

Backward integration as a sustainability strategy in speciality chemicals

India's speciality chemicals industry is expanding at pace, driven by global supply chain shifts and domestic demand. Yet, as scale increases, so does exposure to raw material volatility, making supply chain control a critical factor for sustainable growth. Companies are now being pushed to rethink how value is created across the supply chain due to increased regulatory scrutiny, evolving customer expectations, and rising input volatility. Given the circumstances, backward integration is emerging as a powerful lever to combine and align operational efficiency and sustainability goals.

The global chemicals sector accounts for approximately 6% of total industrial energy use. With the pressure building to adopt decarbonisation processes, speciality chemical companies are now focused on going green, having resource efficiency, and responsible sourcing. However, to achieve meaningful, sustainable outcomes, it is important to have deeper control over upstream operations, and this is where backward integration becomes pivotal.

The limits of a sourcing-led model

A large part of the industry contin-

ues to rely on external sourcing for key feedstocks, a model that worked well in a relatively stable global environment but is now beginning to show clear signs of strain as market conditions become more volatile and less predictable.

Supply disruptions, frequent price fluctuations, and the concentration of raw material sources in specific geographies have made procurement increasingly uncertain, while overdependence on imports, particularly from a limited set of dominant markets, has added another layer of vulnerability to operations.

According to McKinsey, a consultancy, companies with stronger control over their supply chains have demonstrated better resilience and faster recovery during disruptions; and in speciality chemicals, where input consistency has a direct bearing on product quality and performance, this lack of control becomes even more pronounced.

Why backward integration is becoming central

Backward integration is increa-

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singly being seen as a structural solution, as moving upstream into feedstock processing allows companies to gain greater control over availability, pricing, and quality, all of which are becoming critical in a more volatile operating environment. It enhances business continuity by ensuring uninterrupted access to critical inputs even during market disruptions or global supply chain instability. This becomes particularly relevant in segments such as aroma chemicals and terpene chemistry, where even small variations in feedstock quality can have a direct impact on end-product performance, making consistency and control far more important than before.

A clear example of this shift is the growing adoption of Crude Sulphate Turpentine (CST)-based integration, where CST, a by-product of the paper and pulp industry, offers stronger supply visibility along with a substantial cost advantage over traditional Gum Turpentine Oil (GTO). However, CST's processing requires specialised capabilities that limit participation to a relatively small set of players.

This combination of cost efficiency, supply stability, and technical entry barriers is making CST-led integration a more dependable and scalable model for long-term operations.

Green Chemistry through integration

Backward integration allows companies to adopt Green Chemistry principles in an effective manner. By adopting critical upstream processes



in-house, companies will be able to invest in cleaner technologies, optimise resource utilisation, and minimise hazardous by-products. Integrating upstream feedstock production allows for better control over process efficiencies, leading to lower energy consumption and reduced environmental impact.

Additionally, with time, stakeholders of the business, including regulators, investors, and customers, now demand better transparency. The stakeholders wish to know how products are being sourced and manufactured. Backward integration facilitates end-to-end visibility, allowing companies to track raw materials from origin to final product. This process not only ensures compliance with environmental and social standards but also strengthens brand credibility.

Policy push and regulatory alignment

In India, regulatory frameworks such as the Environment Protection Act and initiatives like the National Green Hydrogen Mission are pushing industries toward cleaner production methods. Additionally, the Bureau of Energy Efficiency (BEE) has been promoting energy efficiency across sectors, including the chemical sector. Backward integration signals credibility; investors, customers and regulators look at not just promises but structural commitment. In the future, companies that

proactively integrate sustainability into their operations are better positioned to benefit from such policy support while avoiding future compliance risks.

Enabling circularity in chemical manufacturing

Circularity is another dimension where backward integration plays an integral role. By controlling upstream processes, companies can design systems that enable the reuse, recycling, and recovery of materials. This process reduces dependency on virgin resources and supports the transition to a circular economy. Processes like solvent recovery and reuse can significantly lower waste generation and raw material consumption.

The way forward

India's speciality chemicals sector has a strong opportunity to deepen its

position as a global manufacturing hub, but this will depend on expanding capacity and building more resilient and controlled supply chains that can support consistent, large-scale operations. Backward integration is becoming central to this shift, as companies look to reduce dependence on volatile sourcing markets and gain greater control over cost, quality, and availability of key inputs.

As regulatory expectations tighten and global customers demand higher standards of traceability and sustainability, operating models with stronger upstream control will become essential. This will enable Indian manufacturers to offer more reliable supply, maintain pricing stability, and meet global benchmarks, strengthening export competitiveness and positioning India as a more dependable partner in global chemical supply chains.

ABOUT THE AUTHOR

Mahesh Babani is the pioneer in the Indian aroma chemical industry. With over three decades of experience, he has led the transformation of Privi Speciality Chemicals Ltd. from a young enterprise into one of the world's leading manufacturers of fragrance ingredients.

Under his leadership, Privi has built strong manufacturing capabilities, deep customer partnerships, and a robust export-oriented business model serving global fragrance and flavour majors.



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