be extended to textiles. Fourth, without predictable energy pricing, accessible green finance, and strengthened MRV infrastructure, technical readiness will not convert into durable compliance capacity.

High-Level Recommendations

- Stabilise and ring-fence energy pricing for export-oriented industries during a defined transition window, linked to verifiable renewable energy investment.
- Restore predictable, bankable economics for industrial-scale renewable energy investment, particularly for systems above 1 MW.
- Develop pooled MRV and verification infrastructure, with concessional financing to extend coverage to SMEs.
- Adopt the CBAM Readiness Index as a standing diagnostic tool for targeting government and donor support toward the firms and clusters most in need.
- Reframe CBAM compliance within trade, industrial, and export promotion policy rather than treating it solely as an environmental compliance matter.
- Establish a time-bound Transitional CBAM Adjustment Facility to support verified emissions reporting, third-party audits, and renewable energy integration among large exporters, while extending complementary support to SMEs.

Taken together, the evidence indicates that Pakistan's textile sector possesses a credible foundation for CBAM readiness. What remains is coordinated, predictable, and adequately financed policy action to convert that foundation into durable export competitiveness.

1. Why This Policy Brief?

1.1 Purpose

This policy brief distills the findings of a detailed research study, CBAM Policy Development, Adaptation and Compliance: A Case Study of Textile Sector in Punjab, into a concise, decision-oriented document for policymakers and industry leaders. Its purpose is to translate technical and empirical findings into specific, actionable guidance that can inform regulatory design, budget allocation, institutional coordination, and firm-level strategy in the period ahead of CBAM's definitive implementation phase and any future extension to downstream sectors such as textiles.

1.2 Intended Audience

This brief is intended for a broad but specific audience of decision-makers directly responsible for, or affected by, Pakistan's CBAM readiness: the Ministry of Commerce, the Ministry of Climate Change & Environmental Coordination, the Ministry of Industries and Production, the Ministry of Finance, the State Bank of Pakistan, the National Energy Efficiency and Conservation Authority (NEECA), the Punjab Energy Efficiency and Conservation Agency (PEECA), the Trade Development Authority of Pakistan (TDAP), the All Pakistan Textile Mills Association (APTMA), provincial governments, development partners, and textile exporters themselves, including SMEs and cluster-level suppliers.

1.3 Why This Brief Matters

Pakistan's textile sector sits at the intersection of national export earnings, employment, and mounting international carbon-related trade requirements. The research underpinning this brief shows that the economic case for early compliance is already favorable for most firms, and that the principal constraint on readiness is not technical capacity but domestic policy predictability, financing access, and institutional coordination. This brief exists to ensure that this evidence translates into policy design and budgetary decisions before CBAM-related risk becomes a realized commercial loss.

1.4 How This Brief Differs from the Underlying Research Paper

The original research paper presents the full methodology, statistical estimation, and diagnostic testing underlying the CBAM Readiness Index and the compliance-cost analysis. This policy brief does not repeat that technical material. Instead, it presents the findings and their policy implications in plain, decision-oriented language, and translates the study's four analytical components into a structured set of institution-specific and firm-level recommendations, a proposed national readiness framework, and a phased national action plan.

2. Understanding CBAM

2.1 What Is CBAM?

The Carbon Border Adjustment Mechanism (CBAM) is a European Union policy instrument that places a carbon price on selected imported goods, equivalent to the carbon price that EU producers pay under the EU Emissions Trading System (ETS). It was established under Regulation (EU) 2023/956 and is designed to prevent 'carbon leakage', the relocation of carbon-intensive production to jurisdictions with weaker climate regulation, while encouraging decarbonization among trading partners.

2.2 Why Was It Introduced?

The EU ETS has, since 2005, required EU industries to hold allowances for every tonne of CO₂ emitted, creating a domestic carbon price. Without a complementary border measure, this domestic carbon price risked disadvantaging EU producers relative to imports from jurisdictions without equivalent carbon pricing, while doing little to reduce global emissions if production simply relocated. CBAM was designed to close this gap by extending an equivalent carbon cost to covered imports.

2.3 How Does It Work?

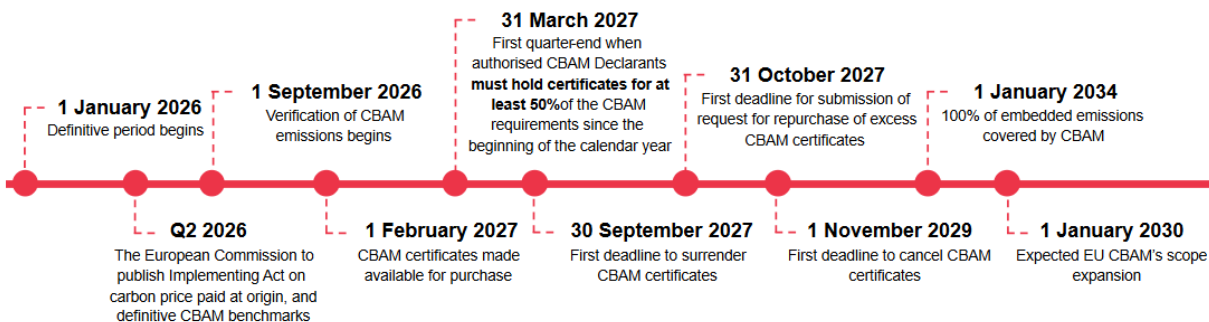
Under CBAM, importers of covered goods into the EU must report the embedded emissions of those goods and, from the definitive phase, purchase and surrender CBAM certificates corresponding to those emissions. Embedded emissions must be independently verified or, where verified data is unavailable, are assigned conservative default values, a materially less favorable outcome for exporters than verified reporting.

2.4 Relationship with the EU Emissions Trading System

CBAM is explicitly designed to mirror the EU ETS carbon price faced by domestic EU producers. As free allowances under the EU ETS are phased out for covered sectors, CBAM certificate prices are calibrated to track the prevailing EU ETS carbon price, meaning that CBAM exposure for exporters will move in tandem with EU carbon market conditions.

2.5 Implementation Timeline

CBAM entered a transitional reporting phase on 1 October 2023, during which importers were required to report embedded emissions without financial obligation. The definitive regime enters into force from 1 January 2026, with certificate purchases commencing in February 2027 and annual surrender obligations beginning in September 2027 for the preceding year's imports. CBAM currently applies to iron and steel, cement, aluminium, fertilisers, electricity, and hydrogen.



2.6 Possible Future Expansion to Textiles

Textiles are not included in CBAM's current definitive-phase coverage. However, the European Commission has indicated that expansion to additional downstream sectors is under consideration from 2028 onward. Given the scale of Pakistan's textile exposure to the EU market, this possibility warrants proactive preparation rather than reactive adjustment once inclusion is confirmed.

2.7 Relationship with Related EU Sustainability Instruments

Digital Product Passport (DPP)

The Digital Product Passport requires lifecycle environmental data for covered products, reinforcing traceability and verification of embedded emissions. For Pakistani exporters, this creates a dual compliance requirement: carbon reporting under CBAM-aligned methodologies and digital supply-chain transparency under DPP.

Circular and Sustainable Textile Strategy

This EU strategy introduces binding eco-design requirements covering durability, recyclability, and recycled content, along with extended producer responsibility obligations. It requires exporters to adapt material choices, manufacturing processes, and end-of-life waste management to remain aligned with EU market requirements.

Waste and Circularity Measures

New EU rules prohibit the destruction of unsold garments and tighten standards governing used-clothing exports, requiring Pakistan to strengthen domestic systems for collection, sorting, recycling, and traceability.

Collectively, CBAM, the Circular Textile Strategy, and the Digital Product Passport form an interlinked regulatory environment. Preparedness for one increasingly requires preparedness for all three, since traceability data required under DPP underpins the credibility of emissions data required under CBAM-aligned reporting.

3. About This Study

3.1 Research Objectives

The underlying research was designed to assess the readiness of Pakistan's textile sector, with a specific focus on Punjab's major textile clusters, to comply with CBAM requirements, and to evaluate the economic consequences of non-compliance. The study pursued four objectives: to review and assess alignment between Pakistan's policy framework and EU CBAM requirements; to benchmark firm-level readiness through a purpose-built index; to quantify the economic disadvantages of non-compliance relative to compliance costs; and to propose evidence-based policy and firm-level measures to strengthen compliance capacity and protect EU market access.

3.2 Four Analytical Components

Component 1: Regulatory Review and Gap Analysis

A systematic review of federal, provincial (Punjab), and industry-level (APTMA) policy instruments against EU CBAM and related regulatory requirements, identifying areas of alignment, partial alignment, and gap.

Component 2: CBAM Readiness Index (CRI)

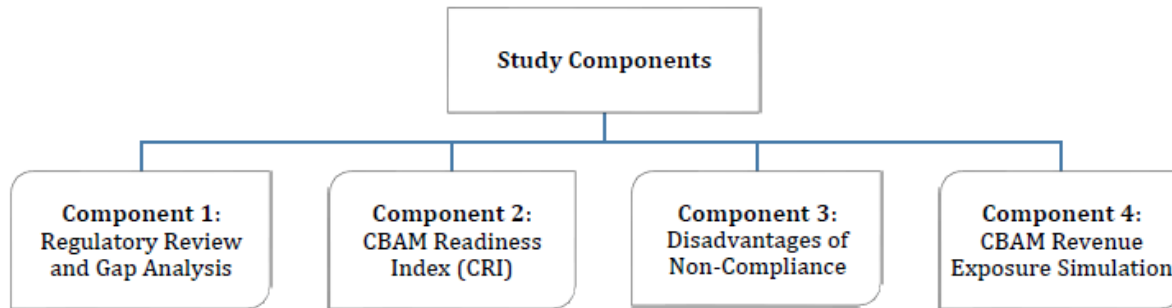
A composite index measuring firm-level readiness across ten pillars, emissions performance, energy transition, MRV and reporting capacity, traceability, certifications and governance, financial readiness, export exposure, environmental controls, enabling environment, and future preparedness, constructed from primary survey data covering 27 leading textile exporters, supported by 12 key informant interviews and 8 focus group discussions.

Component 3: Disadvantages of Non-Compliance

A comparative economic analysis estimating the costs firms would avoid through compliance, covering strategic and buyer-related losses in the short run, and residual carbon exposure under EU carbon pricing in the long run, against the costs of achieving compliance.

Component 4: CBAM Revenue Exposure Simulation

A simulation quantifying the scale of export revenue among Pakistan's largest textile exporters that would be exposed to risk under a hypothetical loss of EU market access, tested against multiple trade-diversion and exposure-share assumptions.



Each component generates distinct but complementary evidence: Component 1 establishes the policy environment within which firms operate; Component 2 measures where firms currently stand; Component 3 establishes the economic rationale for action; and Component 4 quantifies the national stakes involved. Together, they form the evidentiary basis for the recommendations presented in this brief.

4. Key Evidence from the Study

The findings below are organised thematically to support policy decision-making, drawing on evidence generated across all four components of the underlying study.

Finding 1: Pakistan Possesses Technical Awareness but Institutional Readiness Remains Limited

Across firm interviews and focus group discussions, awareness of CBAM's technical requirements, including product-level carbon footprinting, the distinction between Scope 1 and Scope 2 emissions, and third-party verification requirements, is high among leading exporters. Several large firms have already conducted CBAM-aligned audits or engaged international verifiers ahead of the 2026 definitive phase, driven substantially by buyer requirements and industry association engagement.

However, this awareness has not uniformly translated into verified MRV systems, dedicated compliance budgets, or third-party-certified emissions data. Firms lacking verified product-level emissions face the risk of being assigned conservative default values under CBAM's methodology, a materially disadvantageous outcome. This gap between awareness and operational readiness is most pronounced among SMEs and subcontractors, and represents the central technical vulnerability identified by the study.

Finding 2: Domestic Energy Policy Instability Is the Largest Barrier to CBAM Preparedness

Despite strong technical awareness, respondents in every focus group discussion and in ten of twelve key informant interviews identified domestic energy policy volatility, not technical capacity, as the dominant constraint on CBAM readiness. Two regulatory developments were cited repeatedly:

- The Off-the-Grid (Captive Power Plants) Levy Act, 2025, which applies a monthly-revised levy to natural gas and RLNG used in captive power generation, was described by respondents as placing firms in a state of 'policy limbo' that prevents long-term energy investment decisions.
- The NEPRA Prosumer Regulations, 2025, which replaced the previous net-metering regime with net billing at approximately half the previous export tariff, shortened contract duration from seven to five years, and capped simplified-route system capacity at 1 MW, has halted new solar investment among the very firms that had identified solar adoption as their primary CBAM mitigation strategy.

The study identifies a structural policy contradiction: while export-facing firms face increasing exposure to external carbon pricing mechanisms, domestic energy policy continues to rely on subsidised and administratively volatile pricing that weakens the incentive, and in the case of recent regulatory changes, the financial viability, of investing in energy efficiency and renewable energy.

Finding 3: Compliance Is Economically More Beneficial Than Non-Compliance for Most Firms

The study's comparative economic analysis shows that compliance produces a positive net economic benefit relative to non-compliance for the large majority of surveyed firms. In the short-run and baseline long-run scenarios, compliance pays for 100 percent of low-readiness firms, 80 percent of moderate-readiness firms, and between 67 and 78 percent of high-readiness firms, depending on the assumed compliance-cost share.

Once modest, compliance-linked efficiency improvements are incorporated into the analysis (the abatement-adjusted long-run scenario), the case for compliance strengthens further: the net benefit of compliance becomes positive for all low-readiness firms, all high-readiness firms, and 93.3 percent of moderate-readiness firms. Importantly, the source of benefit differs by readiness tier. Low-readiness firms gain the most from avoiding strategic and buyer-related losses, such as contract disruption, reputational damage, and restricted access to green finance, because these risks are most acute for less-prepared firms. High-readiness firms, by contrast, carry the largest absolute exposure to potential future EU carbon pricing, because they are most deeply integrated into the EU market.

A stress test simulating substantially higher compliance costs, up to 10 percent of annual revenue, confirms that the economic case for compliance remains valid under moderate cost escalation but narrows considerably at very high assumed cost levels, particularly for high-readiness firms. This underscores the importance of keeping compliance costs manageable through targeted financing and shared infrastructure, addressed in the recommendations below.

Finding 4: SMEs Remain the Most Vulnerable Segment

Firm-level evidence consistently shows that SMEs and cluster-level suppliers lag behind large exporters in operational readiness. Independent assessments cited in the study found that fewer than half of surveyed textile units had completed formal energy audits, and an even smaller share had conducted product-level carbon footprint assessments. SMEs face compounding constraints: limited access to concessional finance for compliance-related capital expenditure, weaker in-house technical capacity for MRV and reporting, and lower access to pooled or subsidised verification services. Because SMEs form a critical part of the supply chain that ultimately supports larger exporters' compliance claims, their vulnerability represents a systemic risk to sector-wide readiness, not solely a firm-level one.

Finding 5: Green Finance Remains Insufficient

The study finds that textiles receive a disproportionately small share of Pakistan's climate-linked financing, despite representing the country's largest export sector. Fossil-fuel subsidies remain substantial relative to green financing allocations, and renewable energy penetration within the textile sector remains low relative to overall industrial energy consumption. Capital expenditure requirements for energy efficiency upgrades, renewable energy integration, and MRV system development constitute a primary constraint on firm-level compliance investment, particularly for firms without access to concessional financing instruments.

Finding 6: Pakistan Lacks Enabling Institutional Infrastructure

While federal, provincial, and industry-level policy instruments demonstrate clear intent, including the National Climate Change Policy, the National Climate Finance Strategy, and APTMA's National Compliance Centre, implementation capacity remains uneven. Accredited MRV and verification infrastructure is limited, particularly at the provincial level; carbon market and Article 6 participation mechanisms remain under development; and inter-ministerial coordination between energy, finance, commerce, and climate authorities has not yet been institutionalised in a manner that ensures policy coherence. The result is a policy environment where individual instruments are reasonably well designed, but their cumulative effect on firm-level readiness is diminished by fragmentation and inconsistent enforcement.

5. Policy Gap Assessment

This section consolidates the regulatory gaps identified in Component 1 of the underlying study across nine policy dimensions relevant to CBAM readiness.

Monitoring, Reporting and Verification (MRV)

Federal instruments, including NEECA-led audit requirements and APTMA's National Compliance Centre, provide a foundation for MRV development. However, provincial-level implementation is uneven, accredited verification capacity is limited, and firm-level uptake of product-level carbon footprinting remains low outside a cohort of leading exporters.

Carbon Pricing

Pakistan's federal carbon levy on petroleum products represents an initial step toward domestic carbon pricing, but no domestic emissions trading system exists that could be credited against CBAM obligations. This raises the risk that exporters could face a double burden, domestic levies and EU border charges, should textiles be brought within CBAM's scope.

Energy Policy

Domestic energy policy, particularly the Off-the-Grid (Captive Power Plants) Levy Act, 2025, is characterised by volatility that discourages long-term investment planning. This stands in direct tension with the predictable investment horizon required for effective decarbonization.

Renewable Energy Policy

The NEPRA Prosumer Regulations, 2025 have reduced the financial attractiveness of solar investment relative to the previous net-metering regime, undermining what firms had identified as their primary CBAM mitigation pathway.

Green Finance

The National Climate Finance Strategy provides a policy framework for mobilising blended finance and concessional lending, but textiles receive a disproportionately small share of climate-tagged investment relative to their export significance, and SME access to green financing instruments remains particularly constrained.

Verification Infrastructure

Accredited third-party verification services remain limited in number and geographic coverage, particularly outside major urban centres, constraining the ability of firms, especially SMEs, to obtain the verified emissions data that CBAM's methodology rewards.

Digital Product Passport Readiness

No dedicated national framework currently exists to prepare exporters for Digital Product Passport requirements, despite their direct relevance to future EU market access and their reinforcing relationship with CBAM-aligned emissions reporting.

Supply Chain Traceability

Supplier-level environmental compliance auditing remains limited in coverage, and traceability of material origin across multi-tier supply chains is weak, particularly among SME suppliers to larger exporters.

Institutional Coordination

Policy responsibility for CBAM-relevant issues is distributed across energy, climate, commerce, finance, and provincial authorities without a standing coordination mechanism, resulting in policy measures, such as recent energy pricing changes, that can undermine climate and export-competitiveness objectives pursued by other parts of government.

Policy Area	Status	Key Gap / Implication
Carbon Pricing / Levies	Partial	No domestic ETS; risk of double charges vs CBAM
Emissions Reporting (MRV)	Partial	Weak provincial enforcement; few accredited verifiers
Energy Efficiency & Renewables	Partial	Renewable share in textiles <7%; solar bankability hurt by rule changes
Green Finance	Gap	Textiles receive <3% of climate finance; large CAPEX gap
Traceability & Waste	Gap	Weak supplier tracing; exposure to EU Digital Product Passport rules
Sector (Textiles)	Active	High fossil dependence (~64%); SME lag on MRV

6. Policy Recommendations for Government

This section presents institution-specific recommendations, each grounded in the findings summarised above. Recommendations are structured to identify the existing challenge, the rationale for action, specific measures, and expected outcomes.

6.1 Ministry of Commerce

Existing Challenge

CBAM and related EU sustainability measures are currently treated primarily as environmental or regulatory issues rather than as a core trade-policy concern, despite their direct implications for Pakistan's largest export sector.

Why Action Is Needed

The study finds that EU export exposure among the largest textile exporters alone reaches approximately USD 1.38 billion, and that compliance readiness is closely tied to export competitiveness. Trade policy is therefore the appropriate anchor for coordinating the government's CBAM response.

Recommendations

- Formally designate CBAM and related EU sustainability requirements (Circular Textile Strategy, Digital Product Passport) as strategic trade-policy priorities within the Ministry's export strategy for textiles.
- Establish a CBAM Trade Facilitation Unit within the Ministry to coordinate engagement with EU counterparts, monitor regulatory developments, and disseminate guidance to exporters.
- Integrate CBAM readiness indicators, including CRI-based benchmarking, into existing export promotion and market access support programmes.
- Lead the development of an Export Diversification Risk Mitigation Strategy identifying alternative high-value markets to reduce overdependence on EU demand, without discouraging CBAM compliance investment.
- Negotiate, where feasible, sustainability-aligned trade facilitation arrangements with EU counterparts that recognise Pakistan's compliance investments and transition timeline.

Expected Outcomes

- Coordinated national trade-policy response to CBAM rather than fragmented regulatory engagement.
- Improved exporter access to timely, accurate guidance on EU requirements.
- Reduced concentration risk through diversification, without undermining compliance incentives.

6.2 Ministry of Climate Change & Environmental Coordination

Existing Challenge

Pakistan's climate policy architecture, including the National Climate Change Policy, Updated NDC, and National Climate Finance Strategy, provides strong strategic direction, but implementation of MRV systems, carbon market infrastructure, and sector-specific decarbonization support remains at an early stage.

Why Action Is Needed

The study identifies MRV and reporting capacity as a core CBAM readiness pillar, and finds that firms without verified emissions data face default-value risk. Article 6 carbon market participation also remains at a preparatory stage despite clear policy intent.

Recommendations

- Accelerate development of accredited MRV and verification infrastructure, prioritising textile-producing regions in Punjab, including Faisalabad, Lahore, and Multan.
- Establish a sector-specific decarbonization roadmap for textiles under the National Climate Finance Strategy, with clear milestones aligned to CBAM's 2026 and 2027 implementation dates.
- Advance operational readiness for Article 6 carbon market participation, including credit authorization protocols and registry development, to create potential revenue-generating pathways for firms undertaking verified emissions reductions.
- Develop a CBAM default-value risk mitigation strategy, including subsidized third-party verification access for SMEs and clear public guidance on the penalties associated with non-verified emissions data.
- Institutionalize coordination with the Ministry of Energy and NEPRA to ensure that energy pricing and renewable energy regulation do not undermine national decarbonization and export-competitiveness objectives.

Expected Outcomes

- Expanded accredited MRV and verification coverage, reducing default-value exposure for exporters.
- Clearer, sector-specific decarbonization pathway for the textile industry.
- Improved policy coherence between climate and energy regulation.

6.3 Ministry of Industries and Production

Existing Challenge

Industrial energy efficiency and decarbonization support mechanisms exist at the federal level, but coverage of energy audits, efficiency retrofits, and cleaner production practices remains incomplete, particularly among SME textile units.

Why Action Is Needed

The study finds that industrial energy consumption remains heavily fossil-based, with renewable penetration in textiles below sector-wide targets, and that only a minority of surveyed units have completed formal energy audits or product-level carbon footprinting.

Recommendations

- Expand mandatory and subsidised energy audit coverage for textile-sector firms, with priority given to SME clusters in Faisalabad, Lahore, and Multan.
- Support the establishment of shared or pooled industrial testing and verification infrastructure to reduce per-firm compliance costs, particularly for smaller exporters.
- Work with APTMA to scale cleaner production and energy-efficiency training programmes beyond the current pilot cohort of leading exporters.
- Incorporate CBAM-related efficiency and decarbonization criteria into existing industrial policy incentive structures.

Expected Outcomes

- Wider energy audit and efficiency-upgrade coverage across the textile sector.
- Reduced per-firm compliance costs through shared infrastructure.
- Stronger link between industrial policy and export competitiveness.

6.4 Ministry of Finance

Existing Challenge

Fiscal policy continues to combine carbon-pricing instruments, such as the federal carbon levy, with continued fossil-fuel subsidies, creating conflicting signals for industrial energy investment decisions.

Why Action Is Needed

The study identifies this coexistence of carbon pricing and fossil-fuel subsidisation as a central structural contradiction undermining decarbonization incentives, and finds that green financing allocated to textiles remains disproportionately small relative to the sector's export significance.

Recommendations

- Develop a phased fossil-fuel subsidy rationalisation plan for industrial energy users, sequenced to avoid abrupt cost shocks to export-oriented sectors.
- Ring-fence a defined share of carbon levy revenue for textile-sector decarbonization support, including MRV system financing and energy-efficiency incentives.
- Work with the State Bank of Pakistan to expand fiscal incentives, such as tax credits or accelerated depreciation, for verified compliance-related capital expenditure.

- Ensure that any future domestic carbon pricing instrument is designed with explicit consideration of its interaction with CBAM, to avoid a double carbon-cost burden on exporters.

Expected Outcomes

- Reduced fiscal contradiction between subsidy and carbon-pricing policy.
- Dedicated, predictable funding stream for sector decarbonization.
- Lower effective cost of compliance investment for exporters.

6.5 State Bank of Pakistan

Existing Challenge

Access to concessional or green financing for compliance-related capital expenditure remains limited, particularly for SME exporters, constraining the pace of energy-efficiency and MRV investment identified as central to CBAM readiness.

Why Action Is Needed

The study finds that financial readiness is one of the weaker-performing CRI pillars among surveyed firms, and that CAPEX constraints represent a primary barrier to decarbonization investment, particularly given the additional financing pressure created by regulatory changes affecting captive power and solar economics.

Recommendations

- Expand or introduce dedicated green financing windows and refinance facilities for verified CBAM-related compliance investment, including MRV systems, energy audits, and renewable energy integration.
- Work with commercial banks to develop streamlined, lower-collateral lending products for SME exporters undertaking compliance-related capital expenditure.
- Incorporate CBAM readiness criteria, potentially informed by the CRI, into eligibility frameworks for existing export refinance and long-term financing facilities.
- Support the development of blended finance mechanisms in coordination with development partners to de-risk private lending for textile-sector decarbonization.

Expected Outcomes

- Improved access to concessional finance for compliance-related investment.
- Reduced financing barriers for SME exporters specifically.
- Stronger alignment between financial-sector incentives and export-competitiveness objectives.

6.6 National Energy Efficiency & Conservation Authority (NEECA)

Existing Challenge

Minimum energy performance standards, mandatory audit requirements, and energy manager certification exist under the NEEC Action Plan 2023–30, but implementation is constrained by limited accredited testing infrastructure and incomplete audit coverage.

Why Action Is Needed

The study identifies energy transition as a core CBAM readiness pillar and finds that audit implementation, not merely audit completion, remains inconsistent among surveyed firms.

Recommendations

- Expand accredited testing and certification infrastructure to reduce bottlenecks in energy audit delivery for the textile sector.
- Strengthen tracking and enforcement of audit-recommendation implementation, not solely audit completion, among large textile exporters.
- Coordinate directly with PEECA to ensure consistent application of federal energy-efficiency standards at the provincial level.
- Develop textile-sector-specific technical guidance aligned with CBAM-relevant energy performance benchmarks.

Expected Outcomes

- Higher rates of audit completion and, critically, audit-recommendation implementation.
- More consistent federal-provincial application of energy-efficiency standards.

6.7 Provincial Governments (Punjab)

Existing Challenge

Punjab hosts the majority of national textile production capacity, yet provincial enforcement of environmental standards, energy audit coverage, and verification infrastructure remains limited relative to the concentration of export-oriented production.

Why Action Is Needed

The study finds that provincial implementation capacity, not federal policy design, is the binding constraint on readiness in Punjab's textile clusters, with private-sector energy audit coverage particularly low among SMEs in Faisalabad and Multan.

Recommendations

- Scale Punjab Energy Conservation Agency (PEECA) audit and retrofit programmes to expand private-sector, and particularly SME, coverage in Faisalabad, Lahore, and Multan.

- Support the establishment of cluster-level pooled MRV platforms and shared verification and certification hubs to reduce per-firm compliance costs.
- Strengthen enforcement of Punjab Environmental Quality Standards (PEQS) and related waste and hazardous substances rules relevant to EU circularity requirements.
- Establish a provincial green financing window, linked to federal National Climate Finance Strategy priorities, targeted specifically at SME textile suppliers.
- Continue and expand textile-sector committee engagement to feed cluster-level implementation challenges into provincial industrial policy design.

Expected Outcomes

- Expanded SME access to energy audits, MRV support, and verification services.
- Improved provincial enforcement consistency with EU-facing standards.
- Stronger cluster-level readiness, particularly in SME-dense textile hubs.

6.8 Trade Development Authority of Pakistan (TDAP)

Existing Challenge

Exporters, particularly SMEs, report limited access to structured guidance on evolving EU market-access requirements, including CBAM-aligned reporting expectations and Digital Product Passport preparation.

Why Action Is Needed

The study finds that awareness gaps are most pronounced among smaller and less EU-integrated firms, and that market-access risk is directly tied to compliance readiness.

Recommendations

- Develop and disseminate structured CBAM and EU sustainability-compliance guidance materials tailored to textile exporters, with dedicated resources for SMEs.
- Incorporate CBAM readiness briefings into existing trade facilitation, buyer-matching, and export promotion services.
- Support exporter access to international verification and certification bodies through trade facilitation partnerships.
- Coordinate with APTMA to ensure consistency between industry-level and national trade-promotion guidance on CBAM.

Expected Outcomes

- Improved exporter access to accurate, timely compliance guidance.
- Stronger integration of CBAM readiness into national export promotion strategy.

6.9 All Pakistan Textile Mills Association (APTMA)

Existing Challenge

APTMA has taken a leading industry role through its National Compliance Centre and Sustainable Production Centre, but reach beyond leading exporters, particularly to SME members, remains limited.

Why Action Is Needed

The study finds that awareness and readiness are concentrated among the largest, most EU-integrated exporters, while SME members face the greatest vulnerability and the least support infrastructure.

Recommendations

- Scale the National Compliance Centre's advisory and training services to explicitly prioritise SME member firms and cluster-level suppliers.
- Expand pooled or shared MRV and verification service offerings to reduce the per-firm cost of compliance for smaller members.
- Continue and deepen engagement with GIZ, SMEDA, UET, and other technical partners to broaden the reach of energy audit and cleaner-production training.
- Serve as the primary industry channel for disseminating government guidance on energy policy, green financing windows, and CBAM regulatory developments to the full membership base.
- Advocate, on behalf of the sector, for the energy-policy stabilisation measures identified in this brief as prerequisites for sustained compliance investment.

Expected Outcomes

- Broader readiness gains extending beyond leading exporters to the wider membership base.
- Stronger, better-informed industry voice in energy and climate policy dialogue.

6.10 Development Partners

Existing Challenge

International financial institutions and bilateral partners provide technical assistance and catalytic finance relevant to Pakistan's climate and trade transition, but textile-sector-specific, CBAM-aligned support remains limited relative to the sector's export significance and exposure.

Why Action Is Needed

The study finds that green financing gaps and institutional capacity constraints, rather than lack of technical awareness, are the principal barriers to converting firm-level readiness into durable compliance capacity.

Recommendations

- Support the establishment of a Transitional CBAM Adjustment Facility, as proposed in this brief, providing concessional financing for verified emissions reporting, third-party audits, and renewable energy integration.
- Provide technical assistance for the development of accredited MRV and verification infrastructure, particularly in Punjab's textile clusters.
- Support blended finance mechanisms that de-risk private-sector lending for SME decarbonization investment.
- Support institutional capacity-building for Article 6 carbon market readiness and inter-ministerial coordination mechanisms.

Expected Outcomes

- Accelerated availability of concessional finance for compliance investment.
- Strengthened institutional and verification infrastructure.
- Improved alignment between development assistance and sector-specific export risk.

7. Recommendations for Industry

The evidence shows that compliance is already economically rational for most firms, and that the firms best positioned to benefit are those that act early and in a phased, manageable manner. The recommendations below are organised by time horizon.

7.1 Immediate Actions (0–12 Months)

- Conduct or update a facility-level energy audit and ensure findings are formally documented and tracked for implementation, not filed without action.
- Begin systematic Scope 1 and Scope 2 emissions tracking using recognised methodologies, even where full third-party verification is not yet feasible.
- Assign clear internal ownership of CBAM compliance, whether through a designated sustainability officer or an existing management function, to ensure continuity of effort.
- Review current EU buyer requirements and questionnaires to identify specific data gaps in current reporting practice.
- Map primary suppliers to identify traceability and data gaps relevant to future Digital Product Passport requirements.

7.2 Medium-Term Actions (1–3 Years)

- Pursue third-party verification of product-level embedded emissions for principal EU-facing product lines, to reduce exposure to conservative default-value assignment.
- Develop a documented CBAM compliance roadmap with defined milestones aligned to the 2026 and 2027 EU implementation dates.
- Pursue relevant certifications (such as ISO 14001 and other internationally recognised environmental management standards) where not already held, prioritising those most requested by EU buyers.
- Evaluate and pursue available concessional or green financing instruments for energy-efficiency and MRV system investment.
- Begin structured supplier engagement on environmental compliance auditing and sustainable material sourcing.
- Establish board-level or senior-management review of ESG and climate-related risk on a regular basis.

7.3 Long-Term Actions (3–5 Years)

- Pursue deeper decarbonization investment, including renewable energy integration appropriately scaled to current regulatory and financial conditions, and process or fuel-switching where economically viable.

- Fully integrate carbon strategy into broader corporate and export strategy, including pricing decisions that reflect embedded carbon considerations where relevant to buyer negotiations.
- Develop circular-economy capabilities, including recycled-content sourcing and end-of-life product management, in anticipation of tightening EU circularity requirements.
- Institutionalise ESG reporting as a standard component of annual corporate reporting, rather than an ad hoc buyer-driven exercise.

7.4 Guidance for SMEs: Practical, Low-Cost Measures

The study finds that SMEs face the greatest vulnerability but also stand to gain substantially from early, low-cost preparatory action. SMEs are encouraged to prioritise the following practical measures, which require limited capital outlay relative to full compliance investment:

- Participate in APTMA-facilitated or government-subsidised energy audits rather than commissioning costly independent audits.
- Join or request access to pooled and cluster-level MRV and verification platforms, where available, to share compliance infrastructure costs with peer firms.
- Begin basic internal record-keeping of energy consumption, fuel use, and material sourcing, the foundational data required for any future emissions reporting, even before formal MRV systems are in place.
- Attend industry association and buyer-led CBAM training and awareness sessions, which are typically offered at low or no direct cost.
- Engage early with anchor buyers or larger exporting firms in the supply chain to understand specific data and traceability expectations, rather than waiting for formal requirements to be imposed.
- Explore eligibility for SME-targeted concessional financing windows as they become available through the measures recommended in Section 6.

8. Proposed National CBAM Readiness Framework

The findings of this study point to the need for a coordinated national ecosystem linking policy, finance, MRV, verification, industry, and trade functions. No single institution can deliver CBAM readiness alone; sustained readiness requires these functions to operate coherently and in sequence.

8.1 Policy Layer

The policy layer establishes the regulatory foundation: stable and predictable energy pricing, coherent carbon pricing design, and clear sectoral decarbonization targets. Its central function is to remove the policy volatility identified in this study as the leading barrier to firm-level investment.

8.2 Finance Layer

The finance layer translates policy intent into accessible capital, through green financing windows, concessional lending, blended finance mechanisms, and fiscal incentives targeted at compliance-related investment, with specific provision for SME access.

8.3 MRV and Verification Layer

This layer provides the technical infrastructure, accredited testing facilities, verification bodies, and registry systems, required to convert firm-level data into credible, EU-recognised emissions reporting. Its expansion, particularly at the provincial and cluster level, is essential to closing the SME readiness gap identified in this study.

8.4 Industry Layer

The industry layer, anchored by APTMA and firm-level compliance functions, translates available policy, finance, and technical infrastructure into operational practice, including energy audits, certification, supplier engagement, and internal governance.

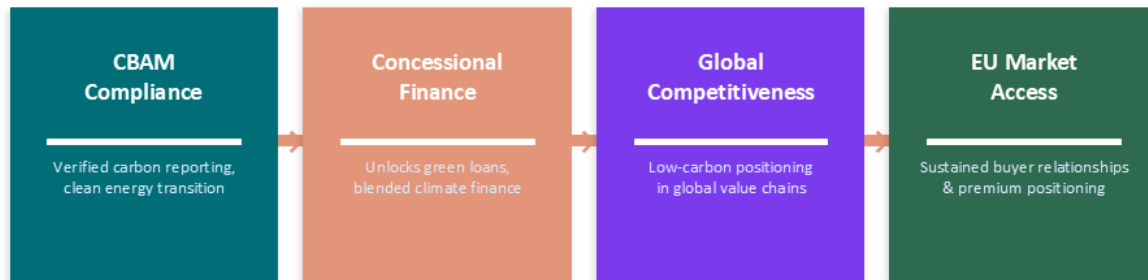
8.5 Trade Layer

The trade layer, led by the Ministry of Commerce and TDAP, ensures that compliance readiness is actively leveraged for market access, buyer engagement, and diversification strategy, positioning compliance investment as a competitiveness asset rather than a purely defensive cost.

8.6 Competitiveness Outcome

When these layers function coherently, the outcome is a textile sector that treats CBAM and related EU sustainability requirements as a source of durable competitive advantage: lower risk of default-value assignment, stronger buyer relationships, improved access to climate finance, and more resilient EU market access over time.

Strategic Implications: Compliance as Competitiveness



Protect Market Access

Compliance prevents buyer exit, contract loss & reputational damage — already occurring even without full carbon tariffs

Unlock Climate Finance

Verified MRV opens doors to concessional loans, blended finance, and EU co-financing under NCFS frameworks

Compete in Low-Carbon Chains

Early compliance positions Pakistan's textile sector advantageously in global supply chains demanding decarbonization

* Visual: Flow Diagram — Compliance → Finance → Competitiveness → Market Access

9. National Action Plan

The following phased roadmap translates the recommendations in Section 6 into a sequenced national action plan, with indicative institutional responsibilities.

9.1 Short-Term Priorities (0–12 Months)

- Stabilise or ring-fence captive power levy treatment for export-oriented industries. Responsibility: Ministry of Finance, Ministry of Energy.
- Review the NEPRA Prosumer Regulations, 2025 to restore predictable economics for industrial-scale renewable investment. Responsibility: NEPRA, Ministry of Energy.
- Establish the CBAM Trade Facilitation Unit within the Ministry of Commerce. Responsibility: Ministry of Commerce.
- Launch expanded, subsidised energy audit coverage targeting SME textile clusters. Responsibility: NEECA, PEECA.
- Disseminate structured CBAM compliance guidance to exporters. Responsibility: TDAP, APTMA.

9.2 Medium-Term Priorities (1–3 Years)

- Expand accredited MRV and verification infrastructure in Punjab's major textile clusters. Responsibility: Ministry of Climate Change, PEECA, Punjab EPA.
- Operationalise the Transitional CBAM Adjustment Facility. Responsibility: Ministry of Finance, State Bank of Pakistan, Development Partners.
- Institutionalise CRI-based benchmarking as a standing diagnostic tool for targeting government and donor support. Responsibility: Ministry of Commerce, APTMA.
- Advance domestic carbon pricing and Article 6 readiness, with explicit treatment of interaction with CBAM. Responsibility: Ministry of Climate Change.
- Scale pooled MRV and verification platforms at the cluster level. Responsibility: APTMA, Provincial Government (Punjab).

9.3 Long-Term Priorities (3–5 Years)

- Achieve broad-based SME readiness through sustained financing, training, and infrastructure investment. Responsibility: All institutions, coordinated by Ministry of Commerce.
- Establish a fully operational domestic carbon market with Article 6 international linkage. Responsibility: Ministry of Climate Change.
- Institutionalise inter-ministerial coordination on energy, climate, and trade policy coherence. Responsibility: Planning Commission, Ministry of Commerce, Ministry of Climate Change.

- Position Pakistan's textile sector as a regional leader in verified low-carbon export production.
Responsibility: APTMA, Ministry of Commerce, exporters.

10. Conclusion

The evidence assembled in this study leads to a clear conclusion: Pakistan's textile sector is not starting from a position of weakness. Leading exporters have already demonstrated meaningful technical awareness and, in many cases, tangible compliance capacity. The economic case for compliance is already favorable for most firms, and strengthens further once the emissions-reduction benefits of compliance investment are properly accounted for. What stands between this foundation and durable, sector-wide readiness is not a lack of understanding, but a lack of policy predictability, financing access, and institutional coordination.

CBAM should therefore not be viewed by Pakistani policymakers, industry associations, or exporters primarily as a trade barrier to be resisted or absorbed defensively. It should be understood as a catalyst for industrial modernisation, one that, if met with coordinated and predictable policy support, can strengthen the long-term resilience, credibility, and competitiveness of Pakistan's most important export sector. The cost of inaction is not merely the risk of future tariffs; it is the continued erosion of investment confidence in a sector that data show is already prepared to respond, if given a stable and supportive policy environment in which to do so.

The institutions named throughout this brief, spanning trade, climate, energy, finance, and industry, each hold a distinct and necessary role in closing this gap. Coordinated action across these institutions, sequenced according to the national action plan presented above, offers Pakistan a credible pathway to convert CBAM readiness from a compliance obligation into a lasting source of export competitiveness.

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