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Punishing Early Movers: Baseline Politics and Decarbonization in Bangladesh's Apparel Supply Chain

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Abstract

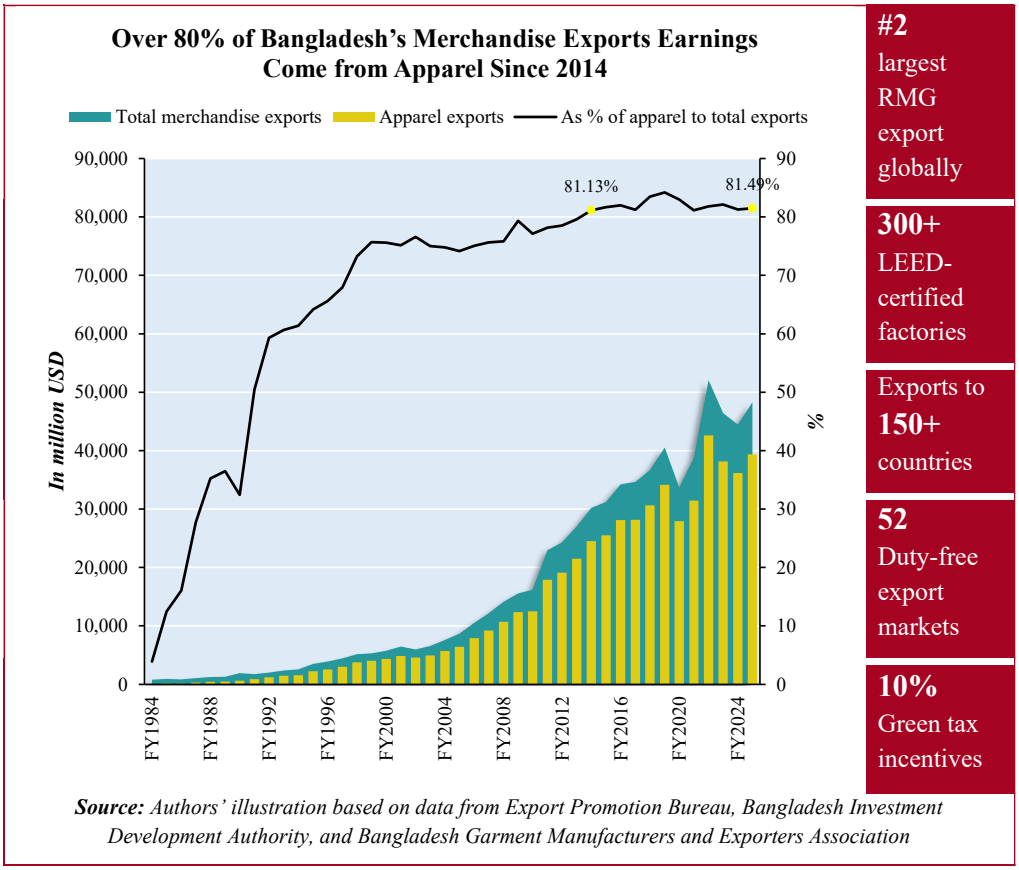
This paper examines how baseline-setting practices shape the distribution of decarbonization burdens in Bangladesh's export-oriented apparel supply chain. Using 15 semi-structured interviews with suppliers, brands, industry associations, and policy stakeholders, the paper identifies baseline politics as a plausible mechanism through which transition burdens are unevenly redistributed across firms. Baseline politics is defined here as the governance process through which particular reference years, measurement rules, and reporting logics determine whose earlier environmental efforts count and whose do not. The evidence suggests that some Bangladeshi suppliers invested in cleaner production, energy efficiency, wastewater treatment, green certification, and internal environmental reporting well before carbon reduction became a mainstream sourcing requirement. Yet current target architectures often adopt later baseline years, especially 2019, or operate with fragmented and shifting benchmark logics. Under such conditions, early movers may lose recognition for prior gains and face steeper, more expensive marginal reductions than firms that delayed action. The paper does not argue that baseline politics is the only explanation for uneven transition outcomes. Rather, it shows that this lens adds explanatory value beyond generic buyer power by clarifying how temporal measurement systems can reward delay and penalize initiative. The implications are especially significant for suppliers that invested early without subsequent price recognition or formal credit for those efforts.

Introduction

Bangladesh's export basket is strikingly concentrated (Figure 1): over 80% of merchandise export earnings have come from apparel since 2014, peaking at 81.3% (FY2016) and remaining at 81.4% (FY2025). While total exports approach $48.3 billion in the last fiscal year 2024-25 (starting from June), apparel alone contributes nearly $40 billion, underscoring a deep structural reliance on a single sector. With exporting to more than 150 economies, Bangladesh is now second largest apparel exporter in the world with hosting 68 of the world's top 100 green garment factories and now it has over 300 LEED (Leadership in Energy and Environmental Design) factories (Figure 2). Although systematic compliance enforcement by global buyers in Bangladesh began after 2013 following the Rana Plaza disaster – initially focused on workplace safety – the shift toward environmental and climate standards gained momentum only in the late 2010s. Notably, by this time, Bangladesh had already developed 89 LEED-certified green factories, reflecting proactive investments in energy efficiency and environmental compliance. This trajectory has since accelerated, with the country now hosting over 300 green factories – the highest in the world. Decarbonization has become a defining condition of participation in global apparel supply chains. International buyers increasingly ask suppliers to reduce greenhouse gas emissions, increase renewable energy use, improve energy efficiency, strengthen environmental reporting, and demonstrate traceability across production processes. Recent studies on Bangladesh's garment industry shows that environmental and climate

pressures are now layered onto an already highly unequal production network shaped by fast fashion, low margins, and transnational regulation (Ashraf and Prentice, 2026). Sectoral and cross-sector assessments likewise show that low-carbon suppliers face persistent barriers around measurement standards, input costs, financing, and buyers' hesitation toward unfamiliar decarbonized solutions (World Economic Forum, 2024). Yet one question remains unresolved in the Bangladesh apparel context: how are decarbonization burdens distributed among suppliers that did not all begin the transition at the same historical moment? The dominant answer in both policy debate academic writing is that environmental upgrading reflects a familiar power asymmetry between buyers and suppliers. That diagnosis remains important, but it is incomplete. Qualitative evidence from Bangladesh suggests that the problem is not only that suppliers must decarbonize under commercial pressure. It is also that target architectures often ignore the timing of earlier environmental action. Some Bangladeshi manufacturers began cleaner production, energy-efficiency upgrades, wastewater treatment, green-building certification, and sustainability reporting long before carbon reduction became a mainstream sourcing requirement. Yet when buyers later formalized climate targets, those earlier improvements were not always recognized within the benchmark systems now used to evaluate progress. Instead, later baseline years, most notably 2019 in several interview accounts, became the reference point from which improvement would be judged.

Figure 1: How Bangladesh's export economy hinges on apparel industry

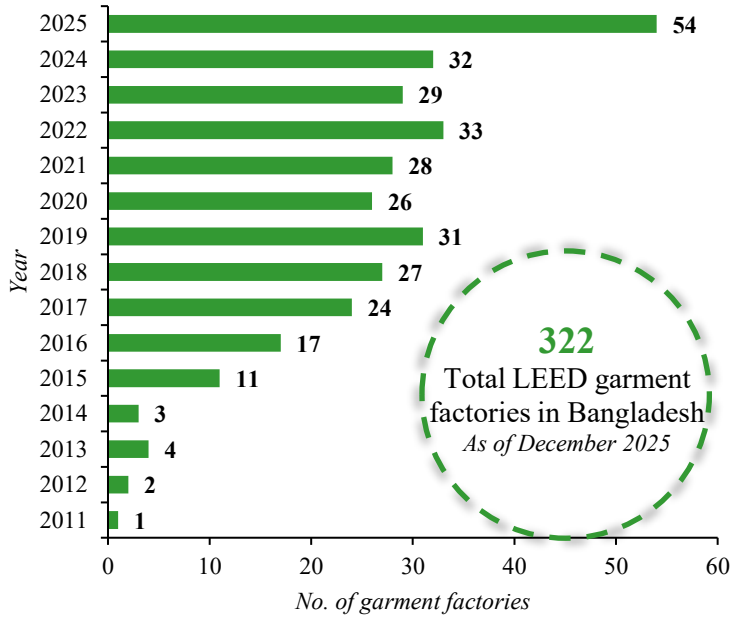


Source: *Authors' illustration based on data from Export Promotion Bureau, Bangladesh Investment Development Authority, and Bangladesh Garment Manufacturers and Exporters Association*

Viewed from this angle, the transition problem is not simply about who currently pays. It is also about which past actions are allowed to count. This paper argues that a significant part of the answer lies in baseline politics. By baseline politics, it meant the

governance process through which buyer-side target systems, reporting tools, and reduction benchmarks establish a temporal starting point that determines which emissions count, which reductions count, and which investments are visible as progress. Existing research has already shown that Bangladesh's green transition is shaped by the politics of crisis, regulatory asymmetries, and unequal upgrading pressures across global production networks (Ashraf and Prentice, 2026). Wider climate-policy research has also debated fragmented mitigation regimes and the possible first-mover advantages of countries or regions such as the European Union and China (Otto et al., 2014; Karkatsoulis et al., 2016). What that literature does not explain is how first-mover dynamics operate at the supplier level inside buyer-driven apparel chains, where climate leadership may not generate advantage at all. This paper contributes by bringing the question of first movers down to the firm level and by showing that in Bangladesh's apparel supply chain, early movers may be penalized rather than rewarded when later baseline years and fragmented target systems erase prior environmental gains.

Figure 2: Bangladesh, the hub of green garment factories



Source: *Authors' illustration based on data from the United States Green Building Council (UGBC), 2025*

The paper therefore advances a narrower but sharper claim than the generic argument that suppliers bear decarbonization costs. Its central argument is that a hidden inequality in apparel decarbonization lies in temporal measurement itself. When later baseline years are adopted without credible recognition of earlier voluntary action, firms that moved first may face steeper and more expensive marginal reduction paths than firms that waited. The issue is not only one of buyer power, but also of historical misrecognition embedded in benchmark design. The rest of the paper proceeds as follows. The next section reviews the literature on sustainable sourcing, environmental upgrading, first-mover dynamics, and supplier-side decarbonization barriers. The following section develops the theoretical framework of baseline politics. The methodology section then explains the qualitative design, sampling logic, anonymization strategy, and analytic procedure. The results section presents the findings through five themes. The discussion clarifies what the baseline-politics lens

adds beyond conventional buyer–supplier asymmetry, and the conclusion summarizes the contribution and outlines implications for future research.

Literature Review

Research on sustainable sourcing has long emphasized that lead firms shape supplier behavior through standards, audits, procurement routines, and commercial pressure. Foundational work in purchasing and supply management shows that sustainability cannot be treated as an isolated add-on; it has to be translated into the routines through which suppliers are selected, monitored, and evaluated (Schneider and Wallenburg, 2012). More recent work similarly shows that sustainability and innovation are often governed separately even when greener outcomes depend on their integration into procurement practice (Picaud-Bello et al., 2024). A second body of literature focuses on environmental upgrading in global value chains and production networks. This work shows that greener production does not automatically produce socially or economically just outcomes. In Pakistan's apparel sector, for example, environmental responsibility has been pushed onto manufacturers in ways that deepen economic and social downgrading (Khan et al., 2020, as discussed in Ashraf and Prentice, 2026). In Bangladesh, the green transition has similarly been shown to unfold through unequal power relations, climate-crisis discourse, and differentiated experiences of risk across global production networks (Ashraf and Prentice, 2026). The key insight here is that green transition is not simply a technical response to climate change; it is also a political process that can reproduce existing asymmetries. A third literature examines first-mover dynamics in climate mitigation. At the macro level, fragmented-policy research studies what happens when particular states or regions move ahead of others in decarbonization. Otto et al. (2014) analyze early-mover climate regimes involving the European Union and China and show that fragmented mitigation can generate leakage effects through energy markets and land use. Karkatsoulis et al. (2016), by contrast, argue that the European Union may reap first-mover advantages through clean-technology development, trade, and innovation if it acts earlier than other world regions. These studies are important because they frame first-mover status as potentially beneficial. However, they do so at the level of states and macro-regional policy, not at the level of suppliers inside buyer-driven production networks. A fourth literature comes from sectoral and cross-sector decarbonization studies. Reviews of energy transition consistently identify high capital requirements, inconsistent environmental policies, inter-sectoral competition for decarbonization options, and social tensions as major obstacles to transition (Papadis and Tsatsaronis, 2020). Supplier-focused work reaches a similar conclusion from the firm side. The World Economic Forum (2024) argues that low-carbon suppliers face three recurring barriers across sectors: lack of emissions measurement methods and standards, the cost and availability of critical inputs, and buyers' risk aversion or unfamiliarity with decarbonized solutions. Those observations map closely onto the Bangladesh apparel interviews used in this paper, where respondents repeatedly described changing metrics, weak comparability, uncertainty around what buyers actually want, and limited commercial recognition for environmental investments. Despite these insights, an important gap remains. Existing work tells us that suppliers are under pressure to decarbonize, that green transition can reproduce unequal power relations, that fragmented regimes can create uneven outcomes, and that first movers may sometimes benefit at the macro level. What remains under-theorized is the possibility that supplier-level first movers may be disadvantaged precisely because current target architectures adopt later baseline years and thereby disregard earlier environmental gains. The question is not simply whether early action exists. It is whether early action remains visible once later benchmark systems take hold.

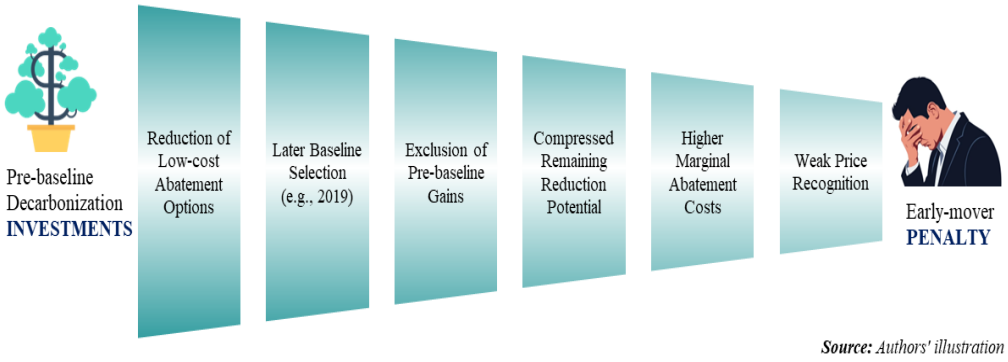
This paper addresses that gap. It contributes to the literature by shifting attention from current buyer pressure alone to the temporal architecture of measurement. In doing so, it builds a bridge between global production-network research on green transition, climate-policy research on first movers, and supplier-focused work on measurement and demand barriers. Its originality lies not in claiming that Bangladesh's garment sector faces environmental pressure; that is already well established. Its originality lies in showing how later baseline-setting may transform early action into a liability rather than an advantage.

Theoretical Framework: Baseline Politics

The paper conceptualizes baseline politics as the governance process through which particular reference years, measurement rules, and reporting logics determine which prior environmental efforts are recognized as progress and which are rendered invisible (Figure 3). Baselines are often presented as technical devices for comparability. In practice, however, they are distributive instruments. They shape reputational standing, determine apparent ambition, and alter the economic difficulty of subsequent reductions. The framework developed here rests on three linked propositions.

First, decarbonization is cumulative and path dependent. A factory that invested early in cleaner production, energy-efficient machinery, heat recovery, wastewater treatment, or green-building systems does not face the same reduction frontier as a factory that delayed such action. This follows from the simple fact that low-cost and medium-cost gains are not infinitely repeatable. Once earlier improvements have been made, the remaining reductions are often more capital-intensive and more difficult to secure.

Figure 3: Baseline Politics and the Early-Mover Penalty in Supply Chain Decarbonization



Source: *Authors' illustration*

Second, baseline selection redistributes recognition. If a buyer, reporting system, or decarbonization framework adopts a later reference year, such as 2019, then gains achieved before that date may disappear from the formal accounting frame. The supplier may still carry the cost of those earlier investments, but the later benchmark will judge progress as if those gains never happened. Baseline-setting is therefore not a neutral temporal convention. It decides which history matters.

Third, under conditions of weak price transmission, later baselines can punish early movers. Supplier-side decarbonization studies already show that green premiums are difficult to secure and that buyers often hesitate to value low-carbon solutions in ordinary sourcing practice (World Economic Forum, 2024). If earlier gains are also excluded from later accounting, then proactive firms may face a double penalty: they bear the cost of earlier investments and then confront a steeper and more expensive marginal reduction path than later adopters. In this sense, the hidden distributive issue

lies in the interaction of time, measurement, and commercial non-recognition. This framework also provides an inversion of conventional first-mover arguments. Macro-level climate-policy research frequently associates early action with technology leadership, learning effects, and future competitive advantage (Karkatsoulis et al., 2016). At the supplier level in Bangladesh's apparel chain, however, early action may generate the opposite effect. When benchmark systems are redesigned later and commercial recognition remains weak, first movers may be structurally disadvantaged. The contribution of the paper is therefore to reconceptualize first-mover disadvantage not as a failure of motivation, but as a problem embedded in the temporal governance of decarbonization.

Methodology

This study employs a qualitative research design to investigate how decarbonization pressure is experienced and interpreted in Bangladesh's export-oriented apparel supply chain, and how target architectures may unevenly affect firms depending on when they began environmental upgrading. A qualitative approach is appropriate because the paper is concerned with organizational timing, perceived recognition, and the meanings respondents attach to past investment, buyer expectations, reporting systems, and benchmark-setting. Similar multi-sited and multi-scalar qualitative approaches have been used effectively to analyze transnational regulation and green transition in Bangladesh's garment sector (Marcus, 1995; Burawoy, 2003; Ashraf and Prentice, 2026). The analysis draws on seventeen semi-structured interviews conducted for a broader research project on carbon reduction, climate-related transition, and financing in Bangladesh's apparel sector. The interview set used in this paper comprises ten supplier interviews, two brand interviews, two industry association interviews, and one policy interview. For this paper, respondents are anonymized through role-based codes. Supplier respondents are coded SR1 to SR10, brand respondents BR1 to BR2, association respondents AR1 to AR2, and the public-sector respondent PR1. The supplier set includes respondents holding positions such as factory owners, directors, group-level executives, sustainability managers, compliance leads, and technically informed operational personnel. The sample intentionally reflects variation across vertically integrated groups, textile-processing operations, garment-focused manufacturing units, and firms of differing scale and capability. This variation is analytically useful because the paper is not simply interested in whether carbon reduction pressure exists, but in how temporal benchmark systems interact with different organizational histories of upgrading. Respondents were recruited through purposive sampling. The objective was not statistical representativeness but informed access to actors directly involved in environmental upgrading, buyer interaction, target-setting, sustainability reporting, financing, or relevant policy processes. Semi-structured interviewing was appropriate because it enabled respondents to explain their own histories of environmental action, shifting buyer demands, and interpretations of benchmark systems in open-ended terms, rather than forcing them into predefined categories. This kind of elite and stakeholder interviewing is common in qualitative studies of supply chains and governance, especially where organizational process and interpretation are central to the research question (Ashraf and Prentice, 2026). The transcripts were analyzed through iterative thematic coding. In the first stage, the interview materials were read repeatedly and descriptive codes were generated, including earlier upgrading, baseline year, target ambiguity, recognition failure, financing, technological investment, and survival pressure. In the second stage, these codes were compared across actor groups and clustered into more interpretive themes. The progression from first-order coding to a mechanism- oriented interpretation follows an inductive thematic logic commonly used in qualitative social-science research (Braun and

Clarke, 2006). The coding was not treated as a purely individual exercise. Interview summaries, thematic notes, and coded interpretations were checked back against transcripts where ambiguity remained, and the final analytical themes were developed through cross-stakeholder comparison. This triangulation across suppliers, brands, associations, finance actors, and the policy stakeholder was used as an analytic safeguard against over-reliance on any single respondent category. This study has limitations. It does not estimate the average incidence of baseline-related disadvantage across the entire sector, nor does it establish that all buyers use the same benchmark logic. The evidence is strongest for identifying a plausible governance problem rather than for quantifying its prevalence. Even so, Bangladesh is a strategically important case because it combines strong export dependence, growing decarbonization pressure, intense cost competition, and a supplier landscape that includes both early movers and late adopters within the same global chain environment.

Results

Environmental upgradation keeps rolling, even before foreign buyers release their climate-standard sourcing requirements

A first pattern across the interviews is that several suppliers began environmental upgrading well before carbon reduction became a mainstream buyer requirement. In these accounts, early action was not initially framed through formal carbon targets. Rather, suppliers linked it to efficiency gains, cost reduction, cleaner production, green-building ambitions, and longer-term business positioning. Respondents described interventions such as cleaner production programmes, utility-saving measures, exhaust gas boilers, and other factory-efficiency initiatives that were introduced years before carbon accounting became central to buyer-facing sustainability demands.

> *"We began to see direct results around 2013, which is when our Cleaner Production Program concluded. But the interventions themselves started earlier, around 2011. Since then, we have gone through PaCT Phase I & II, along with several other initiatives in collaboration with different brands."* (SR1)

This finding shows that some suppliers had already begun investing in resource-efficiency and environmental upgrading long before current decarbonization frameworks hardened. Other interviews echoed the same temporal pattern. One supplier traced its environmental initiatives back to 2008–2010, when exhaust gas boilers were introduced as part of a broader effort to reduce utility waste. Another explained that early reductions in utility consumption were initially pursued as part of internal cost-saving efforts, and only later became incorporated into more formal carbon-reduction pathways. Environmental improvement in Bangladesh's export apparel sector did not begin solely as a response to recent brand pressure; for some firms, it predated the current language of net zero, science-based targets, and buyer-led emissions reporting.

> *"When we initiated these efforts, it was very much proactive. But now the challenge is that they are saying, 'If 2019 is taken as the base year, then anything done before that will not be considered.'* (SR2)

These accounts matter because they show that the current decarbonization landscape in Bangladesh is not entirely a reaction to recent buyer pressure. Some firms had already moved, and they had done so through substantial investments. The later benchmark systems now used to judge progress therefore intervene in an already differentiated field

of supplier histories.

Baselines and benchmarks are fragmented, shifting, and often unclear

A second pattern is the instability of the benchmark system itself. Respondents repeatedly described uncertainty over which year counts, which tool should be used, and how reduction should be measured across buyers and reporting frameworks. This was visible not only among suppliers but also among brands, associations, and actors involved in financing and policy support.

> *"What will be the baseline? Will the baseline be 2016, 2018, 2019, 2020, or 2022? Each time a different year is suggested." (SR7)*

Another respondent added,

> *"While everyone wants reduction, the method, the tool, and the timing differ across parties, making it difficult for factories to know which framework will ultimately matter."(SR5)*

Other interviews reflected the same fragmentation. One brand-side respondent described working from a revised 2022 baseline, while another framed reduction through a 2019 pathway. Association respondents similarly noted that buyers themselves often do not clearly state what the final benchmark will be, and that many still speak in vague or shifting terms about renewable energy, circularity, and long-term transition pathways. Finance and policy actors described related weaknesses in the measurement infrastructure. One finance respondent noted that in Bangladesh reductions are often accepted in rough before-and-after terms, without the depth of investment-grade audit systems that would allow rigorous comparability. The policy-side interview likewise emphasized persistent data constraints even where audit requirements exist. Together, these accounts suggest that baseline politics is enabled by a wider environment of measurement inconsistency.

Earlier gains can disappear once later baseline years are imposed

The strongest finding in the study is that earlier environmental investments can become effectively invisible under later target systems. This was articulated most clearly by suppliers that had invested heavily in cleaner production and efficiency before current carbon governance hardened. Their frustration was not that environmental action had failed technically, but that those gains no longer seemed to count once later benchmark years were adopted.

> *"These will not be counted. It does not make sense. All the savings we have achieved will no longer be considered as if we have done nothing." (SR8)*

Another supplier described a similar logic in less direct language, noting that those who were proactive earlier had already reached a more advanced stage and now faced tougher subsequent reduction demands than firms that delayed action. The same concern appeared in interviews where respondents described uncertainty over whether baseline-setting would recognize older audits, earlier cleaner production programs, or long-running environmental reporting practices. This theme goes beyond the familiar point that suppliers bear costs. It shows that the accounting frame itself can produce inequality. When earlier gains disappear from the formal reference period, the pioneers of environmental upgrading may appear to have done less than firms that waited longer to act.

Early movers face steeper and more expensive marginal reduction paths

A fourth theme is that once earlier low-cost interventions have already been implemented, the remaining reductions become harder and more expensive. This means that the choice of baseline year has material consequences, not only symbolic ones. It changes the abatement frontier from which suppliers are judged.

"We have already addressed the low-hanging fruits, even the medium-hanging fruits. Now everything left is high-hanging." (SR1)

This statement captures the economic core of the paper. Decarbonization is cumulative. Factories that already improved machinery, reduced water use, installed recovery systems, optimized energy consumption, or adopted green-building systems do not face the same reduction frontier as factories that delayed such action. What remains for early movers is often capital-intensive, technologically demanding, and slower to pay back.

"We don't really have any alternative other than switching to biomass boilers." (SR6)

Yet other interviews suggested that the challenge extends beyond fuel substitution alone. Suppliers also pointed to the need for larger solar systems, more advanced recycling initiatives, improved metering, and more sophisticated reporting and assessment systems. In the words of another respondent,

"Once you can measure, you can control." (SR5)

These statements indicate that the remaining stages of decarbonization are increasingly infrastructural, data-intensive, and capital demanding. Other interviews echoed this logic. Suppliers discussed the need for larger solar systems, biomass alternatives, more advanced recycling, better metering, and more sophisticated reporting and assessment systems. Several also described limited physical space, constrained capital, and the shift from obvious efficiency gains to more structurally difficult upgrades. In this sense, baseline politics affects not only how performance is represented, but also which firms are pushed toward more expensive abatement earlier.

Weak commercial recognition compounds the penalty

The final theme is that earlier environmental action does not reliably translate into direct commercial reward. This means that early movers can be disadvantaged twice: their prior gains are not fully recognized in later target systems, and those same gains do not necessarily bring routine price support.

"Brands never say, 'Let's give them a higher price just because they've done all these things.'" (SR3)

Another supplier put the issue more formally by arguing,

"There is no sort of matrix whereby they take the sustainability indexes in their pricing mechanism." (SR4)

Association interviews echoed this concern by emphasizing that investment burdens remain on the supplier side and that environmental commitments still have no routine reflection in price. In the words of one association respondent,

"The one who gives the price does not care about this … the buying department walks around saying, 'Reduce price! Reduce price! I don't care about environment and sustainability at all." (AR2)

Some respondents did qualify this picture. A few larger firms suggested that earlier sustainability leadership may still yield indirect commercial benefits, such as stronger buyer confidence, reputational advantage, or access to more demanding markets. However, these benefits remain indirect, uneven, and difficult to treat as a predictable mechanism of cost recovery. Brand perspectives, however, introduce a contrasting view. One respondent strongly oppose the statement of garment owners – "You don't give us a price." They further noted, "Factories often claim they don't get proper prices, but this is debatable. It depends on factors like product type and lead time." The overall pattern is therefore not one of total non-recognition, but of weak and unreliable recognition shaped by differing pricing logics across actors. Under such conditions, early environmental initiative can remain strategically valuable while still being commercially under-rewarded.

Discussion

The findings extend existing work on supply-chain decarbonization in three ways. First, they confirm that Bangladesh's garment-sector transition is deeply shaped by buyer pressure, uneven upgrading burdens, and the politics of crisis (Ashraf and Prentice, 2026). However, they also show that the resulting burden is not distributed only through present bargaining power. It is also distributed through temporal measurement systems. The question is not just whether suppliers are asked to reduce emissions. It is also from when those reductions are allowed to count. Second, the paper adds a new layer to debates on first movers. Macro-level climate-policy research often associates early action with technology leadership, learning effects, and possible competitive advantages, particularly for major economies or regional blocs (Otto et al., 2014; Karkatsoulis et al., 2016). The Bangladesh interviews suggest an inversion of that logic at the supplier level. In a buyer-driven apparel chain, early environmental action does not automatically produce advantage. When later baseline years are imposed and price transmission remains weak, first movers may be penalized rather than rewarded. Third, the findings complement supplier-focused decarbonization research. The World Economic Forum (2024) identifies measurement uncertainty, input constraints, and buyer risk aversion as recurring obstacles for low-carbon suppliers across sectors. The present study supports those claims but shows that the issue is not only that measurement standards are weak. It is that the temporal rules of measurement themselves may generate inequality. Baseline politics therefore helps explain why some of the most proactive suppliers can still feel structurally disadvantaged despite long histories of environmental investment. These findings also sharpen just-transition debates. Existing research rightly emphasizes who pays for environmental upgrading and how transition burdens are shifted across firms and workers. The present study supports that concern, but it also shows that injustice can emerge inside the accounting architecture itself. A transition may become unequal when it ignores prior voluntary action and judges all suppliers as if they began from the same historical point.

What baseline politics adds beyond conventional power asymmetry

The evidence does not imply that baseline politics is the only explanation for uneven decarbonization outcomes. Several alternative explanations remain valid. Buyers may resist price transmission because of retail competition and sourcing pressure. Suppliers differ in their access to finance, technical capability, and organizational ambition. Larger groups may continue investing for strategic reasons even in the absence of direct price

premiums. Some brands may also provide selected support through consulting, subsidy, feasibility assessment, or guarantee mechanisms. What the baseline-politics lens adds is a more specific explanation for why firms with similar current buyer exposure can still face different transition burdens depending on their prior histories of upgrading. Conventional buyer power explains why suppliers struggle to recover costs. It is less well equipped, on its own, to explain why earlier voluntary reductions can later disappear from the formal accounting frame. The present paper therefore does not replace the power-asymmetry explanation. It identifies an additional mechanism through which unequal transition outcomes are produced.

Boundary conditions and broader implications

The scope of the argument should be stated clearly. This paper speaks primarily to buyer-driven export apparel chains in which carbon-reduction targets are becoming formalized but where baseline systems remain fragmented or selectively applied. It does not claim that all global buyers use later baselines in the same way, nor that all early movers are equally disadvantaged. The point is narrower: where later benchmarks dominate and earlier gains are excluded, a hidden penalty for early movers becomes possible. The broader theoretical contribution of the paper is to treat baseline-setting not as a neutral technical device but as a governance instrument. In supply-chain decarbonization, baselines do more than measure progress. They define the history that is allowed to matter. In that sense, baseline politics shapes competitive visibility, redistributes recognition, and alters the economics of compliance. This matters for sustainable sourcing and climate governance debates because it suggests that temporal misrecognition is itself a form of transition inequality. Where prior voluntary efforts are ignored, environmental ambition is not simply unsupported. It is selectively erased. That insight also has implications for policy and reporting. If decarbonization systems reward only post-baseline gains, they risk creating the wrong incentives by making delay more legible than initiative. The findings also connect to wider development concerns. Bangladesh's supplier landscape includes a mix of pioneers, followers, and firms still struggling with basic environmental capacity. A target architecture that fails to differentiate between these trajectories may punish some of the sector's most proactive firms while encouraging a more superficial compliance race among late adopters. In this sense, baseline politics is not just an accounting issue. It is a development issue because it shapes which forms of firm behavior are rewarded, ignored, or made economically harder to sustain.

Conclusion

This paper examined how baseline-setting practices shape the burden of decarbonization in Bangladesh's export-oriented apparel supply chain. Using anonymized qualitative evidence from suppliers, brands, industry associations, and a policy stakeholder, it argued that current target systems may disadvantage firms that invested in environmental upgrading before later carbon benchmarks became dominant. The problem is not only that suppliers bear costs. It is that the temporal architecture through which progress is judged can erase earlier gains and thereby produce a hidden penalty for early movers. The findings show that some Bangladeshi suppliers took cleaner production, resource efficiency, green-building, and environmental reporting seriously long before carbon reduction became a central sourcing demand. However, later target regimes often operate with fragmented, shifting, or more recent baselines. Under such conditions, earlier gains may disappear from formal recognition, while remaining reduction requirements become more expensive and more difficult to achieve. The paper therefore contributes a sharper explanation for uneven transition outcomes in apparel supply chains. Future research could compare baseline architectures across brands, test whether certain reporting systems

better recognize prior action, and examine how this issue varies by supplier size, product segment, and sourcing model. For policy and practice, the message is straightforward: decarbonization in apparel will not become fairer merely by raising ambition. It will also require more credible and historically inclusive ways of counting progress.

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Conflicting Interests

The authors have stated that there are no competing interests.

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