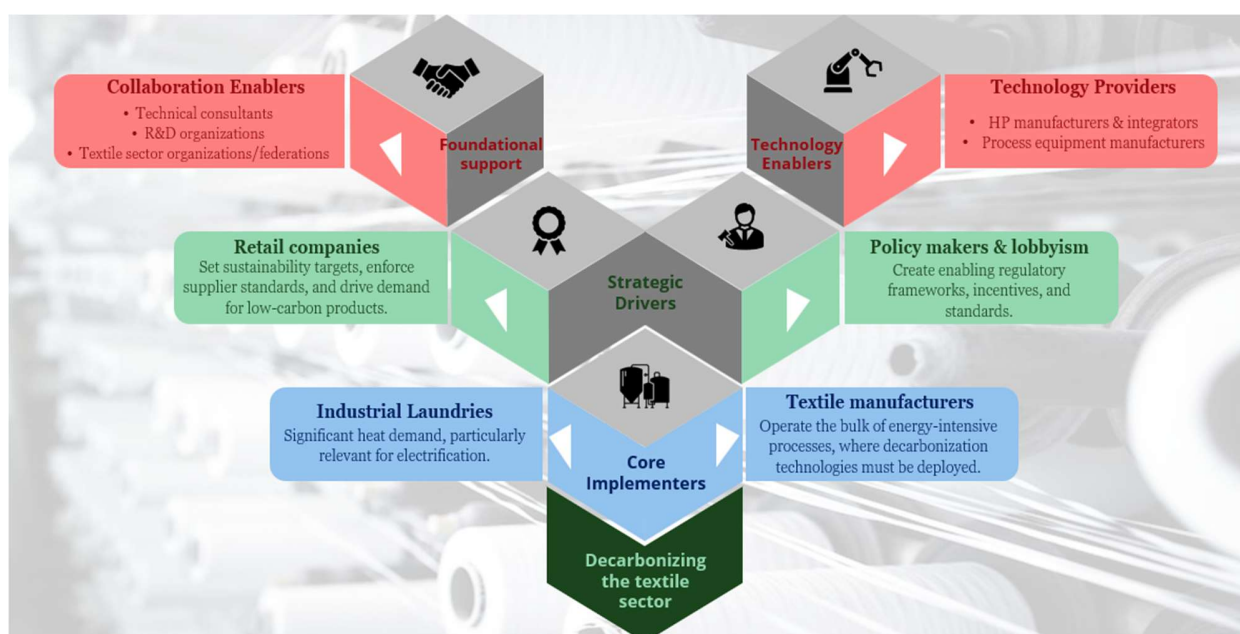


Task 2 – Sector Collaboration: From Barriers to Opportunities: Sector-Specific Stakeholder Perspectives on Industrial Heat Pump Uptake

Textile Sector

The textile value chain is highly fragmented and globally distributed, with heat-intensive manufacturing concentrated mostly in Asia. Therefore, industrial heat pump adoption depends not only on technical feasibility but also on a complex ecosystem of multiple stakeholders as illustrated below, whose decisions collectively determine the pace of the sector's decarbonization.



Stakeholder Mapping for the textile sector

Sector Landscape

Following factors influence and shape heat pump adoption and deployment potential within the textile sector.

- **Sector organization:** Global textile supply chains are predominantly buyer-driven and rely heavily on SME suppliers operating on narrow margins. While brand decarbonization commitments create demand for emissions reductions, suppliers often lack the financial capacity and investment certainty required to implement industrial heat pumps.
- **Energy prices and tariffs:** The business case for industrial heat pumps depends heavily on the relative cost of electricity versus fossil fuels. High industrial electricity tariffs, peak demand charges, and fossil fuel subsidies in many producing countries can reduce the economic attractiveness of electrification.
- **Infrastructure:** Limited grid capacity, unreliable electricity supply, and carbon-intensive power generation can constrain industrial heat pump deployment. Access to renewable electricity and opportunities for waste heat recovery significantly improve decarbonization potential.
- **Retrofitting:** Many textile facilities operate with legacy steam systems and space-constrained factory layouts that were not designed for electrified heating technologies. Retrofitting existing equipment and integrating industrial heat pumps into production processes often requires significant engineering effort.
- **Technical capability:** Limited local expertise in industrial heat pump design, process integration, operation, and maintenance increases perceived technology risk. The lack of textile-sector demonstration projects further slows adoption and investment confidence.



- **Policy environment:** Industrial heat pump deployment is influenced by carbon pricing mechanisms, industrial decarbonization programs, renewable energy incentives, electrification policies, and increasing supply-chain reporting requirements related to Scope 3 emissions.

Sector Analysis: Barriers & Opportunities for Industrial Heat Pump Uptake

Sector specific barriers that act as blockers for adoptions vs. opportunities that can unblock adoption

Barrier category	Barrier	Opportunity	Stakeholder
Technical	Limited sector-specific technical expertise in producing regions and lack of full-scale demonstrators	Perform process integration studies	Consultants, R&D
		Knowledge transfer regarding technology status, integration guidelines and replication potential from European demonstrators	Consultants, Technology providers
Financial	High investment, limited access to financing and lack of investment sharing	Blended finance, leasing and brand-supported co-investment to de-risk investment & commitments	End-user, Brands, Investors
	Uncertain business case due to electricity prices, grid reliability, and peak demand charges	On-site solar, renewable PPAs, smart energy management strategies	End-user, Regulators, Utility companies
Market & organizational	Short-term sourcing contracts from brands, where suppliers cannot justify long-term decarbonization investments	Multi-year sourcing agreements and shared decarbonization roadmaps can align incentives and provide investment certainty.	End-users, Brands

Stakeholder Strategic Interests

Shared Challenges: Stakeholders across the textile value chain share a common interest in reducing energy costs, meeting decarbonization targets, improving supply-chain resilience, and maintaining long-term competitiveness under emerging carbon-related trade regulations. A major shared challenge is the “split incentive” problem:

- suppliers carry most operational investment risk,
- while brands capture much of the ESG and reputational benefit.

Despite these shared challenges, they face coordination failures regarding cost allocation and investment responsibility.

Required Innovations: While HTHPs are available, process equipment integrated HPs must be developed. In parallel, stronger sector specific electrification incentives, supplier-focused financing programs, brand-supported co-investments and scalable demonstration projects are needed to reduce investment risk and accelerate adoption.

Collaboration Areas: Cooperation is most effective in areas where costs, risks, and infrastructure can be shared across stakeholders. The following partnerships are critical to enabling heat pump adoption across the sector.

Partnership	Strategic Importance
Brands ↔ Suppliers	Determines investment confidence and decarbonization incentives
Suppliers ↔ Financiers	Determines ability to fund industrial heat pump projects and de-risk guarantees for first movers
Suppliers ↔ Utilities	Determines grid readiness and operational feasibility
OEMs ↔ Consultants ↔ Suppliers	Determines successful process integration and performance
Policy makers ↔ Collaboration enablers	Determines infrastructure modernization and policy support

