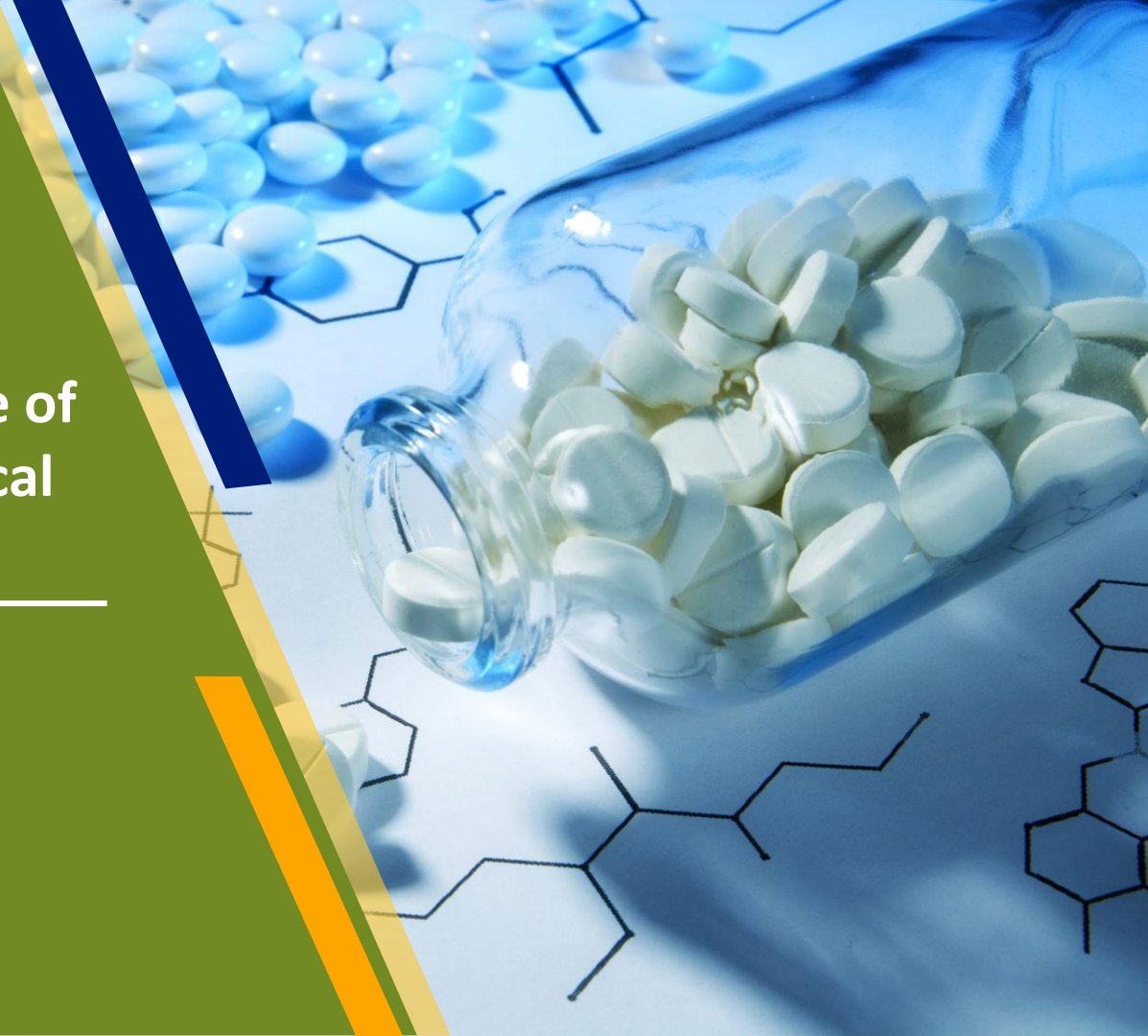
ICRA ESG RATINGS
A Group ICRA Company

Sustainability Landscape of the Indian Pharmaceutical Sector

A Sustainability Perspective



ICRA ESG Research

May 2026

List of Abbreviations

API	Active Pharmaceutical Ingredient
BRSR	Business Responsibility and Sustainability Report
CMO	Contract Manufacturing Organisation
CRDMO	Contract Research, Development and Manufacturing Organisation
EMA	European Medicines Agency
ETP	Effluent Treatment Plant
EU CSRD	European Union Corporate Sustainability Reporting Directive
GBP	Great Britain Pound
HVAC	Heating , Ventilation and Air Conditioning
IBEF	India Brand Equity Foundation

IPM	Indian Pharmaceutical Market
IPPS	Independent Power Producers (plural of IPP – Independent Power Producer)
KPIs	Key Performance Indicators
MEE	Multi-Effect Evaporator
MJ	Megajoules
NHS UK	National Health Service (United Kingdom)
OCEM	Other Critical Environmental Metrics
PIC/S	Pharmaceutical Inspection Co-operation Scheme
PLI	Production Linked Incentive
PPA	Power Purchase Agreement

PPE	Personal Protective Equipment
PSCI	Pharmaceutical Supply Chain Initiative
(PW/ WFI)	Purified Water / Water for Injection
RE	Renewable Energy
RO	Reverse Osmosis
SBTi	Science Based Targets initiative
TDS	Total Dissolved Solids
UNICEF	United Nations International Children's Emergency Fund
USFDA	United States Food and Drug Administration
WHO	World Heath Organization
ZLD	Zero Liquid Discharge

Key Takeaways

Energy & Climate

Renewable energy (RE) is the central decarbonisation lever; procurement mode matters

ICRA ESG's sample-wide RE share rose from 17% (FY2023) to 25% (FY2025). The dominant mode at the large-cap end was 25-year group captive open-access PPAs with IPPs under a 26% equity-stake structure; on-site rooftop plays a complementary, smaller role. Formulations saw the steepest emission intensity decline (-31%) due to their electricity dominant profile, where each RE percentage point displaces more Scope 2 emissions.

Water & Waste

Hazardous waste profile is shaped by product mix as much as process maturity

APIs remain the most toxic-waste intensive segment (~67% hazardous share). Formulations sit at ~38%, with the level driven heavily by portfolio composition; oral solids generate predominantly non-hazardous waste, while cytotoxics, hormones, beta-lactams, and highly active APIs raise hazardous loads due to GMP-mandated dedicated facility requirements (USFDA, EMA, WHO, PIC/S).

Value Chain

Sustainable sourcing depth varies inversely with input-base complexity

Tracking adoption is broadly comparable across segments (64-71%) but verified sustainable sourcing share ranges from ~63% (APIs: fragmented chemical supplier base) to ~84% (formulations: standardised excipients and packaging). Closing this gap is the binding constraint as EU CSRD, NHS UK, and California SB 253 raise upstream traceability requirements.

Governance & Disclosure

Scope 3 disclosure remains uneven and largely export-market-driven

Almost 57% of API manufacturers and Integrated players disclose Scope 3 emissions, against only about 9% of formulation manufacturers. Coverage correlates with exposure to regulated export markets:

NHS UK: carbon reduction plans for tenders >GBP 5 million, supplier exclusion from 2030.

EU CSRD: Scope 3 mandate for in-scope companies.

California SB 253: Scope 1-3 disclosure for over $1 billion companies from August 2026.

Customer-cascaded SBTi commitments, mandatory carbon reduction plans for export contracts, and BRSR core maturation will pull Indian pharma into deeper disclosure and target setting faster than internal governance can institutionalise. Delivery infrastructure – not target-setting – will become the differentiator over the medium term.

Agenda

1 Industry Overview and Resource Intensity Analysis

2 Key Sustainability KPIs

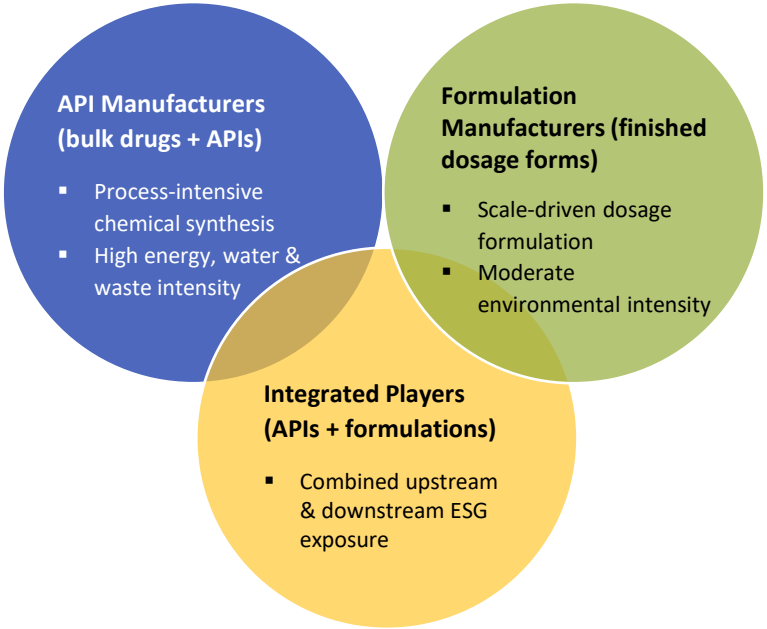
3 ESG Governance

4 Peer Comparison & ICRA ESG Sample

Industry Overview and Resource Intensity Analysis

Pharmaceutical Sector: Overview and ESG Relevance

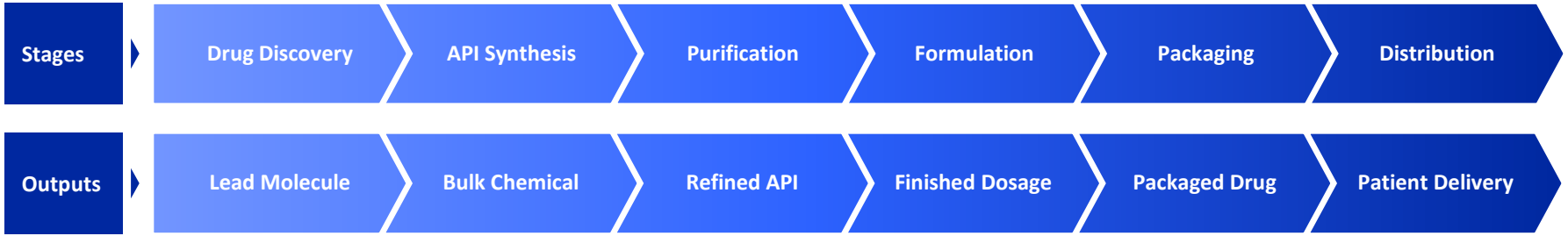
Exhibit 1: Key segments in the pharmaceutical industry



This structural differentiation forms the basis for the subsequent segment-wise ESG analysis.

- India is a globally significant pharmaceutical manufacturing hub, with operations spanning APIs, formulations and integrated business models.
- The sector plays a critical role in global generics and vaccine supply chains, supported by strong export orientation and large-scale manufacturing.
- Pharmaceutical manufacturing is fairly resource intensive, involving sustained energy consumption, freshwater withdrawal and hazardous waste generation.
- ESG risk and performance, therefore, vary structurally across operating models, necessitating a segment-wise assessment approach.

Pharmaceutical Manufacturing Value Chain and Business Model Characteristics



- The pharmaceutical manufacturing value chain progresses from drug discovery to API synthesis and purification, followed by formulation, packaging, and distribution, with manufacturing-related environmental and resource impacts concentrated in API and formulation stages.
- During API synthesis and purification, lead molecules are converted into refined active pharmaceutical ingredients through multi-step chemical reactions and separation processes, typically involving higher energy use, solvent consumption, freshwater withdrawal, and hazardous waste generation.
- In the formulation stage, refined APIs are transformed into finished dosage forms (such as tablets, capsules, and injectables) through processes such as blending, granulation, compression, and coating, which are comparatively less process intensive but scale-driven.
- Integrated manufacturers operate across both API and formulation stages, resulting in a combined upstream and downstream ESG profile.
- Manufacturing intensity is influenced by product characteristics such as patent status and pricing frameworks, including regulatory price control, which shape the degree of process standardisation and economic flexibility available for resource efficiency improvements.
- Packaging activities are typically conducted within controlled manufacturing environments, with outsourcing largely restricted to secondary or lower-value packaging activities, where applicable.

Resource Intensity across Pharma Segments: Linked to Process Characteristics

	API Manufacturers *(chemical synthesis & bulk drug production)*	Formulation Manufacturers *(tablets, capsules, injectables)*	Integrated Players *(API formulation & packaging)*
	**Process:** Multi-step chemical synthesis → reaction → distillation → drying → solvent recovery → effluent treatment (ZLD/ETP)	**Process:** Granulation → blending → compression/filling → coating → sterile fill-finish (for injectables) in controlled environments	**Process:** End-to-end operations combining API synthesis, formulation, and finishing under integrated utility systems
	**Energy: Very high**, driven by thermal energy requirements for reactions, distillation, drying, and solvent recovery.	**Energy: Moderate to high**, primarily electricity-driven (HVAC systems, cleanrooms, compression, coating, sterile operations).	**Energy: High**, combining thermal loads from API processes and electricity demand from formulation operations.
	**Emission: High**, due to fossil–fuel-based process heat and solvent-related emissions; most emission intensive segment within pharma.	**Emission: Low to moderate**, reflecting lower dependence on thermal energy and increasing electrification.	**Emission: Moderate to high**, reflecting blended profile of API-driven emissions and formulation efficiency gains.
	**Water consumption: Very high**, due to solvent washing, frequent equipment cleaning, and high-TDS effluent treatment.	**Water consumption: Moderate**, but can increase in sterile/aseptic operations due to cleaning validation, purified water (PW/WFI), and controlled environments.	**Water consumption: High**, but improving due to scale efficiencies, water recycling, and strong ZLD adoption.
	**Waste generation**: **High** hazardous waste (chemical residues, solvent sludge); significant reliance on recovery and recycling systems.	**Waste generation**: Low hazardous waste; mainly packaging waste, rejected batches, and minor chemical residues.	**Waste generation: High** total waste volumes, but better recycling and recovery rates due to integrated operations.
	Chemically intensive processes drive high energy, emissions, water use, and hazardous waste generation	HVAC-driven → Energy for sterile controls; low water & hazardous waste	Full value chain operations increase absolute resource use, but integration enables better efficiency, recycling, and ESG management

Key Sustainability KPIs

Segment-wise ESG Snapshot for FY2025

Exhibit 2: ESG Metrics Comparison across Pharma Segments

ESG Dimension	Metric (FY2025)	API Manufacturers	Formulation Manufacturers	Integrated Players
Energy	Energy Intensity (MJ/Rs. crore)	615,376.53	152,260.78	174,983 .37
Energy	Renewable Energy Share (%)	31%	17%	30%
Emissions	Emission Intensity (tCO_2e/Rs. crore)	64.72	18.65	20.89
Water	Water Intensity (m^3/Rs. crore)	258.33	102.36	90.23
Waste	Waste Recycling / Reuse (%)	60%	17%	66%
Waste	Hazardous Waste Share (%)	67%	38%	47%
Governance	Companies with ESG Committee (%)	21%	27%	46%
Governance	Companies with Emission Targets (%)	29%	27%	89%
Value Chain	Inputs Sourced Sustainably – Avg (%)	63%	84%	73%

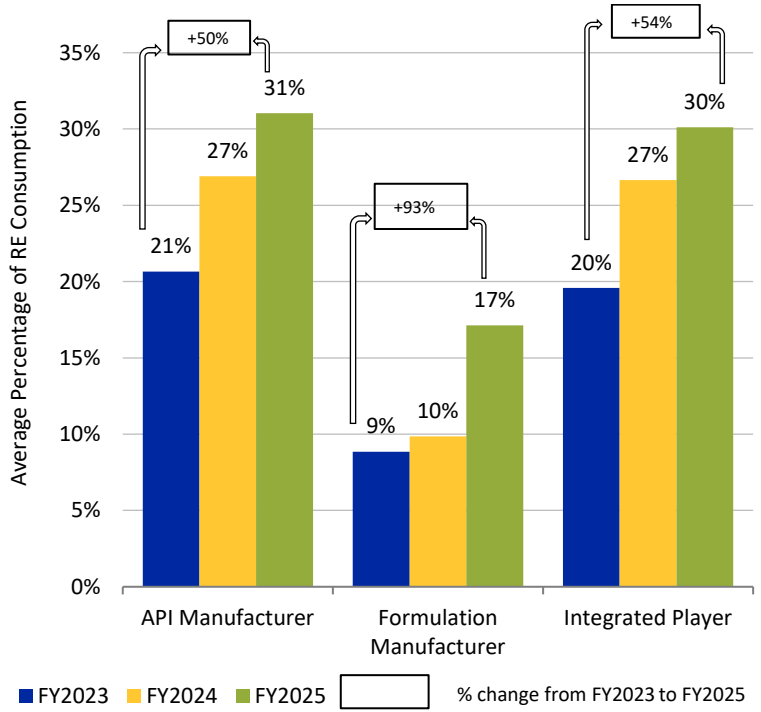
The analysis is based on the ICRA ESG sample, comprising the top 1,000 listed companies by market capitalization. (refer Annexure for details).

- **API manufacturers** exhibit **structurally higher environmental intensity**, driven by chemical synthesis, high hazardous waste share, and thermal energy use.
- **Formulation players** demonstrate the **lowest energy and emission footprint**, but lag on renewable energy adoption and waste recycling.
- **Integrated players** show a **balanced ESG profile**, combining moderate environmental intensity with **strongest governance and target-setting maturity.**

Note: FY2025 values represent segment averages. Colours indicate relative ESG intensity and maturity across operating models; Green: ≥60%; Yellow: 30–59%; Red: <30%

Renewable Energy Penetration Rises across the Pharma Sector

Exhibit 3: Average RE consumption across pharma segments – FY2023 to FY2025

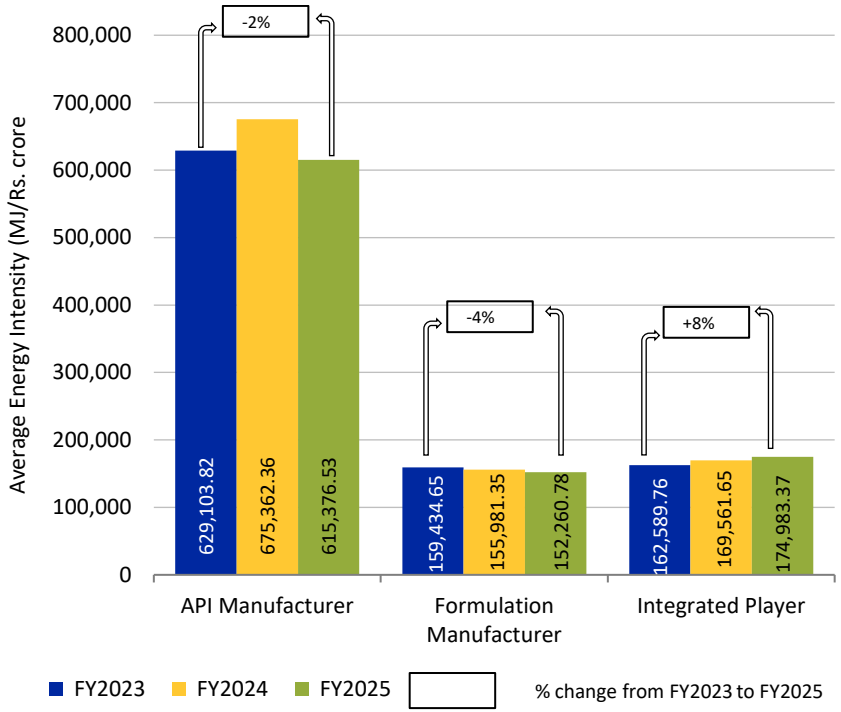


- ICRA ESG's sample of 53 pharmaceutical companies indicates a steady increase in renewable energy (RE) adoption, with average RE consumption rising from 17% in FY2023 to 25% in FY2025, reflecting a gradual shift towards cleaner energy sources. However, adoption varies across segments due to differences in process intensity, dependence on thermal energy, and operational scale, influencing sourcing strategies and pace of transition.
- **API manufacturers** have demonstrated the strongest improvement, with RE usage increasing from 21% to 31%, driven by efforts to offset energy-intensive processes such as multi-step synthesis, distillation, drying, ZLD, and solvent recovery. Larger facilities are increasingly adopting open-access and group-captive RE procurement, enabling scale-driven displacement of grid power, while smaller facilities continue to rely on thermal energy, resulting in a more gradual transition.
- **Formulation manufacturers** recorded moderate improvement, with RE adoption increasing from 9% to 17%, supported by electricity-dominant processes such as HVAC-controlled environments, granulation, and sterile fill-finish. Adoption is largely driven by rooftop installations and limited open-access sourcing, although stringent reliability requirements in controlled environments may moderate further uptake despite improving cost competitiveness.
- **Integrated players** witnessed a rise from 20% to 30%, supported by centralised utility systems and scale advantages, enabling long-tenor procurement through group-captive and open-access mechanisms, supplemented by onsite installations. These players exhibit stronger planning maturity, with RE adoption aligned to long-term decarbonisation pathways embedded within operational frameworks.
- From a demand perspective, regulated export markets (~50% of India's pharma exports) are emerging as a key external driver. While the USFDA does not mandate sustainability disclosures, Europe and the UK are increasingly linking procurement to sustainability performance, through regulations such as EU CSRD, CBAM, and UK NHS Net Zero requirements, including Scope 1–3 disclosures. In contrast, emerging markets remain largely price- and quality-driven, making European and UK regulations the primary catalysts for RE adoption, particularly among large, export-oriented API and integrated players.

Source: Company Filings (NSE/BSE), ICRA ESG Research, IMARC Group, Pharmexcil Handbook 2025, CSRD, CBAM, CSDDD, NHS England-Greener NHS Supplier

Energy Intensity Rises on Pricing and Mix Effects, Not Efficiency Slippage

Exhibit 4: Average energy intensity (MJ/Rs. crore) – FY2023 - FY2025



- At the aggregate level, average energy intensity for the ICRA ESG pharmaceutical sample increased from 5.36 lakh MJ/Rs. crore in FY2023 to 6.27 lakh MJ/Rs. crore in FY2024 (+17%) and further to 7.01 lakh MJ/Rs. crore in FY2025 – an absolute rise of 1.67 lakh MJ/Rs. crore (~31%).
- While the trend appears adverse, revenue (~21%) and energy consumption (~23%) grew broadly in tandem, indicating aligned scaling rather than a deterioration in operating efficiency. The increase is primarily driven by a denominator effect, with pricing pressure across US generics mid-single-digit erosion of NLEM-linked domestic portfolios (~0.0051% in FY2025), and low volume-led IPM growth in single digits, alongside a higher share of energy-intensive segments (injectables, complex generics, speciality products).
- **API manufacturers:** API manufacturers continued to operate at the highest energy intensity, reflecting their operating nature. With no major variations in the three-year period, energy intensity remains elevated due to multi-step chemical synthesis, distillation, solvent recovery, drying processes, and continuous ZLD and effluent treatment.
- **Formulation manufacturers:** Formulation manufacturers recorded limited moderation in energy intensity over the period, declining by ~2% in FY2024 and a further ~2–2.5% in FY2025, resulting in a cumulative reduction of ~4% over FY2023–FY2025. While this points to incremental process optimisation and operating stability, the overall change remains modest in magnitude. Energy intensity continues to be structurally high, driven by HVAC-intensive operations, clean-room and sterile manufacturing requirements, and increasing exposure to injectables and controlled-environment manufacturing. Accordingly, no step-change efficiency improvement was observed over the three-year period.
- **Integrated players:** In contrast to other segments**,** energy intensity among integrated players increased by ~4% in FY2024 and rose further in FY2025, resulting in an overall increase of ~8% over FY2023. This trend is the most clearly mix- and scale-driven of the three: integrated players have the highest exposure to US generics (where price erosion was steepest) and to NLEM-controlled domestic portfolios, both of which suppress reported Rs. crore revenue. Concurrently, capacity additions in injectables, biologics-adjacent formats, and speciality APIs raise the energy floor of the operating mix. The trajectory, therefore, reflects revenue-side compression and portfolio evolution, not operating slippage in legacy facilities.

Source: Company Filings (NSE/BSE), ICRA ESG Research, — Business Today, ICRA Annual update

API Remains Emission-intensive; Formulation Shows Decoupling, Scope 3 Disclosure Lags

Exhibit 5: Average GHG (Scope 1+2) emission intensity – FY2023-FY2025

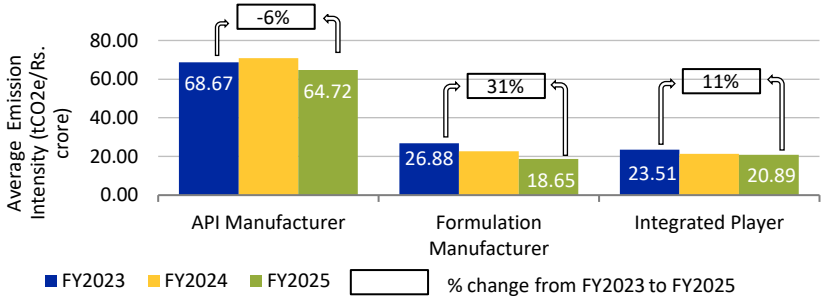
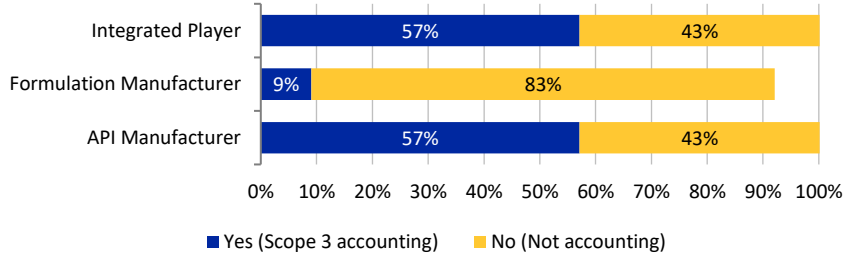


Exhibit 6: Percentage of companies disclosing Scope 3 in FY2025

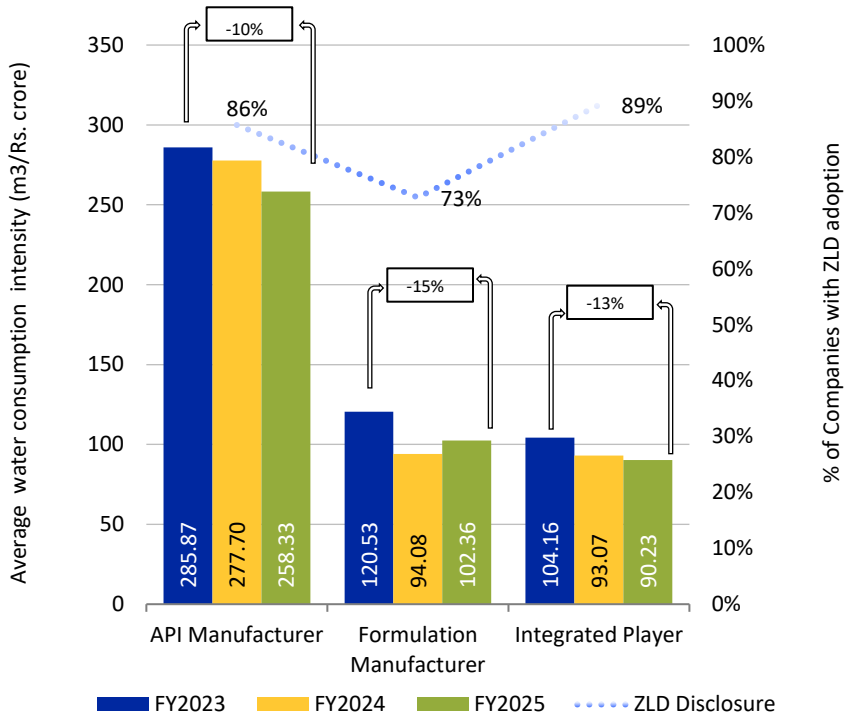


- Across the ICRA ESG sample, emission intensity declined across all segments over FY2023–FY2025, indicating partial decoupling of emissions from growth. This improvement is primarily driven by rising RE share (~17% to ~25%), which reduces Scope 2 emissions without changing energy consumption. Muted pricing (US erosion, NLEM caps) also compresses revenues, supporting lower intensity metrics. Overall, the decline reflects RE adoption and denominator effects, rather than a significant reduction in absolute emissions.
- **API manufacturers**: The API segment remains the high-emission zone, with emission intensity at ~64.7 tCO_2e/Rs. crore in FY2025.API manufacturing is nearly 3–4 times more carbon-intensive than formulation operations, reflecting its heavy reliance on thermal energy for chemical synthesis, distillation, drying, and solvent-recovery processes. While emission intensity declined by ~6% in FY2025 from the levels in FY2023, structural dependence on fossil–fuel-based process heat continues to pose challenges for deeper decarbonisation.
- **Formulation manufacturers:** Formulation players reported the sharpest and most consistent decline in emission intensity, reducing from ~26.8 tCO_2e/Rs. crore in FY2023 to ~22.7 tCO_2e/Rs. crore in FY2024, and further to ~18.6 tCO_2e/Rs. crore in FY2025, translating into a ~30% reduction over two years. The improvement is supported by lower process-heat requirements, incremental operational efficiency gains, and increasing reliance on electricity-driven manufacturing. This trend highlights the segment's relatively higher potential for rapid decarbonisation, particularly through continued RE penetration and energy-efficient HVAC optimisation.
- **Integrated players:** Emission intensity among integrated players improved in the initial phase, declining from ~23.5 tCO_2e/Rs. crore in FY2023 to ~21.3 tCO_2e/Rs. crore in FY2024, before stabilising in FY2025 (~20.8 tCO_2e/Rs. crore). This suggests that early efficiency gains and scale benefits have largely been realised. Achieving further meaningful reductions will likely require deeper decarbonisation of embedded API operations within integrated portfolios, including fuel switching and low-carbon thermal solutions.
- **Scope 3 disclosure maturity:** Scope 3 emission accounting remains uneven across segments; of the total sample size, only 47% reports score 3 emissions. About 57% of API manufacturers and integrated players report Scope 3 emissions, reflecting moderate disclosure maturity driven by regulatory and investor expectations. In contrast, only ~9% of formulation manufacturers currently account for Scope 3 emissions, indicating significant gaps in value chain visibility. Overall, while emission-intensity improvement trends are visible in select segments, Scope 3 transparency remains a key area of ESG improvement for the sector.

Source: Company Filings (NSE/BSE), ICRA ESG Research

Consistent Improvement in Water Efficiency, Underpinned by High ZLD Adoption

Exhibit 7: Average freshwater consumption intensity (m3/Rs. crore) and ZLD adoption – FY2023-FY2025



Source: Company Filings (NSE/BSE), ICRA ESG Research

- Average freshwater withdrawal intensity across the ICRA ESG sample declined from ~336.8 m³/Rs. crore in FY2023 to ~293.1 in FY2025, reflecting a consistent downward trend in water-use efficiency across all three segments.
- **API Manufacturers** continue to operate at the highest withdrawal intensity levels within the ICRA ESG sample, owing to inherently water-intensive processes — solvent washing, equipment cleaning, and high-TDS effluent treatment. Despite a modest ~5% revenue growth over the period, the segment achieved a ~10% intensity reduction, underscoring genuine operational efficiency gains. Sustaining this trajectory will require greater treated-water reuse, optimised cleaning validation cycles, and strengthened water management practices.
- **Formulation Manufacturers** within the ICRA ESG sample recorded the most volatile trend — a sharp ~22.7% intensity decline in FY2024, partially offset by an ~8.8% rebound in FY2025, attributed to a product-mix shift toward more water-intensive sterile and aseptic formats. Cumulatively, the segment still delivered the second-largest improvement. Targeted interventions — recovering utility blowdown, reducing WFI/purified water generation losses, and improving CIP/SIP cycle efficiency — remain critical to sustaining progress.
- **Integrated Players** across the ICRA ESG sample demonstrated the most consistent improvement, with intensity declining ~13% over FY2023–FY2025, against a strong ~24% revenue growth. This confirms that efficiency gains are structural, supported by integrated utility infrastructure and stronger governance and disclosure practices.
- ZLD Adoption across the ICRA ESG sample has reached advanced maturity at ~83%, with integrated players leading at ~89%. Residual non-adoption remains largely geography- and scale-driven. With tightening discharge norms and OCEMS mandates expected by FY2026, adoption is projected to increase further, driving convergence across the remaining ~17% of the ICRA ESG sample.

Waste Management Maturity: Balancing High-intensity Synthesis with Circular Recovery

Exhibit 8: Average waste intensity (tonnes/Rs. crore) – FY2023-FY2025

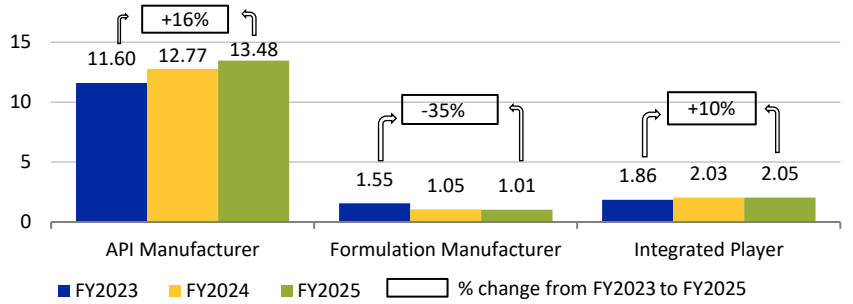
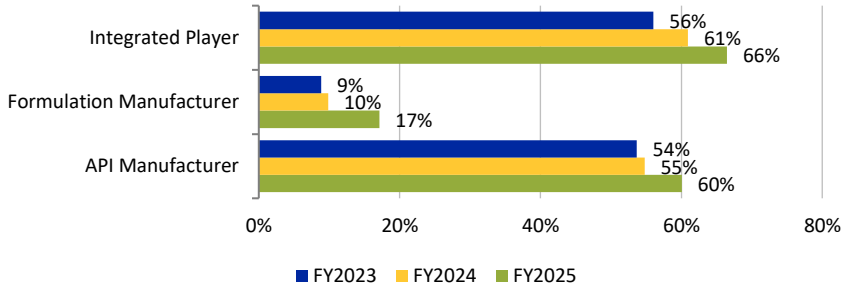


Exhibit 9: Average %age of recycled/reused waste – FY2023-FY2025



- **API manufacturers (high intensity, high recycling):** These players have the highest waste intensity, increasing from 11.60 to 13.48 tonnes/Rs. crore (FY2024–FY2025), as API production involves complex chemical synthesis where a large share of inputs—primarily solvents (~70–90%)—are used in processing but do not become part of the final product. To offset this, recycling improved from 54% to 60%, driven by solvent recovery, distillation reuse, and Green Chemistry practices. However, further improvement is constrained by cGMP-mandated pharma-grade purity requirements, requiring recovered solvents to be re-purified and re-validated before reuse. This increases costs and limits scalability, although it ensures recovered streams meet the same quality and patient-safety standards as virgin inputs.
- **Formulation manufacturers (low intensity, low recycling**): The segment records the lowest waste intensity, declining from 1.55 to 1.01 tonnes/Rs. crore (~35% reduction, FY2023–FY2025), reflecting predominantly physical processes (blending, granulation, compression, coating, fill-finish) without complex reactions. The reduction is supported by continuous manufacturing adoption and improved batch-level material efficiency. Recycling improved from ~9% to ~17%, but remains lowest due to the heterogeneous nature of waste (mixed packaging, coated tablets, contaminated materials), making segregation and recovery difficult. cGMP requirements further limit recycling, as recovered materials require full validation and regulatory approval, often making recovery commercially unviable for such streams.
- **Integrated players (stable intensity, highest recycling):** Integrated players exhibit moderate and stable waste intensity (~2.05 tonnes/Rs. crore, FY2025), as high-volume formulation output dilutes the impact of internal API synthesis. They lead in recycling, improving from 56% to 66%, reflecting mature systems, process intensification, and circular reuse across the value chain. This is supported by scale and on-site recovery infrastructure. The key challenge lies in maintaining GMP-compliant segregation, traceability, and validation when reusing recovered materials across API and formulation operations.

Source: Company Filings (NSE/BSE), ICRA ESG Research

Hazardous Waste Dominates API Profile while Integrated Scale and Formulation Stability Diverge

Exhibit 10: Total hazardous waste (tonnes) – FY2023-FY2025

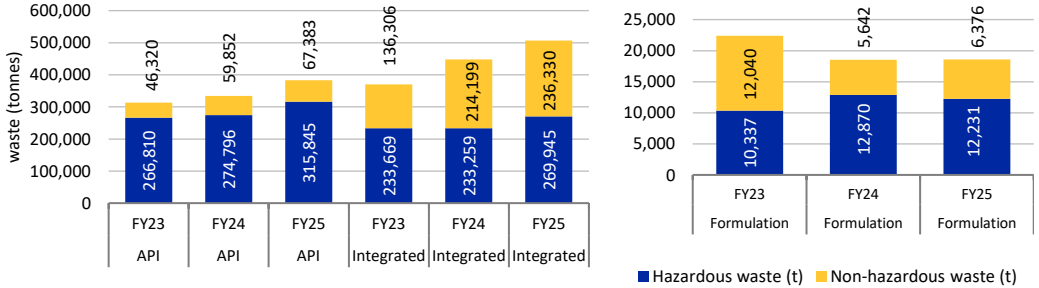
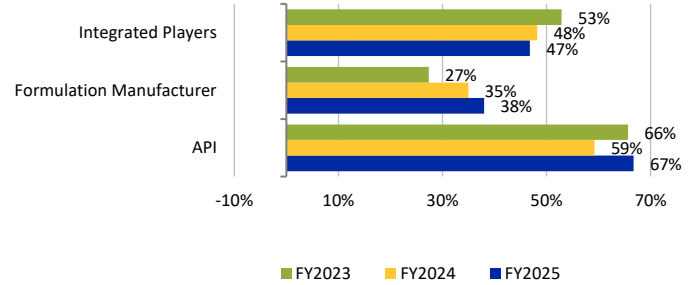


Exhibit 11: Average %age of hazardous waste out of total waste generated – FY2023-FY2025

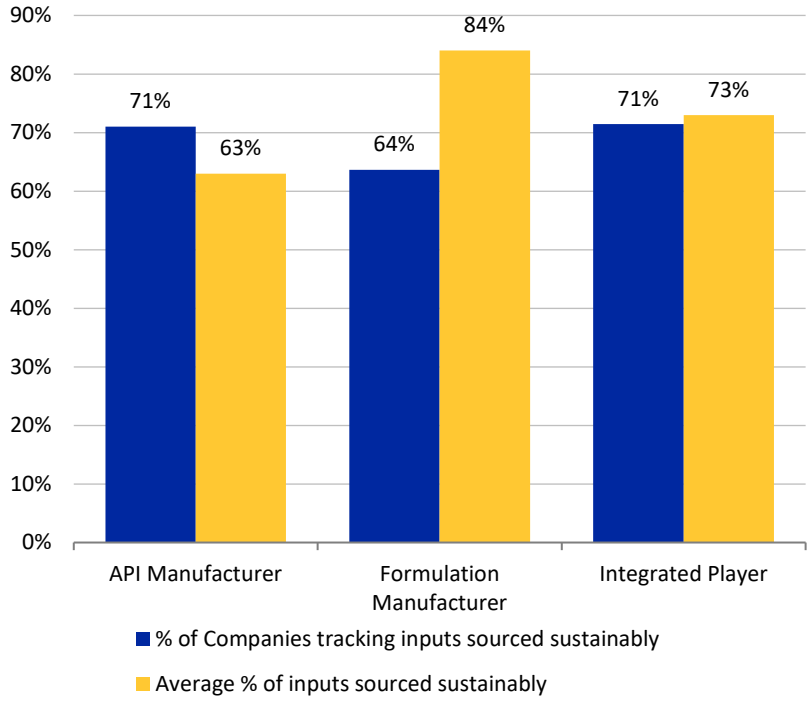


- **API manufacturers: High intensity, low decoupling:** The API segment exhibits the most challenging hazardous-waste profile, with absolute hazardous waste increasing by ~18% over FY2023–FY2025 to 315,845 tonnes. The hazardous share remains ~67%, indicating limited decoupling, with waste growth tracking production scaling. This reflects structural dependence on multi-step chemical synthesis, solvent-intensive reactions, and CPCB-classified hazardous effluents, with limited evidence of Green Chemistry or recovery efficiencies altering the mix. Continued reliance on chemically intensive processes sustains elevated transition risk.
- **Formulation manufacturers: Operational optimization:** The segment witnessed a spike in hazardous waste in FY2024 (12,870 tonnes), followed by a moderation to 12,231 tonnes (~5% decline) in FY2025. Hazardous waste constitutes ~38% of total waste, significantly lower than APIs, with volumes broadly stable. The waste profile is largely product-driven, as oral solid formulations generate predominantly non-hazardous waste, while cytotoxic, hormonal, and beta-lactam production necessitates strict segregation and classification of residues as hazardous under global GMP norms (USFDA, EMA, WHO, PIC/S). Consequently, players focused on standard generics structurally have lower hazardous intensity. The FY2024 spike likely reflects capacity additions in regulated lines or one-time disposal events.
- **Integrated players: Scale-driven volume surge:** Integrated players recorded the highest growth in total waste, rising ~37% over FY2023–FY2025 to 506,275 tonnes. The hazardous share declined from 53% to 47%, indicating incremental waste is largely non-hazardous, consistent with expansion in downstream formulation operations. While the waste mix has improved in relative terms, the sharp increase in absolute volumes implies higher disposal, treatment, and infrastructure requirements.
- **Comparative ESG outlook:** A clear divergence is visible across segments. The API segment's high hazardous concentration (~67%) presents a material regulatory and cost risk, while integrated players face scale-driven volume management challenges. In contrast, the formulation segment demonstrates the most favourable trajectory, supported by structurally lower hazardous intensity and better decoupling of waste from operational growth.

Source: Company Filings (NSE/BSE), ICRA ESG Research

Sustainable Sourcing in Pharma: Moderate Tracking, Uneven Depth across Segments

Exhibit 12: Average %age of companies tracking sustainability sourced inputs – FY2023-FY2025



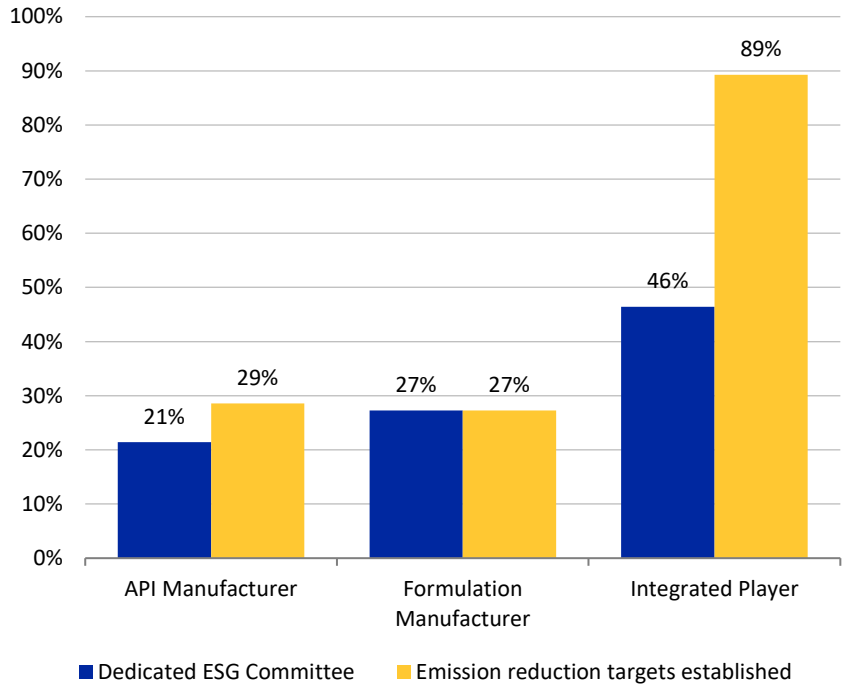
Source: Company Filings (NSE/BSE), ICRA ESG Research

- Sustainable sourcing in the pharmaceutical sector integrates ESG considerations into procurement across key inputs such as APIs, intermediates, excipients, and packaging. Frameworks typically cover supplier environmental compliance, use of certified/recycled inputs, traceability, and adherence to GMP, EHS, and human rights standards. This remains critical as ~70–90% of sectoral emissions lie within Scope 3, making procurement a key decarbonisation lever.
- Sustainable sourcing practices are progressing (~64–71% adoption), though depth varies by supply-chain complexity. Formulation players demonstrate relatively stronger execution due to simpler supply chains, while API players face structural constraints in upstream sourcing, leading to gaps between intent and implementation.
- **API manufacturers:** About 71% of API companies track sustainable sourcing — comparable to other segments — but the average share of inputs reported as sustainably sourced is meaningfully lower at ~63%. This gap between tracking intent and implementation depth is the segment's defining feature, reflecting the structural complexity of API supply chains, which rely on multi-tier sourcing of intermediates, key starting materials, and specialty chemicals from a fragmented upstream base. Higher EHS risk concentration, along with geographic dependence on limited supplier clusters, constrains the ability to verify and transition toward sustainable inputs at scale, even when monitoring infrastructure exists.
- **Formulation manufacturers:** Among formulation companies that monitor sustainable sourcing — a narrower cohort at ~64% — an average of ~84% of inputs are reported as sustainably sourced, the highest implementation share in the sample. The depth, however, is structurally enabled rather than governance-led: the segment's procurement base is more standardised and less chemically intensive, comprising excipients, packaging materials (paper-based cartons, aluminium foil, glass, recyclable plastics), and finished APIs sourced from established and pre-qualified vendors. Lower raw-material complexity and reliance on a concentrated set of recognised suppliers make verification operationally simpler, but the lower tracking adoption suggests sustainability monitoring is not yet a uniform sector-wide practice.
- **Integrated players:** Integrated companies exhibit the most balanced profile, with ~71% tracking adoption and an average of ~73% of inputs reported as sustainably sourced — neither the highest implementation share nor a structurally simpler input base, but the most consistent combination of process maturity and depth. Their blended procurement structure combines chemistry-intensive API inputs (where traceability is structurally lower) with formulation-linked inputs (where traceability is higher). Greater procurement scale, longer-tenor supplier relationships, and stronger commercial leverage support broader integration of sustainability criteria into supplier contracts relative to standalone API players.

ESG Governance

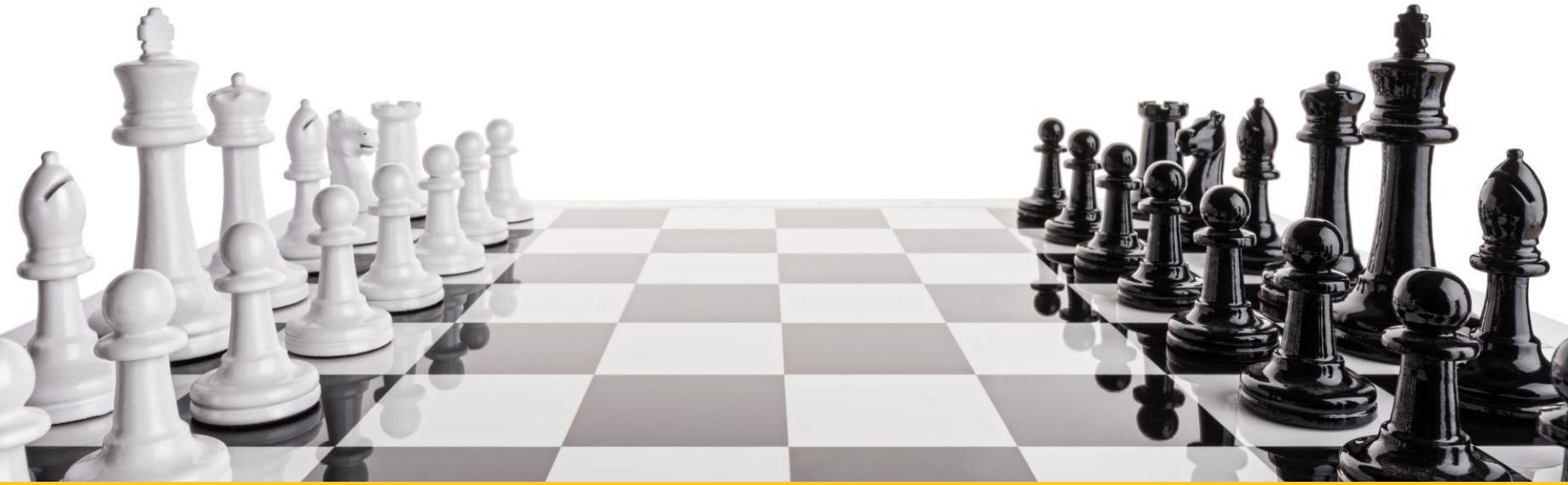
ESG Committees and Climate Targets: High Alignment among Integrated Players

Exhibit 13: ESG committees and emission reduction targets – FY2025



- Only ~35% of pharma companies in the sample have constituted dedicated Board-level ESG/sustainability committees, while ~59% have set emission-reduction targets, indicating faster adoption of climate commitments relative to governance institutionalisation. The remaining ~65% embed ESG oversight within broader Board committees—primarily Risk Management, CSR, or Stakeholder Committees—or manage ESG at the management level without a formal Board forum. A smaller subset, largely among mid- and small-sized API and formulation players, has yet to formalise ESG oversight in any structured form.
- This divergence is externally driven, reflecting cascading requirements from global pharmaceutical customers rather than internally anchored ESG strategies. Large global pharma companies—through initiatives such as SMI and SBTi-aligned commitments—are increasingly mandating suppliers to set science-based targets, adopt renewable energy, and enhance emissions disclosure. Consequently, target-setting has become a commercial imperative, particularly given the high Scope 3 exposure (~97% for some global pharma players). Parallel platforms such as Energize, PSCI, and EcoVadis further reinforce this pressure, resulting in faster uptake of emission targets relative to governance frameworks.
- API manufacturers continue to lag materially, characterised by promoter-driven structures, limited Board-level oversight, and a compliance-oriented ESG approach.
- Formulation manufacturers also show low formalisation, with limited presence of dedicated ESG committees and modest adoption of emission-reduction targets (~27%), indicating that climate considerations remain emerging rather than mainstreamed, particularly among mid-sized, manufacturing-focused players.
- In contrast, integrated players demonstrate relatively stronger maturity, with ~46% having Board-level ESG committees and ~89% adopting emission-reduction targets, supported by scale, diversification, and higher regulatory/investor scrutiny. However, while climate ambition is well established, governance structures remain unevenly institutionalised, indicating scope for further strengthening of Board-level oversight.
- Target credibility remains uneven across the ICRA ESG sample. Companies with parent-driven or customer-mandated targets generally exhibit stronger execution capability, compared to those setting targets primarily in response to disclosure pressure. Regulatory developments—such as NHS UK's requirement for suppliers to publish Carbon Reduction Plans by April 2027, with exclusion risks from January 2030—are expected to elevate the gap between target-setting and governance maturity into a material risk, particularly for the API segment, which currently lags on both fronts.

Source: Company Filings (NSE/BSE), ICRA ESG Research, Greener NHS » Suppliers, API manufacturing: The cost of decarbonization | McKinsey,



Peer Comparison & ICRA ESG Sample

ESG Metrics Comparison of Select Companies from the Sample Set – FY2025

Sr. No.	Company Name	Energy Intensity	RE Consumption	Emission Intensity	Water Consumption Intensity	Waste Generation Intensity	Waste Recycled/ Reused	ZLD Disclosure	Scope 3 Emissions Disclosure	Dedicated ESG Committee	Emission Reduction Targets Established
		(MJ/ Rs. crore)	(% of total energy)	(tCO2e/ Rs. Crore)	(m3/Rs. Crore)	(tonnes/ Rs. Crore)	(%)	Yes/No	Yes/No	Yes/No	Yes/No
1.	Divis Laboratories Ltd	539,478.90	0.47	75.86	378.69	17.99	91.35	Yes	Yes	Yes	Yes
2.	Laurus Lab Ltd	663,771.70	3.31	95.33	191.51	10.30	66.42	No	Yes	No	No
3.	Sun Pharmaceutical Industries Ltd	126,407.08	49.77	17.06	73.38	1.70	75.33	Yes	No	No	Yes
4.	Cipla Ltd	75,7232.59	24.72	33.42	55.04	1.19	88.89	Yes	Yes	No	Yes
5.	Torrent Pharmaceuticals Ltd	90,778 .94	41.51	9.04	101.84	0.51	68.36	Yes	Yes	Yes	Yes
6.	Dr Reddys Laboratories Ltd	145,626 .24	57.17	10.39	60.45	3.45	99.31	Yes	Yes	Yes	Yes
7.	Gland Pharma Ltd	83,6421.59	4.85	23.02	127.48	0.48	88.35	Yes	Yes	Yes	Yes
8.	Cohance Lifesciences Ltd	339,546.06	6.44	52.31	178.28	4.70	42.60	Yes	No	Yes	Yes
9.	Morepen Labaratories Ltd	279,111 .22	60.15	16.17	60.44	2.83	58.73	Yes	No	No	No
10.	Granules India Ltd	290,818 .48	25.17	10.98	71.56	2.01	100.00	No	No	No	No

Source: Company Filings (NSE/BSE), ICRA ESG Research

Annexure: ICRA ESG Sample Set

Company	Market Cap (Rs.crore)	Company	Market Cap (Rs.crore)	Company	Market Cap. (Rs.crore)
Sun Pharmaceutical Industries Limited	401,384	Glenmark Pharmaceuticals Limited	49,506	Blue Jet Healthcare Limited	14,633
Divi's Laboratories Limited	182,019	Laurus Labs Limited	40,274	Sanofi India Limited	14,264
Cipla Limited	122,431	IPCA Laboratories Limited	34,806	Alivus Life Sciences Limited	12,245
Torrent Pharmaceuticals Limited	115,637	Ajanta Pharma Limited	31,262	Granules India Limited	11,869
Dr. Reddy's Laboratories Limited	106,559	Gland Pharma Limited	30,941	Marksans Pharma Limited	11,714
Zydus Lifesciences Limited (formerly Cadila Healthcare Limited)	100,875	Wockhardt Limited	27,255	Procter & Gamble Health Limited	9,666
Mankind Pharma Limited	94,391	Piramal Pharma Limited	27,214	Shilpa Medicare Limited	8,559
Lupin Limited	89,557	Pfizer Limited (India entity)	26,069	FDC Limited	7,999
Abbott India Limited	73,661	JB Chemicals & Pharmaceuticals Limited	25,681	Strides Pharma Science Limited	7,978

*Aggregate sample market capitlization : Rs. 20.19 Lakh Crore (July 2025); *Includes companies for which ESG data is consistently available for a continuous period of three (FY2023-FY2025 years, enabling trend-based assessment and comparability.*

Annexure: ICRA ESG Sample Set

Company	Market Cap (Rs.crore)	Company	Market Cap (Rs.crore)	Company	Market Cap (Rs.crore)
Aurobindo Pharma Limited	65,776	**Cohance Lifesciences Limited**	24,446	**Supriya Lifescience Limited**	5,831
GlaxoSmithKline Pharmaceuticals Limited	56,807	**Eris Lifesciences Limited**	22,835	**Innova Captab Limited**	4,832
Sequent Scientific Limited	4,694	**Orchid Pharma Limited**	3,751	**Solara Active Pharma Sciences Limited**	2,886
Aarti Drugs Limited	4,287	**Advanced Enzyme Technologies Limited**	3,645	**IOL Chemicals and Pharmaceuticals Limited**	2,840
Hikal Limited	4,267	**Gufic Biosciences Limited**	3,549	**Alembic Pharmaceuticals Limited**	19,894
RPG Life Sciences Limited	4,194	**Morepen Laboratories Limited**	3,400	**Jubilant Pharmova Limited**	19,106
Unichem Laboratories Limited	4,184	**Zota Health Care Limited**	3,246	**Natco Pharma Limited**	16,711
Gujarat Themis Biosyn Limited	3,793	**Indoco Remedies Limited**	2,888	**Neuland Laboratories Limited**	15,239
				Caplin Point Laboratories Limited	15,189

*Note: Aggregate sample market capitlisation: Rs. 20.19 lakh crore (July 2025); *Includes companies for which ESG data is consistently available for a continuous period of three (FY2023-FY2025) years, enabling trend-based assessment and comparison.*

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