

Pressing the Throttle

How India's Mining and Construction Equipment Industry can support domestic ambitions and become a global force

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The next phase of growth will depend on deeper collaboration between industry, government, financial institutions, technology providers, academia, and end users. Creating an enabling environment for investment, accelerating innovation, supporting skill development, and improving ease of doing business will be critical to building a sector that is resilient, future-ready, and globally benchmarked.

Chandrajit Banerjee

Director General,
Confederation of Indian Industry (CII)



India's growth trajectory over the coming decade will be shaped by its ability to expand infrastructure capacity, strengthen industrial competitiveness, secure critical mineral resources, and build resilient supply chains. The Mining and Construction Equipment (MCE) sector occupies a strategic position in this growth agenda, with its performance increasingly influencing the pace of infrastructure creation, industrial expansion, and economic development.

The sector today stands at an important stage of evolution. Rising public and private investments, increasing project complexity, greater expectations around productivity, and changing operating conditions are creating demand for more advanced equipment, higher efficiency, and stronger service capabilities. At the same time, digital technologies, automation, data-led operations, predictive maintenance, and sustainability considerations are reshaping how equipment is designed, manufactured, deployed, and managed across its lifecycle.

Within a decade, MCE has gone from a small, import-led market to a genuine global growth platform, with India now emerging as a net exporter of MCE equipment. This demonstrates the growing prowess of the Indian manufacturing sector.

The next phase of growth will depend on deeper collaboration between industry, government, financial institutions, technology providers, academia, and end users. Creating an enabling environment for investment, accelerating innovation, supporting skill development, and improving ease of doing business will be critical to building a sector that is resilient, future-ready, and globally benchmarked.

This report, prepared in association with BCG, brings together perspectives from industry leaders and stakeholders across the MCE ecosystem. It examines emerging market shifts, growth opportunities, structural challenges, and strategic priorities that will influence the sector in the years ahead. It also presents a forward-looking agenda to support India's ambition of creating a globally competitive and future-ready MCE ecosystem.

I hope this publication contributes to informed dialogue and encourages collective action from all stakeholders. As India enters a new phase of economic expansion, the MCE sector can move beyond supporting growth to actively shaping it. The choices made today in technology, manufacturing, sustainability, skills, and collaboration will determine the sector's contribution to India's next chapter of development.



Not long ago, the best machines on Indian sites came from elsewhere. Today, our equipment works in close to 100+ countries. That tells you what this industry can do.

Vivek Bhatia

Chairman,
CII Mining and Construction
Equipment Division and Managing
Director & CEO TKIL Industries



I have spent my working life around this industry, and the change has been something to see. Not long ago, the most capable machines on an Indian site came from other parts of the world. Today, our factories are increasingly building equipment that holds its own on quality, and Indian machines work in close to 100 countries. That did not happen by accident, and it tells you what this sector is capable of, when industry and the country pull in the same direction.

CII's Mining and Construction Equipment Division commissioned this report to look further out than the next quarter or year. The questions that matter are long-horizon ones. How quickly can we build real capability in underground mining and the larger, technology-led machines where India is still dependent on imports? How well can we train the skilled operators and service technicians, that safe, productive sites depend on? How do we build the after-sales and financing

ecosystems that decide whether a customer buys Indian machines a second time, and makes the MCE equipment more accessible to larger customer base? And, How do we enable relentless focus on cost and quality, so that our machines are more and more competitive globally? These are the things that will determine where the industry sits a decade from now.

Government has been an important partner in the progress so far, and a continued enabling environment - on the duty structure, on focused support for equipment manufacturing, and on the export ecosystem, would help the sector realize its full potential. I am grateful to every leader who shared their perspective, and to our partners at BCG. The long-term opportunity is real, and well within our reach if we keep building it together.



For years, India's story in the MCE industry was about catching up. Today it is a sunrise sector, helping to power India's infrastructure and growth story as the country builds towards the vision of Viksit Bharat. As the industry reinvents itself through cleaner fuels, autonomous vehicles and connected fleet ecosystems, the question is no longer whether India can keep pace, but how far it can lead.

Abhishek Bhatia

Managing Director and Partner,
Boston Consulting Group



Once in a while an industry rewrites the rules of who comes out ahead, and mining and construction equipment is at that point now. India has spent years catching up. What lies ahead is the chance to lead.

The pull at home is strong and lasting, simply because so much of India is still to be built, and every phase of that build runs on this equipment. But, the industry is being reinvented as we speak, in terms of how machines are powered, how they run, how they talk to each other, and how they are paid for. Engines are giving way to cleaner and electric powertrains. Machines that once depended entirely on an operator are starting to run with far more autonomy. Sensors and connectivity are turning a fleet into a stream of data that tells an owner what will fail before it does, and ownership itself is

shifting from buying the equipment to paying for uptime and output. Taken together, these changes are turning hardware into something much closer to a connected, intelligent system. The firms that treat this as the core of the product, not a feature added later, will be the ones that set the pace.

For Indian players this is a real opportunity. We have worked alongside industrial leaders through transitions of this kind across the world, and the pattern holds: the ones who do well start early. It has been a privilege to work with CII's MCED on this report. I hope it informs, and I also hope it prompts a few conversations, ours included, about how India makes the most of a moment like this.

Executive Summary

India's Mining and Construction Equipment (MCE) industry is entering a decisive decade. The sector sits at the centre of the country's infrastructure expansion. Roads, railways, ports, airports, mines, factories, logistics networks, and power systems being developed all depend on the machines that move earth, lift loads, drill, crush, and pave at scale. The global MCE industry is worth about USD 420-440 billion, with Asia-Pacific accounting for ~55% of it. Within that landscape India has become one of the fastest growing major markets, with domestic demand exceeding USD 17 billion in 2025.

India's rise has been built on four structural drivers. First, sustained infrastructure investment has widened the need for earthmoving, concrete, lifting, tunnelling, roadbuilding, and material-handling equipment. Second, mining growth and mineral-security priorities are pulling in more advanced equipment across coal, metals, and critical minerals. Third, deeper localisation by domestic and global OEMs is strengthening the country's manufacturing base. Fourth, exports have become a real part of the story, having nearly tripled over the past decade to ~USD 4.9 billion in 2025 and India becoming a net exporter of mining and construction equipment.

The domestic runway remains long. India's Viksit Bharat trajectory implies a build-out across infrastructure, manufacturing, critical minerals, and the energy transition that runs for decades. Capital expenditure in MCE-linked sectors is expected to rise from about INR 5.5 lakh crore in 2025 to INR 9-10 lakh crore by 2030, with the MCE sector poised to reach USD 180-200 billion by 2047 on the Viksit Bharat pathway. Mechanisation intensity also remains below global benchmarks at roughly half the global level, which will enable the sector to grow beyond infrastructure and mining spend.

The export headroom is significant. Globally, countries import ~USD 150 billion worth of mining and construction equipment, but less than 4% of that demand is currently supplied by India. The near-term opportunity is clearest in Southeast Asia, Africa, the Gulf and South America. These countries have rising infrastructure and mining demand, remain highly import dependent for equipment, with China supplying nearly half of their MCE imports. The China+1 shift creates space for Indian OEMs to offer a credible, value-for-money alternative and help buyers diversify their supply base. Developed markets such as

North America, the EU, Australia and the UK are a longer-term opportunity, as they will require higher-specification products, stronger compliance and more reliable overseas after-market service networks. By 2047, India could aspire to capture at least 20% of the global export market - an opportunity of USD 75+ billion.

The equipment itself is changing at the same time. The report examines six shifts remaking the industry worldwide, from cleaner powertrains and connected digital fleets to autonomy, deeper underground mining, mechanisation of mining operations, and new ways of owning and financing machines. Keeping pace through this transition is now essential for Indian OEMs to compete at a global level.

The way forward calls for a coordinated effort between government and industry. This report sets out a ten-point framework covering the policy and regulatory actions for government's consideration, the commitments industry must make to amplify these initiatives, and the priority areas where both need to act together.

Government can promote Make in India through a tiered duty structure, firm action against dumping practices, and stronger public procurement preference for domestically built machines, including domestic capability in critical-mineral processing equipment. It could also consider strengthening site safety through a purpose-built fleet scrappage and renewal mechanism, tighter enforcement against counterfeit aftermarket parts, and a single empowered nodal agency for the sector. Industry must build on this with its own commitments. OEMs should deepen Tier-2 supplier ecosystems and clusters, make bolder export moves through overseas subsidiaries, distribution, and after-sales networks in priority geographies, and design products for the needs of export markets. They must also bring the best available technologies to Indian mining and construction sites, helping move the sector up the automation and mechanisation curve. Alongside these actions, government and industry can jointly work on the sector's shared priorities. This includes scaling R&D and innovation centres, supported by academia partnerships and closer work with end-users. The sector can also benefit from MCE-specific operator and technician certification through upgraded ITIs run on a government-owned and industry-managed model. Finally, while industry should invest in connected, automated, and higher efficiency equipment, it could be matched by demand through mandated adoption in public tenders and large PSU contracts.



MCE industry at a glance

The global Mining and Construction Equipment industry serves the large mining and construction sector, valued at over USD 18 trillion in 2025, around 15% of global GDP¹. The equipment industry that enables this activity is worth roughly USD 420-440 billion^{2,4}, expected to grow at 4-5% CAGR^{2,4} over the next five years.

Center of gravity continues to be Asia Pacific

The developed markets of North America and Europe are expected to grow at a relatively modest 2-3% CAGR over the next five years, while the Asia-Pacific region is expanding at 6-7%² CAGR, on the back of sustained infrastructure creation, rapid urbanization, wider mining activity, and the localisation

of manufacturing. Asia Pacific remains the largest demand centre for MCE, at an estimated size of USD 230-240 billion in 2025 - roughly 55% of global demand⁴. The story of the global industry over the coming decade will be largely the story of Asia.

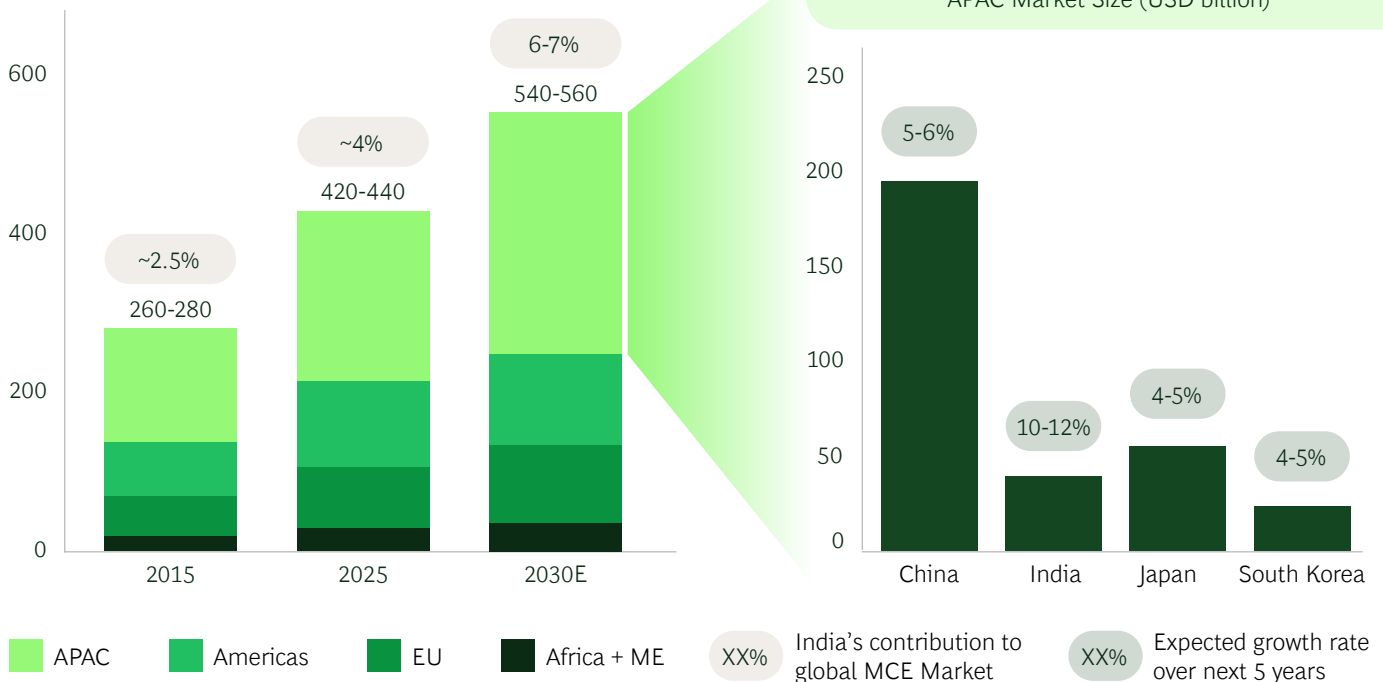
Within Asia, India is one of the fastest-growing major markets. At approximately USD 17 billion, domestic demand is expanding at 10-12% a year³ - among the most dynamic growth rates anywhere in the region. China remains substantially larger, at an estimated USD 140-150 billion⁴, but it is a more mature market and is growing more slowly. India's mix of scale and pace is what makes it increasingly central to global OEMs' investment, localisation, and export strategies: a market that matters not only for what it is today, but for what it is rapidly becoming.

1. Future of Construction, World Economic Forum; World Development Indicators (GDP by Country), World Bank, 2026; The Mining Industry: Driving Global Economies and Shaping Sustainable Futures, Research Nester
2. Path to Viksit Bharat: Making India a Global Manufacturing Hub in MCE, Kearney, 2025
3. India Mining Equipment Volume Growth, ICRA, 2025; Indian Construction Equipment Industry, IBEF, 2025; Path to Viksit Bharat: Making India a Global Manufacturing Hub in MCE, Kearney, 2025
4. Global Mining & Construction Equipment Market Study, The Freedonia Group, 2025

EXHIBIT 1

India's share continues to grow in global MCE industry

Market Size (USD billion)



Source: BCG Analysis

India today - from marginal player to fast-growing global force

Over the past decade, India's MCE sector has transitioned from a small, import dependent market to a meaningful global growth platform. The shift rests on the sheer scale of India's infrastructure and mining economy, steadily rising mechanisation, and a deepening base of localized manufacturing. India's share of global MCE industry size has doubled - from around 2.5% to 4% today - and is expected to rise further to about 6.5% over the next five years⁴, placing it among the world's fastest-growing major markets.

This growth sits on a large underlying economy. India's mining and construction output is estimated at around USD 430 billion in 2025, close to 11% of GDP⁵, and supports the livelihoods of more than 70 million people across the value chain. The equipment sector that serves it has reached meaningful scale: USD 17+ billion in 2025, comprising around USD 10-10.5 billion of construction equipment and USD 6.5-7 billion of mining equipment, having added USD 1+ billion of output over the past year.

4 structural drivers have enabled growth, and continue to shape it

India's growth until now has been enabled by 4 key pillars, and will continue to shape how the sector progresses over the coming years.

1. Sustained infrastructure investment

Public investment over the past decade has been across the full span of India's infrastructure, from roads and rails to airports and ports. The national-highway network expanded from 91,287 km in 2014 to about 1,46,300 km in 2025⁶; metro-rail grew roughly fourfold, from 248 km across five cities to over 1,000 km across 23 cities⁷; and operational airports more than doubled, from 74 to about 160, widened by the UDAN scheme⁸. India has also commissioned major new megaprojects: the Dedicated Freight Corridors now carrying 400+ freight trains a day⁹, its first High-Speed Rail corridor, and deep-draft ports such as Vadhavan and a new build at Great Nicobar. Each expands demand for earthmoving, concrete, lifting, tunnelling, and material-handling equipment.

5. First Advance Estimates of GDP 2025-26, Ministry of Statistics & Programme Implementation, Government of India, 2025

6. National Highway Network, Ministry of Road Transport and Highways, Government of India, 2025

7. India's Expanding Metro Network, India Brand Equity Foundation (IBEF)

8. UDAN (Ude Desh ka Aam Naagrik) Scheme, Ministry of Civil Aviation, Government of India, 2025

9. Railway Transport and Logistics Update, Ministry of Railways, Government of India, 2025

2. Mining growth under-pinned by rising downstream industries demand

A sharper focus on mineral security, backed by successive MMDR Act amendments¹⁰ that opened restricted minerals to private exploration and eased auctions, has lifted demand for advanced equipment across coal, metals, and an emerging critical-minerals agenda. Iron ore production rose from 155 MT to 300 MT, limestone increased from 320 MT to 450 MT whereas coal production alone rose from 609 MT to 1,000 MT over the decade and the frontier now extends to drilling, excavation, hauling, and underground systems India once imported.

This mineral growth is ultimately driven by rising downstream consumption, in industries such as steel, cement, and power. As India continues to build out its infrastructure and industrial base, demand from these downstream sectors will keep pulling mineral production upward, and with it the equipment that extracts and processes these minerals.

3. Localisation and capability center investments by global and domestic OEMs

Deeper local production and engineering have strengthened the manufacturing base, with localisation levels rising to around 50% today¹¹. Global OEMs have expanded their Indian footprints and moved technology-intensive production onshore, while a growing number have set up engineering, R&D and capability centers that now design components for worldwide platforms, not just the local market. Sandvik localized tunnelling-drill manufacture in India; Gainwell partnered with CAT to bring continuous and long-wall miner IP onshore, with export potential; and Metso runs a 100+ engineer center supporting global brands. The shift is from import dependence toward export competitiveness.

Higher localisation also improves cost economics, giving Indian players a sharper cost structure that helps them compete not just at home, but in export markets as well.

4. Making for the world

India's MCE exports have nearly tripled over the last decade, from USD 1.7 billion in 2015 to around USD 4.9 billion in 2025, while imports rose more modestly, from about USD 2.3 billion to USD 4 billion. The country crossed from net importer to net exporter of mining and construction equipment, an early but meaningful sign of real credibility as an export base. ACE, for instance, scaled cranes and material handling that travel to other price-sensitive markets.



10. MMDR Act Amendments (Rajya Sabha Reply), Ministry of Mines, Government of India, 2025

11. India Mining and Construction Equipment Industry, ICRA, 2024

PULSE CHECK¹²

The industry pulse: Optimistic on the destination, honest about the gaps

The sector's own read on where it stands, what it's betting on, and what could hold it back

		What industry leaders signal	
 01 The mood A guarded recovery	How FY26 actually landed for the sector	●	"A few projects got delayed, and the geopolitical situation pulled second-half growth below what we expected."
	Momentum heading into FY27	●	"Infra and mining have good budgets. If execution goes to plan, FY27 and beyond should see solid growth."
	Belief the sector will hit its FY30 ambition	●	"The sector is set for a broad-based upswing over the next 10–15 years; several of us expect to double the business in 5-7."
 02 The growth engines Where conviction concentrates	Exports as the next growth frontier	●	"Exports are a big opportunity; we are also looking beyond India for growth. A strong home market builds the muscle to win abroad."
	Deeper and critical-mineral mining as the core bet	●	"It's an important focus area for the government and our self-reliance. Copper could reach 12-13 MTPA and zinc 1.5x by 2030."
	Infrastructure as a sustained demand pool	●	"Infrastructure should stay our biggest and steadiest source of demand for the next two to three years."
 03 The readiness gaps Ambition vs delivery	Readiness to localise beyond assembly into high-tech components	●	"Localisation has to mean deeper manufacturing here, and we need to build a strong vendor ecosystem, just like auto industry has built."
	Indian customers' willingness to pay for next-gen technology	●	"Customers prefer a INR 2 crore machine over INR 25-30 crore high-productivity equipment; this still remains a bottleneck in product innovation."
	Ability to attract the talent that future growth demands	●	"We need to make the industry aspirational for the younger generation, using the India Skill Mission to get there."
Sentiments: ● Negative ● Slightly negative ● Neutral ● Positive ● Very positive			

12. Industry survey and Industry leadership 1:1 discussions



Strategic relevance of MCE industry in India's growth story

India's MCE industry does not grow in isolation; it grows with the economy it equips. As the country builds toward a far larger economy, the sector sits at the center of the story, pulled by national priorities and the scale of expansion still ahead.

India's Long Build-Out Runway: A multi-decade opportunity

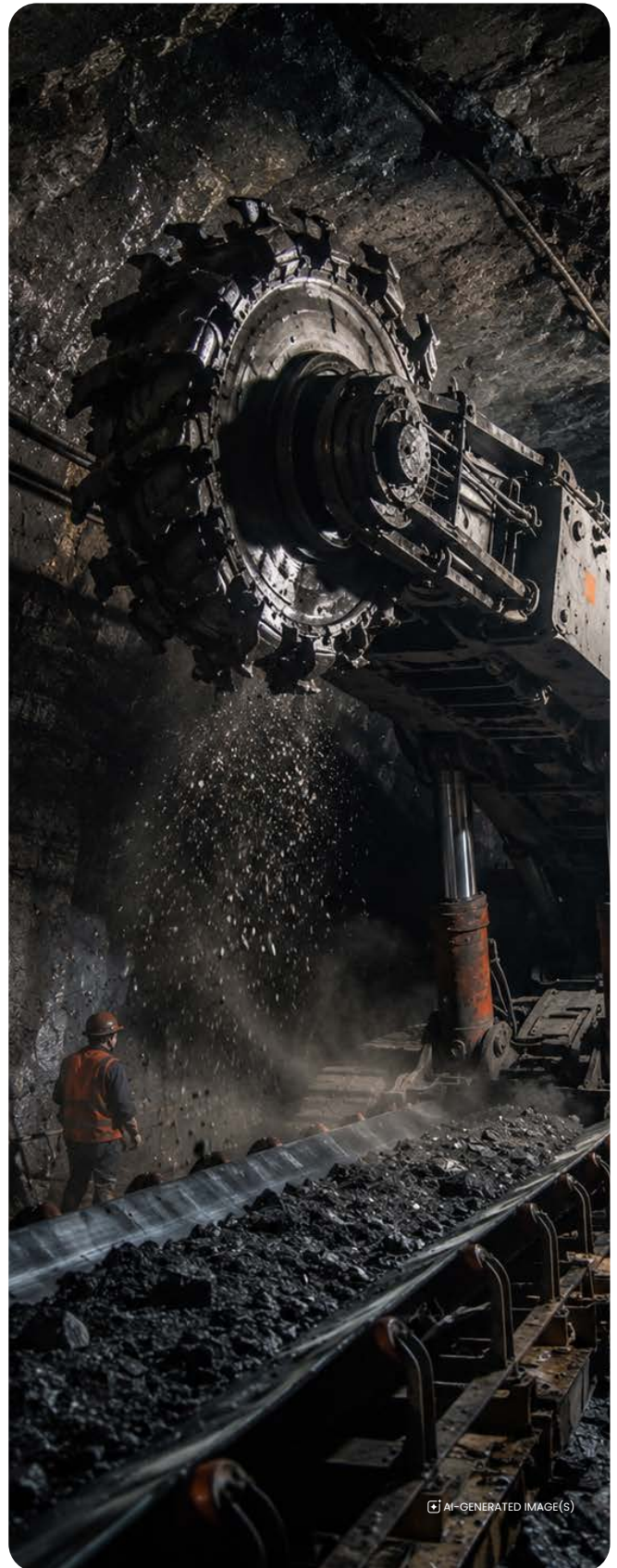
India's economy has doubled in a decade, reaching USD 4.2 trillion in 2026 with ambition to reach USD 30 trillion by 2047¹³, lifting it to among the three largest economies in the world. The last ten years have already seen an extraordinary amount of infra built-out - highways, metros, airports, ports, power, but even after all of that, lot of opportunities lie ahead, as India is still catching up on infra metrics with its global peers. The scale of what remains is easiest to see in the core infrastructure and industrial metrics, set against the world's most developed and largest economies. Each gap is a measure of how much more is still to be built - and of the equipment demand that comes with it.

INDIA'S BUILD-OUT HEADROOM	INDIA	USA	CHINA	JAPAN
Metro Rail (km per 1M people)	0.8	3	7	7.5
Rail Route (km per 1,000 sq. km area)	23	16	17	75
Airports (per 10M people)	1.1	146	1.8	14
Steel Usage p.a. (kg per capita)	108	261	600	480
Electricity Usage p.a. (MWh per capita)	1.4	13	7.5	8
Port Cargo Capacity p.a. (Tonnes per capita)	1.8	18	10	25

13. Vision for Viksit Bharat @ 2047: An Approach Paper, NITI Aayog, 2023

Over the next five years India will remain the fastest-growing major economy, at a 6.5-7% real CAGR. The arithmetic is striking: on its current trajectory, India will add an economic output over the next seven years comparable to what it built over the previous seventy - in effect, building another India. The sectors that consume mining and construction equipment are all set to expand well ahead of the headline economy.

Looking at Viksit Bharat @ 2047 agenda, India targets a USD 30 trillion economy and a per-capita income of about USD 15,000-18,000 (up from roughly USD 2,400 today) - a near nine-fold rise in GDP and eight-fold rise in per-capita income - while moving toward its Net Zero 2070 commitment¹⁴. Reaching it requires sustained 9.7% growth over two decades. An expansion of that scale cannot be delivered on paper. It implies an unprecedented physical build-out. On the Viksit Bharat trajectory, the MCE market could reach an estimated USD 180–200 billion by 2047 driven by domestic demand and global exports. At this scale, MCE industry would make up roughly 0.6-0.7% of GDP by 2047, up from about 0.4% today, adding to India's manufacturing agenda of 25% share in GDP.



14. Path to Net Zero, NITI Aayog

Four strategic priorities are driving India's MCE demand

On path to these growth ambitions set out in Viksit Bharat agenda, the country is investing behind four distinct national priorities, each backed by specific policy commitments and rising public capital, and each generating its own pool of equipment demand:

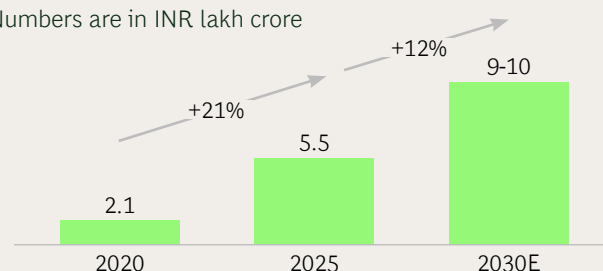
- 1. Infrastructure build-out:** roads, railways, metros, ports, airports, and urban and logistics systems.
- 2. Manufacturing scale-up:** PLI-led growth in semiconductors, defense, electronics, autos, renewables, and chemicals, with the factory and warehousing infrastructure to support it. To lift manufacturing's share to 25% under Viksit Bharat, the sector must grow faster than the wider economy and GDP growth.
- 3. Critical minerals and resource security:** Coal and underground coal, iron ore and copper, and the lithium, cobalt, graphite, and rare earths needed for batteries, EVs, and electronics.

- 4. Energy transition point:** Solar and wind parks, transmission and grid, storage, and green hydrogen, alongside continued baseload reliability.

The aggregate signal is in the budget: Capital expenditure on these MCE-linked sectors rose from roughly INR 2.1 lakh crore in 2020 to about INR 5.5 lakh crore in 2025¹⁵, and is expected to reach around INR 9-10 lakh crore by 2030. The more useful lens, though, is where that money goes - because each priority pulls a different mix of machines, increasingly tilted toward the higher-specification equipment India has historically imported.

INDIA INFRASTRUCTURE CAPEX BY SECTOR WHICH USE MCE

Numbers are in INR lakh crore



1. Infrastructure build-out

Investment is expanding across infrastructure segments. The Ministry of Road Transport and Highways allocation has risen to INR 2.9 lakh crore in 2025, with national highways targeted to grow from ~1.46 to ~2 lakh km over next five years via Bharatmala corridors, expressways, and a 35-node logistics-park programme. Railway capex has reached a record INR 2.5 lakh crore¹⁵, funding 431 sanctioned projects, 1,300+ Amrit Bharat station redevelopments, seven high-speed-rail corridors, and ~5,000 track-km a year. Ports are targeted toward ~3,500+ MTPA by 2030 and airports from ~160 toward ~280.

This is the deepest construction-equipment demand pool, and it is widening: roads pull earthmoving and paving fleets, railways pull TBMs, piling rigs, and viaduct cranes, and ports and airports pull specialized handling cranes.

DEMAND ENGINE	CAPEX (FY26)	2030 OUTLOOK
Roads and highways	INR 2.9 L Cr	NH 1.5 → 2.0 L km
Railways	INR 2.5 L Cr	Freight 1.6 → 3.0 BT
Ports	INR 2.9 K Cr	2.7 K → 3.5 K MTPA Capacity
Airports	INR 2.4 K Cr	160 → 280

2. Manufacturing scale-up

India is working to enhance manufacturing's share of GDP from 14% in 2026¹⁶ to 25% by deepening domestic capacity in semiconductors, defense, electronics, auto, and chemicals to cut import reliance and anchor jobs.

Govt. has outlined multiple policies and initiatives to drive this manufacturing agenda. For example, the 14-sector PLI programme (INR 1.97 lakh crore outlay) has drawn over INR 2.16 lakh crore in investment across 836 approved applications, with INR 28,748 crore disbursed¹⁷; electronics and pharma lead. The National Industrial Corridor Development Programme runs 11 corridors, with 12 new nodes cleared in 2024 and Phase-I cities already drawing INR 2.02 lakh crore. National Steel Policy targets 300 MT of crude steel capacity by 2030-31, up from ~220 MTPA in FY 2025-26, needing roughly USD 156 billion in investment.

Factory and warehouse build-out is equipment-intensive: site work, foundations, and large-span structures pull earthmoving, piling, concrete, and lifting equipment, while logistics adds material-handling gear, reach stackers, and cranes.

15. Union Budget 2025-26, Ministry of Finance, Government of India, 2025

16. First Advance Estimates of GDP 2025-26, Ministry of Statistics & Programme Implementation, Government of India, 2025

17. Govt Disburses INR 28,748 crore Under 14 PLI Schemes Till December 2025, Business Standard, 2025

3. Critical minerals and resource security

Securing domestic supply of energy and industrial minerals is now a strategic objective. Coal remains the largest volume anchor, while a near-zero base in battery and electronics minerals leaving India exposed in the very sectors it wants to build.

The agenda spans three fronts. Firstly, on coal, production rose from ~609 MT in 2015 to close to 1 billion tonnes a decade later, with the Ministry of Coal targeting ~1.5 billion tonnes, supported by 102 First Mile Connectivity projects. Secondly, on underground coal, the government targets a lift from a long-stagnant ~30 MT toward ~100 MT by 2030, with early traction such as SECL's ~INR 7,000 crore paste-fill mining pact. Thirdly, on critical minerals, the INR 34,300 crore National Critical Mineral Mission spans the full value chain, backed by rare-earth corridors and MMDR liberalization, with 30+ blocks auctioned and 100+ expected within five years.

Each front requires a different equipment stack. Surface coal and metals sustain large excavators, shovels, dump trucks, and crushers; underground coal needs continuous miners, roadheaders, longwall shearers, and LHDs which India largely imports; and critical minerals requires drill rigs, crushing-and-screening, and mineral-processing systems from a near-zero base.

CATEGORY	PRODUCTION 2015→2025	2030 OUTLOOK
Coal	609 MT → 1 BT	1.5 BT
Iron ore	155 MT → 300 MT	450 MT
Limestone	320 MT → 450 MT	600+ MT
Critical and rare-earth minerals	Lithium, Cobalt, Nickel, Graphite: Negligible currently	100+ block auctions expected
Other metals	Copper: 4 MT ore Zinc: 1.1 MT	Copper: 12.2 MT Zinc: 2 MT

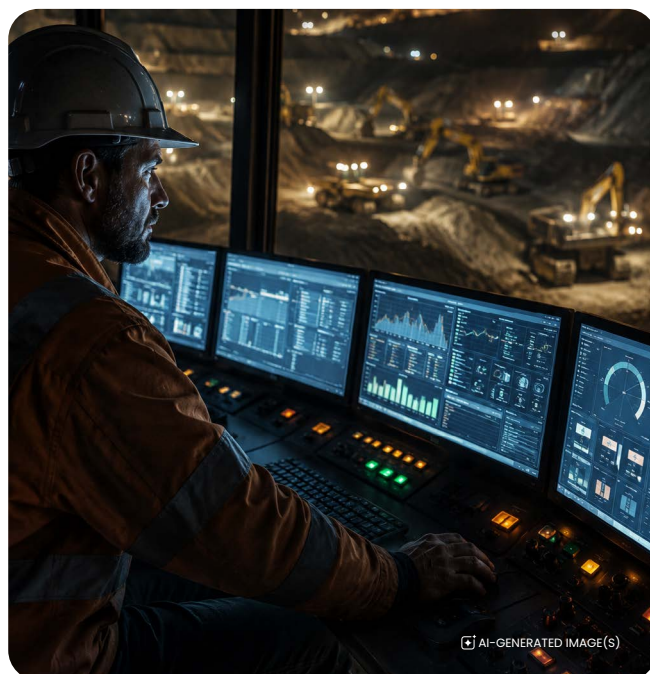
4. Energy transition point

India is pursuing ~500 GW of non-fossil capacity by 2030 and a Net Zero 2070 commitment, while still needing reliable baseload power for a fast-growing economy: a build-out of both clean capacity and grid reliability.

Investment is flowing into solar and wind parks, transmission and grid strengthening through the Green Energy Corridors, pumped-hydro and battery storage, and the National Green Hydrogen Mission. Reaching 500 GW of non-fossil capacity from roughly 280 GW today, is estimated to need USD 190-215 billion by 2030, with a further USD 150-170 billion for transmission and storage; on the grid alone, the National Electricity Plan points to about INR 9 lakh crore (~USD 97 billion) of transmission capex by 2032, against current annual spend of USD 8-9 billion.

The new INR 37,500 crore coal-gasification scheme adds a parallel cleaner-fuel pathway, converting coal into syngas as an industrial fuel and feedstock for methanol, ammonia, and hydrogen to cut imports and emissions on the route to Net Zero 2070.

This adds a distinct equipment layer: earthmoving and site work for solar parks and transmission, crawler and specialized cranes for wind-turbine and substation erection, piling rigs, and material handling, with the mix tilting toward higher-capacity cranes as turbines and wind parks scale.



Each of these four priorities will pull in a rising volume of machines and components, and the question is whether that demand is met by Indian production or filled through imports. India still imports around USD 4 billion of mining and construction equipment and components every year, and bringing down this bill is central to the sector's next phase. Localisation today sits at about 50%. Lifting it further will mean building depth in the supplier base, so that India's equipment demand anchors value and jobs at home rather than flowing to suppliers abroad. One example of this is auto industry which nurtured a thriving vendor ecosystem over the last few decades.

The case is sharpest in critical-mineral processing equipment, where China holds a dominant position across both the minerals and the machinery that refines them. This concentration is a strategic vulnerability, since access can be constrained depending on the geopolitical situation. Building a domestic base for this equipment is therefore not just an industrial opportunity but a matter of resource security, and it deserves priority even if the initial market is small.

In summary, India's long-term trajectory is firmly intact. Additionally, mechanisation levels are still well below global benchmarks - India generates only around USD 5 of machinery demand per USD 1,000 of construction spending, against roughly USD 8 across Asia-Pacific and about USD 12 worldwide, less than half the global intensity. That gap is, in effect, the runway: as mechanisation deepens and infrastructure and mining demand hold structurally strong, the headroom for growth is substantial.

18. Sandvik: Underground & Surface Mining equipment & technology, NBM&CW interview

19. BEML (BEMLNS): history, ownership, mission, DCFmodeling, 2026

20. BEML Secures INR 246.78 crore Order from CCL for Mining Trucks, The Machine Maker, 2024

21. BEML Unveils India's First 35-Ton Electric Dump Truck, Elets eGov, 2026

22. Indigenisation, BEML India



CASE STUDY

Localisation | Sandvik

Sandvik India shows how localisation builds market position. In line with Make in India, the company set up a dedicated facility in Pune to manufacture tunneling jumbo drills, launching the DT820 as what it describes as Sandvik's first Made-in-India tunneling jumbo¹⁸, rather than importing them, and has since moved to build continuous miners locally for the underground-coal segment. Its Indian mining-and-rock-technology arm has an installed base spanning 300+ underground machines across zinc, copper and uranium mines, 450+ surface machines, and 200+ tunneling jumbos working on rail, road and hydro projects. Local manufacturing has shortened delivery times, deepened its position in tunneling and specialized drilling, and the Pune base, home to Sandvik's first R&D center outside Sweden, is now being readied to serve export markets.



CASE STUDY

Localisation | BEML

BEML, the domestic public-sector OEM, illustrates the same trajectory from a home-grown base. Over 75% of its business now comes from in-house-developed products¹⁹, and its mining equipment carries more than 90% indigenization²⁰, directly reducing India's import reliance in heavy earthmoving. The company has systematically moved up the value chain: in 2025 it handed Coal India India's largest indigenously developed rope shovel, the 720-tonne BRS21 and in 2026 unveiled India's first indigenous 35-tonne electric dump truck at its Mysuru complex²¹, a machine built entirely in India that claims up to 70% energy savings over diesel equivalents. BEML sustains this through an R&D base spanning centers at Kolar Gold Fields, Mysore and Bangalore, with over 230 patents filed to date, and it now exports to more than 73 countries²² while eyeing further growth across Africa, Southeast Asia and the CIS countries.





Beyond India, MCE industry needs to think global

In 2024, global Mining and Construction Equipment imports were roughly USD 150 billion. India accounted for less than 4% of these global imports, against 28% for China and 26% for EU²³ (refer to Exhibit 2/3). The gap is the opportunity: India has already built a competitive domestic manufacturing base, and the task now is to turn its cost position, engineering capability, and rising product quality into real export share. With service exports also under pressure in the current macroeconomic environment, strengthening manufacturing and goods exports remains a strategic priority for the government and the MCE industry can play a meaningful part in that.

The shift has already started. India's MCE exports have nearly tripled over the last decade reaching ~USD 4.9 billion in 2025. India shipped more than ~11,900 excavators to ~110 countries in 2025, worth over USD 700 million (almost doubling since 2022). Ghana was the single largest market at close to 16% of that value. Mining dump trucks followed, shipped mainly to Africa, the Middle East, and Southeast Asia²⁴. CEV Stage V has helped: it brought Indian machines closer to developed-market specification and lowered a barrier that long kept them out of more regulated markets. Even so, India holds only 3-5% of the top four import markets.

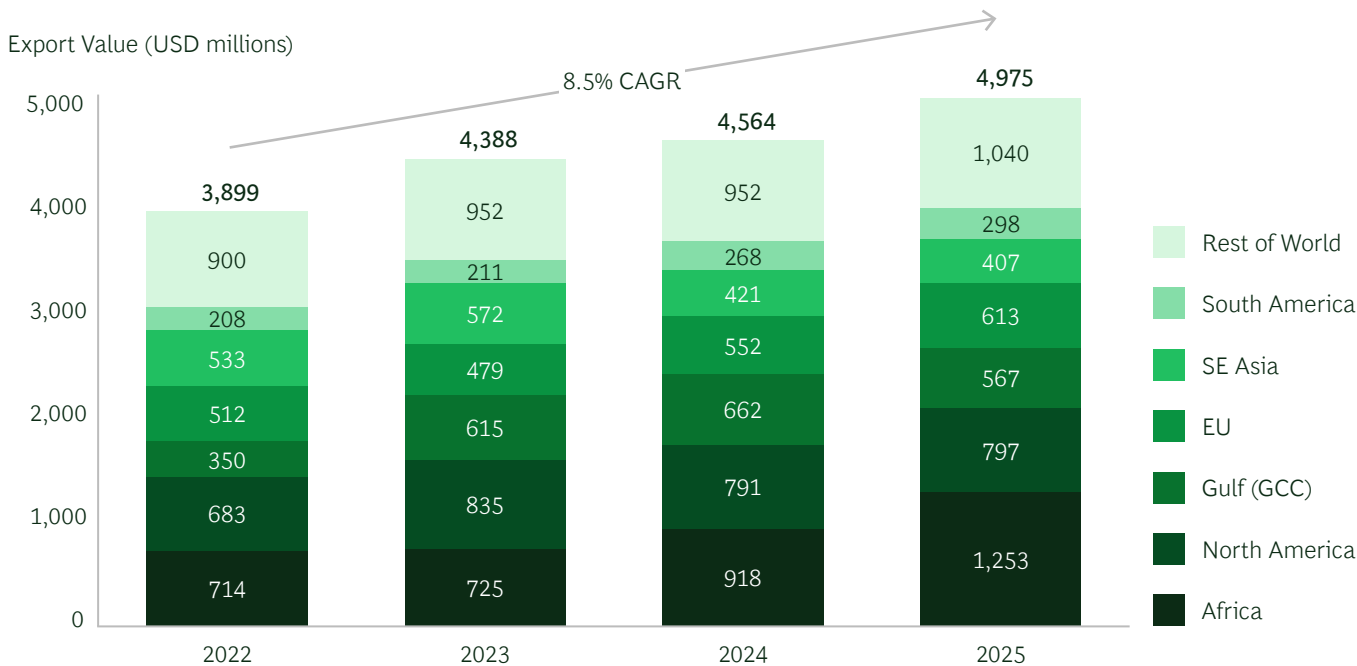
Globally, trade and supply chains are being redrawn. Companies are diversifying sourcing from China to build more resilient supply bases to absorb shocks during geo-political situations. By 2047, India could aspire to capture at least 20% of the global export market. This can translate into an export opportunity of USD 75+ billion by 2047. This will add a second engine of growth alongside domestic demand, and a durable support for the trade balance and our currency value.

23. UN Comtrade data (HS-code trade flows), 2024

24. DGCIS trade data (HS-code trade flows), 2025

EXHIBIT 2

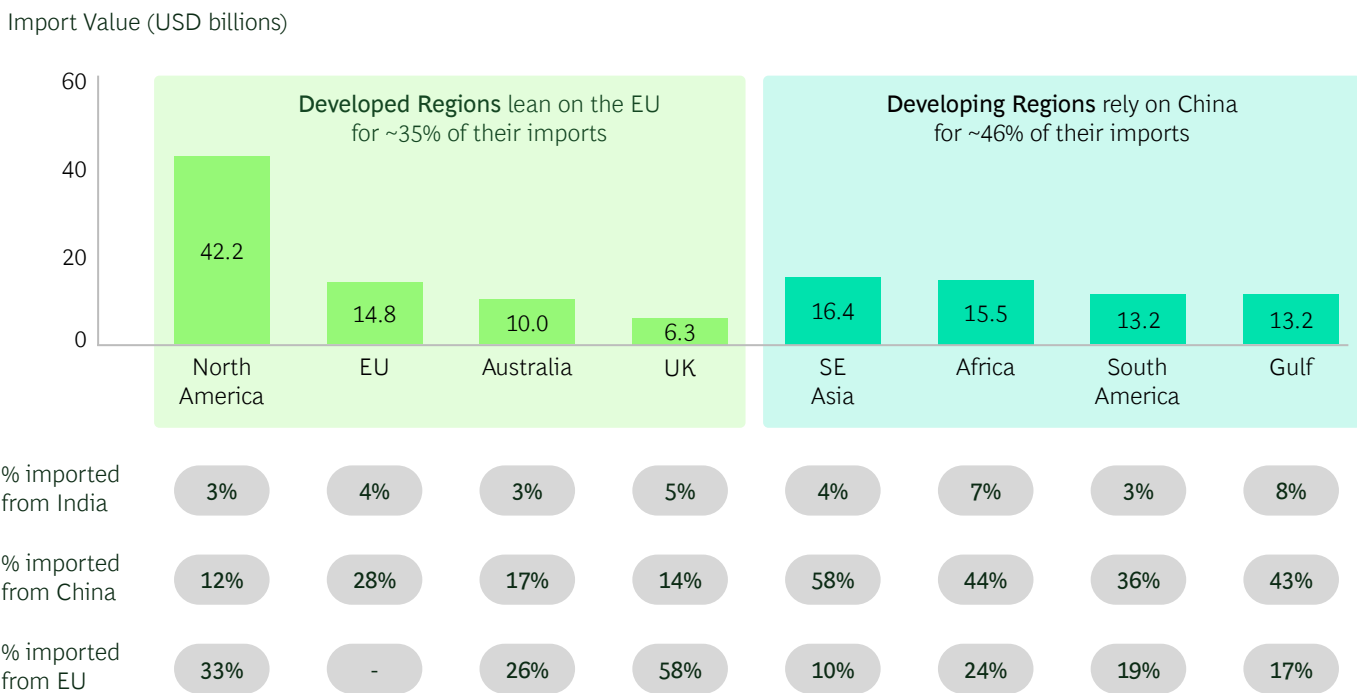
India’s exports in Mining and Construction Equipment sector have been growing over the years



Source: Foreign Trade Data Dissemination Portal of DGCIS

EXHIBIT 3

India holds ~4% of MCE import demand across major regions



Source: UN Comtrade Data 2024

Two emerging opportunity clusters for Indian players - each with its own requirement



Cluster 1: Southeast Asia, Africa, the Gulf and South America

The near-term prize for Indian manufacturers is clearest where four forces overlap:

- Large infrastructure and mining investment;
- High dependence on imported equipment,
- China+1 sourcing strategies
- Cost-sensitive demand that favours value for money equipment

Most markets in this cluster fit that profile. They are entering sustained build out cycles across transport, mining, power, ports, and urban infrastructure²⁵. In 2024, these regions collectively imported ~USD 58 billion of mining and construction equipment of which China supplied ~46% and India's share was ~5%²⁶ (*refer to Exhibit 4*). This clearly implies that these markets have a high import pool and someone else is filling it. Buyers want a resilient China+1 alternative, and the categories that matter most, like earthmoving, material-handling and conveying, material-processing are the ones where Indian OEMs already compete.

Capturing this opportunity will take a few deliberate moves:

- Open sales offices in priority countries. Give exports real priority and dedicated ownership inside the organization
- Build the dealer and distribution networks that put equipment, parts, and service within reach of buyers
- Engineer machines to the duty cycles, price points, and certifications that markets expect
- Offer financing that suits international buyers via multiple options like OEM linked captive finance (like Caterpillar does via Cat Financial) and leasing²⁷

The government could consider anchoring exports with state backed buyer financing on priority corridors by using India EXIM Bank's Buyer's Credit under the National Export Insurance Account (BC-NEIA)²⁸ to extend credit to overseas buyers. Concentrating on these incentives and offering soft loans on a few dedicated MCE trade corridors would make Indian equipment more accessible.

This is key to competing with Chinese OEMs who scaled across Africa on concessional buyer's credit and credit insurance from Sinosure, China Development Bank and China EXIM.



Cluster 2: Developed geographies like North America, EU, Australia and the UK

These are large, high-value, slower-growth markets. Here the basis of competition is capability rather than price. Three forces shape what they buy:

- Stringent emissions and safety regulation
- High labour costs which make automation an economic necessity
- Decarbonization pressure pulling demand toward alternate fuels like electric machines

These markets reward advanced, high-specification equipment which are emissions-compliant, autonomy-ready, and increasingly electric. Japanese, Korean, and European OEMs lead these categories now, and Indian players have the furthest to go to catch them (*refer to Exhibit 5*). Cluster 2 is therefore a build-toward, and not a near-term win. The next five years should go into new technology, emissions compliance, and the certifications these markets demand. If done right, India can compete in the largest, highest value import pools over the medium term.

The longer game is Cluster 2, the developed markets of North America, the EU, Australia, and the UK. The above moves need to be supported with long-term plans for:

- Sustained investment in R&D and technology to meet higher specifications
- Emissions and safety certifications these markets demand
- Digital capabilities at par with global players built into the machine

25. Global Infrastructure Outlook 2025–50: Investing in infrastructure, the platform for accelerating human progress, PwC, 2026

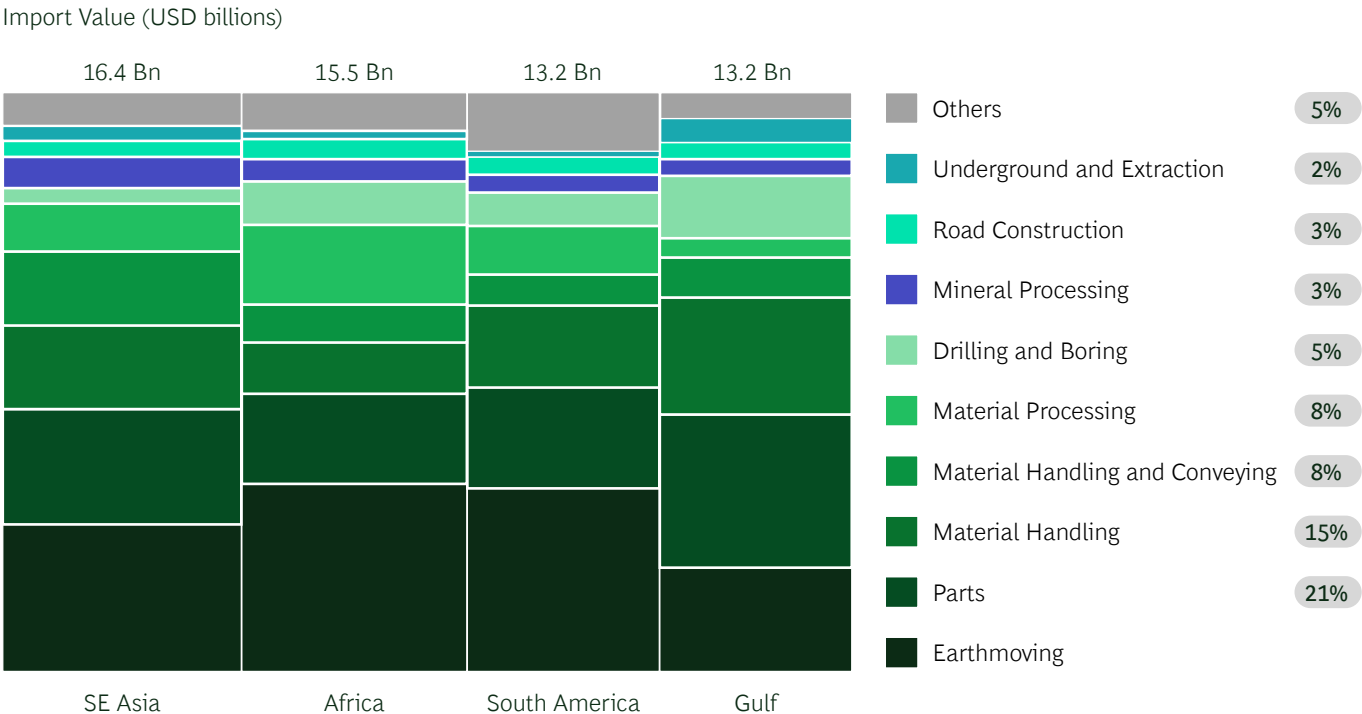
26. UN Comtrade data (HS-code trade flows), 2024

27. Cat Financial, Caterpillar, 2026

28. Buyer's Credit, Export-Import Bank of India, 2026

EXHIBIT 4

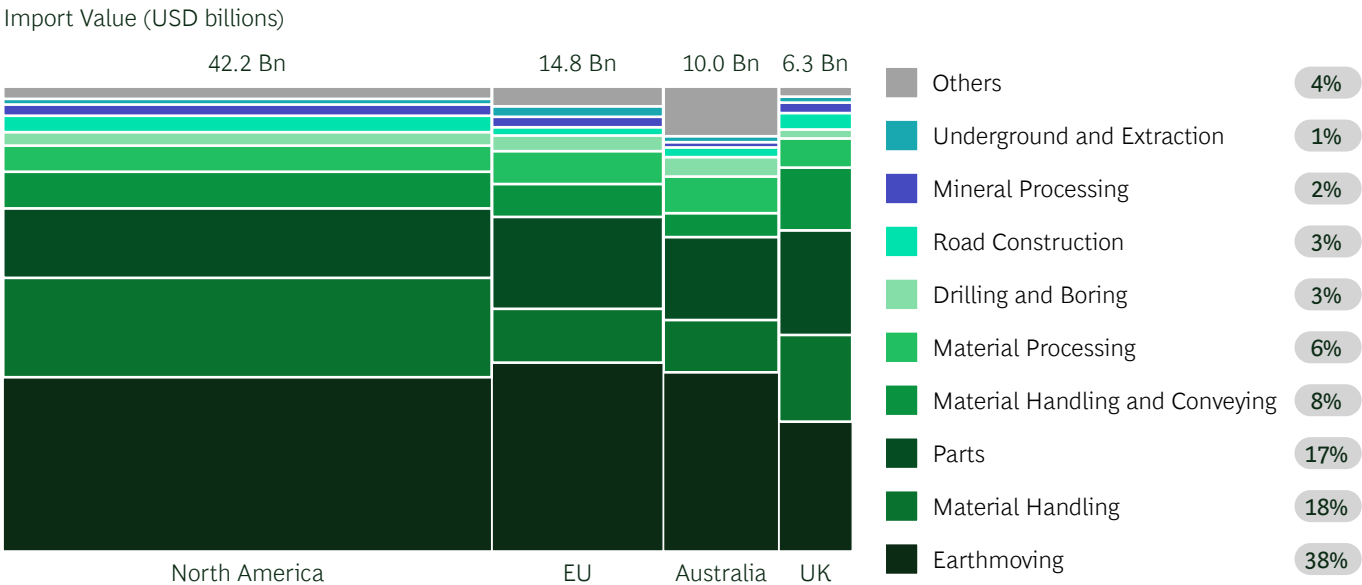
Developing regions are cost-sensitive and depend on China for ~46% of their MCE imports, while India's share was only ~5%



Source: UN Comtrade Data 2024

EXHIBIT 5

Developed regions prefer higher grade products with the bulk of their imports met from EU & Japan as compared to China



Source: UN Comtrade Data 2024



CASE STUDY

JCB India

A global OEM that made India its engineering and export heartland

JCB India shows the case of a global OEM that localized so deeply that India became its production and engineering base for world markets. A fully owned subsidiary of the UK's J.C. Bamford Excavators, manufacturing in India since 1979, it is one of JCB's most significant non-UK manufacturing, engineering and export bases.

- **A domestic stronghold with localized supply chains.**

JCB commands roughly half of India's construction-equipment market. The Ballabgarh plant near Delhi is the world's largest backhoe-loader factory. Across 6 plants JCB India builds 60+ models in 9 categories, backed by ~380 Indian suppliers and >95% localisation on the backhoe loader. In June 2026, it rolled out its 600,000th made-in-India machine³⁰.

- **An export footprint beyond typical emerging market destinations.** JCB exports ~10,000 machines a year from India, with the USA among its largest export markets. It is also deepening markets closer to home including Nepal, Sri Lanka, and Africa, where it has tripled business in three years across Ethiopia, Kenya, Tanzania, Uganda, and Angola³¹

- **India as an engineering base, not just a factory.**

JCB's Pune Design Centre is its largest R&D operation outside the UK, with 400+ engineers. At EXCON 2025, JCB India unveiled its largest excavator made in India. It is also introducing cleaner-technology products, including the all electric 19C-1E mini excavator and 3DX hydrogen combustion backhoe loader.

JCB India shows that a global OEM's localisation can become a genuine export and engineering platform.



CASE STUDY

Action Construction Equipment

An Indian-owned OEM building an export engine

ACE is India's leading crane manufacturer, with roughly 60% of the domestic mobile crane market and a strong presence in tower cranes²⁹. The company has used that base to reach 42+ countries across the Middle East, Africa, Asia, and Latin America with exports like cranes, backhoe loaders, forklifts, and tractors.

ACE is building its export momentum on three principles:

- **It designs for export rather than shipping domestic models abroad.** ACE engineers to the duty cycles and price points of export markets and is targeting exports with its lineup of backhoe loaders and tractors
- **JV-led technology partnership.** In March 2026, ACE formed a 50:50 JV with Japan's Kato Works and investing ~INR 200 crore to build a plant in Haryana to make higher-capacity truck, crawler, and rough-terrain cranes. Kato brings the engineering depth, and ACE brings the scale and cost base.
- **It markets itself as Make-in-India on the world stage.** At Bauma 2025 in Munich, a major global fair in the industry, ACE showcased export products like the Equal Wheel Backhoe Loader, a 3.5-tonne Telehandler, and the NX360 pick-and-carry crane, to build recognition in markets it wants to enter.

The company is aiming to double its exports over the medium term and targeting to double its revenue to ~INR 6,000 crore by FY30 with exports forming a key part of this growth³².

29. ACE Unpacked, Trade Brains, 2026

30. About JCB India, JCB, 2026

31. JCB India Sees Global Opportunities Amid US Export Tariffs, Autocar Professional, 2025

32. ACE Ltd Eyes Doubling Revenue by FY30, Autocar Professional, 2025



CASE STUDY

Epiroc (Sweden)

Building a developed-market export franchise on sustained R&D and technology upgrades

Epiroc illustrates what it takes to win in Cluster 2, where the basis of competition is capability rather than price. Spun out of Atlas Copco in 2018, the Swedish equipment maker generated about SEK 62 billion (~USD 6 billion) in revenue in 2025 across 150+ countries, with its base anchored in developed markets. North America sales are 29% of revenue, Asia and Australia combined account for 29%, and Europe at 13%³³. Three elements define how it competes.

- **Sustained R&D for technology progress.** Automation, digitalization, and electrification sit at the core of Epiroc's offer, supported by more than 2,000 R&D engineers (around 11% of the workforce) and R&D spend of 3.2% of revenue. The investment shows in the field: by 2025, more than 3,900 driverless machines worldwide ran on Epiroc automation, placing it among the largest enablers of autonomous mining. Its systems are OEM-agnostic, so customers can automate mixed fleets without discarding equipment they already operate³⁴.
- **Machines paired with autonomy and electrification, at scale.** Developed market customers increasingly buy capability rather than hardware, and large Australian miners have committed to Epiroc at scale. In 2025 the company secured the largest order in its history: roughly 50 fully autonomous, electric surface drill rigs for Fortescue, operated from a control centre in Perth more than 1,500 km away from the mines³⁵. At Hancock Iron Ore's Roy Hill mine, it converted all 78 non-Epiroc haul trucks to driverless operation using its LinkOA system, which Epiroc claims is a fully OEM-agnostic autonomous mine. These references demonstrate the autonomy, electrification, remote operation, and mixed-fleet interoperability that distinguish suppliers in Cluster 2³⁶.
- **A large, recurring aftermarket that compounds the equipment franchise.** A large and ageing installed base (average fleet age 8.6 years in 2025) underpins a resilient service business. Epiroc's aftermarket accounted for 66% of group revenue in 2025, and roughly 71% of employees work in aftermarket roles. This is what turns a one-time equipment sale into a durable revenue stream, and it is the hardest element for a new entrant to replicate, since it depends on local service presence, parts availability, and trained technicians in each market³⁷.



33. Annual and Sustainability Report 2025, Epiroc, 2026

34. Annual and Sustainability Report 2025, Epiroc, 2026

35. Epiroc wins its largest contract ever, for autonomous and electric-powered mining equipment, Epiroc, 2025

36. Epiroc and Hancock Iron Ore reach milestone as Roy Hill becomes world's largest fully agnostic autonomous mine, Epiroc, 2025

37. Annual and Sustainability Report 2025, Epiroc, 2026



AI-GENERATED IMAGE(S)

The trends re-shaping the industry

India's MCE market is growing on two fronts: a domestic market expanding structurally, and an export opportunity. The larger change, however, is global - the industry is being reshaped in how the equipment is powered, run, connected, and financed.

The six themes that follow are where that shift matters most for India.



Powertrains are shifting away from conventional diesel

Gaining traction globally, led by underground

But at an early stage in India



Machines are becoming connected and software-led

Becoming standard across fleets globally

Still maturing in India



Autonomous equipment are scaling

At scale use cases available globally

Still emerging in India in niche use cases



Mining is moving deeper and underground

A structural global shift underway

Beginning in India as grades decline



Mechanisation in mining operations

IPCC, surface miners adopted at scale globally

India has started building capability



New ways of financing and accessing equipment

An emerging model suited to India's needs

1. The shift to cleaner powertrains

Sustainability is moving from a compliance obligation to a buying factor, and powertrains are where it is visible. The shift away from diesel is moving at 3 different speeds. First is cleaner diesel, where tighter norms upgrade diesel fleets rather than replace them. Second is battery-electric, which works in underground mining since diesel heat and exhaust raise ventilation and cooling costs. Third is hydrogen, the likely route for the largest haul trucks, where batteries are constrained by size and charging time.

Cleaner diesel is already in motion in India. From 2025, CEV Stage V norms tighten particulate limits for construction equipment, while AIS-160 adds safety requirements. Together, these regulatory changes can raise equipment costs by ~12-15%³⁸, along with a fleet-upgrade cycle for OEMs and cost pressure for buyers.

Battery electric is concentrated underground, where its case is strongest. ~30% of new underground loaders sold globally in 2024 were battery-electric, rising to ~50% in Canada and Scandinavia³⁹. Asia accounts for about half of underground-vehicle demand by volume, but trails at an estimated 12-18% of new sales by value in 2026, up from about 5% in 2020. It could reach 30-35% of new unit sales by 2030 as large mining houses mandate electric fleets for new underground developments⁴⁰.

India is at an earlier stage but moving. BEML unveiled its first 35 t electric dump truck in 2026⁴¹. JCB has also announced fully electric models and hybrids⁴². India's underground mining-vehicle market is put at USD 600-800 million in 2026, growing 7-9% a year as CIL and private contractors mechanise. For many sites, adoption depends on charging infrastructure, reliable power supply, grid capacity, and battery economics, not just vehicle availability. This makes BEVs a near-term opportunity in underground mining and other controlled environments rather than a universal diesel replacement.

Hydrogen remains at the prototype stage. Liebherr ran a mining truck on hydrogen for the 1st time in 2024, and JCB has built hydrogen engine prototypes. Cost is the gating factor: hydrogen needs to fall toward ~USD 2/kg to compete in heavy equipment. India's Green Hydrogen Mission targets that level by 2030, keeping hydrogen credible if fuel supply and refueling infrastructure build out alongside.

For Indian OEMs, the task is to stay competitive on Stage V diesel while building battery-electric capability where demand is real.

38. Making the Transition to CEV-V Emission Norms: ICRA, NBM&CW, 2025

39. How Electrification is Revolutionizing Mining Efficiency, E-Mobility Engineering, 2025

40. Asia Underground Mining Vehicles, IndexBox, 2026

41. India's BEML launches electric mining truck, International Mining, 2026

42. Volvo CE Showcases Sustainability-Led Equipment Lineup at EXCON 2025, Desi Machines, 2025

43. Construction Equipment OEM Telematics Market Analysis, GlobeNewswire, 2025

2. Digital and software-defined fleets

Digitalization is becoming the foundation layer of the next-generation MCE product. GPS, sensors, and connectivity hardware now stream machine location, fuel burn, idle time, engine hours, fault codes, and component health. That data feeds fleet-management platforms which are increasingly being built into the machine.

The global installed base of active OEM telematics systems on construction equipment was estimated at 7.8 million units in 2024 and is expected to grow to 13.4 million by 2029⁴³. The focus is also moving from monitoring a single machine to managing whole-fleet performance. Prominent products include Caterpillar's VisionLink, Komatsu's KOMTRAX, and Volvo's CareTrack. India is on the same path but at an earlier stage. JCB's LiveLink and Tata Hitachi's ConSite and InSite are already building telematics into local machines.

For Indian OEMs, the implication is to treat digital capability as part of the machine, not an optional add on. Embedding reliable sensors, connectivity, remote diagnostics, service alerts, and fleet dashboards, and using machine data across dealer and service networks to improve uptime and parts planning. Over time, players will need interoperable, API-enabled platforms that work across mixed fleets, since contractors and miners rarely run a single OEM's equipment. The same digital layer becomes the base for autonomy, predictive maintenance, and outcome-based service models.

CASE STUDY

India | DigiCOAL

Public-sector coal deploying real-time digital oversight

In February 2026, CIL subsidiary SECL showcased its flagship digital transformation initiative - DigiCOAL⁴⁴. It is a comprehensive digital ecosystem for operational oversight, transparency and data-led governance in coal mining. The platform includes real-time HEMM fleet monitoring for shovels, dumpers and dozers, tracking location, operating hours and fuel consumption. It also enables anomaly detection for unusual fuel drops, excessive idle time and route deviations.

Key components of the initiative include:

- Real-Time HEMM Fleet Monitoring
- Video Analytics and Connected Worker Systems
- Drone-Based Surveillance
- Data-Driven Mine Planning
- Integrated Digital Platforms



CASE STUDY

In India, adoption is at an earlier stage, but leading miners and public-sector coal companies are beginning to deploy real-time monitoring, digital safety, video analytics, drone surveillance, and anomaly-detection systems.

Global | Caterpillar

From machine connectivity to fleet-wide operating visibility

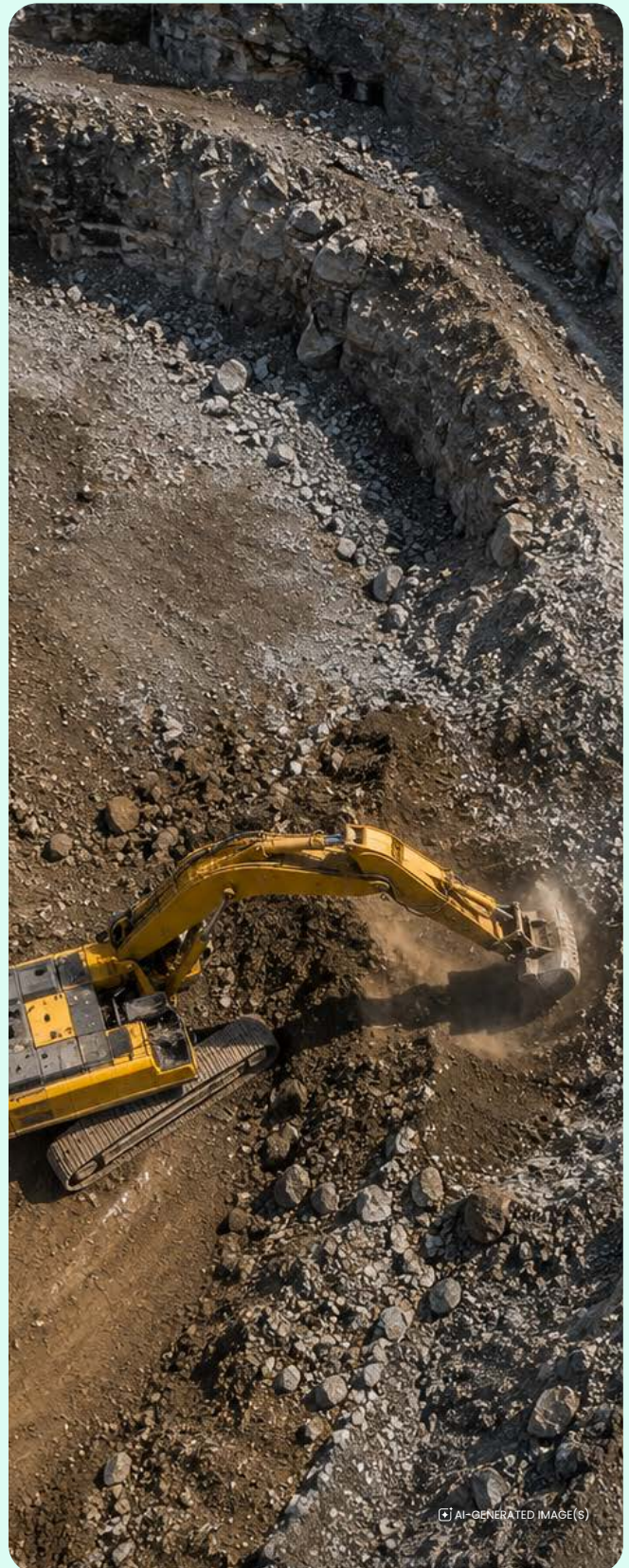
Construction and mining fleets are rarely uniform: customers often operate a mix of owned, leased, rented, on-highway and off-highway assets across multiple OEMs. Caterpillar's VisionLink addresses this by providing visibility into machine location, utilization, fuel use, idle time, fault alerts, service needs and mixed-fleet performance. VisionLink reportedly helped reduce idle time by up to 50% and improve fuel efficiency by up to 47%; Finning also cited examples where idle time moved from 60% to 40% and from 40% to 20%⁴⁵.

Connected platforms integrating on-highway and off-highway assets

Caterpillar is also widening the platform beyond the machine. In February 2026, it announced a collaboration with Geotab to integrate on-highway vehicle data into VisionLink, creating a single fleet-management view across on-highway assets, Cat machines and non-Cat off-highway equipment. Geotab brings nearly 5M connected vehicles and VisionLink has more than 1.6M connected off-highway assets reporting through the platform. It underscores a broader shift: as customers run mixed fleets, the value migrates from the machine to the platform that can see across all of it⁴⁶.

Mining OEMs are moving upstream into software solutions

The same logic is extending into mining software. Caterpillar's February 2026 acquisition of RPMGlobal, an Australian mining-software company, expands its portfolio of data-driven mining technology and software solutions across mine planning, operations and site management. This strengthens the case that leading OEMs are treating software as part of the core mining-technology stack, not only as an aftermarket add-on.



AI-GENERATED IMAGE(S)

44. SECL's DigiCOAL Showcased at Central Vigilance Commission's National Workshop, Ministry of Coal (Press Information Bureau), 2026

45. These are customer-specific results reported by Finning, not a universal benchmark for all fleets

46. Caterpillar teams with Geotab to strengthen full fleet offering, Caterpillar, 2026

3. Autonomous equipment are scaling

Autonomy becomes relevant where two conditions overlap: (1) Repetitive operations, and (2) High safety risk and mining fits both. Haul trucks, drills, dozers, loaders, and underground equipment run on defined routes or repeatable cycles which are better suited for automation than construction sites.

The global evidence is now substantial. Caterpillar's MineStar Command fleet has hauled more than 8.6 billion tonnes autonomously with no injuries across 3 continents⁴⁷. Komatsu's FrontRunner had crossed 700 autonomous trucks across 23 mine sites in 5 countries by February 2024⁴⁸.

Construction equipment will automate too, but more gradually through machine control, operator-assist, and remote operation in quarries, tunnels, solar farms, and port yards.

For India, two structural pressures make autonomy especially relevant:

- **Mining remains a hazardous occupation.** Coal and lignite mines recorded 53 fatalities in 2024 and over 200 over 2020-24⁴⁹. Underground operations concentrate the risk through confined spaces, roof falls, poor visibility, and close person-machine contact in haulage zones, places where collision avoidance and autonomous haulage have their strongest case.
- **India's mining workforce is large but informally trained.** A 2026 CEEW assessment found only ~1/4th of coal mine workers had undergone formal skills training or hold recognized certification. Autonomous and operator-assist equipment keeps output and safety from being capped by supply of qualified operators. A Ministry of Mines study group reports automation can raise output by 15-20%, cut fuel use by 10-15%, reduce tyre wear by 5-15%, and improve uptime by 10-20%⁵⁰.

Adoption in India is still early and concentrated in mining. The realistic near-term goal is an autonomy-ready ecosystem, with underground having the strongest pull. The practical path is to scale in layers:

- Connect machines and capture data
- Add operator-assist and collision-avoidance systems
- Deploy remote operation in high-risk sites
- Finally, move to full autonomy in controlled mine, quarry, tunnel, and port environments

4. Mining is moving deeper and underground

Mining is being pushed into a more equipment-intensive phase worldwide. As accessible surface reserves mature and ore grades decline, operators have to move more material and dig deeper for the same output.

Copper prices globally have risen sharply over the past year, crossing USD 13,000 per tonne⁵¹, driven by a widening gap between demand and the difficulty of producing supply. Global average copper ore grades have fallen from about 1.5% in the 1900s to around 0.6% in 2020⁵². Lower grades mean more material drilled, blasted, hauled, and crushed per tonne of metal, and the need to go deeper for richer ore. The same logic is playing out across other minerals as easy reserves deplete.

India is on the same path as well. Coal output is set to grow from around 1 BT today to roughly 1.5 BT by 2030, with underground production targeted to reach 100 MT by 2030 from a small base. In copper, India follows the global trend, importing roughly half its demand, with grades falling, costs rising, and ageing mines nearing exhaustion. The push for critical minerals under the National Critical Mineral Mission, approved in 2025, adds a further demand pool.

The new demand is for a different equipment stack - continuous miners, longwall shearers, road headers, underground drill jumbos, roof bolters, load-haul-dump machines, underground conveyors, ventilation and dewatering systems. These machines are needed because underground mines operate in confined galleries with roof-control risks, stricter ventilation requirements, limited visibility, and tighter evacuation constraints. Since the shift has only started, India needs to approach this as a capability-building opportunity. For OEMs, localisation cannot stop at conventional surface equipment. India will need to make or partner with global players to build capability in underground equipment, safety-certified components and remote-operation systems. This is also a potential export opportunity with many emerging mining markets requiring reliable, cost-effective underground equipment.

47. Cat® MineStar™ Command for hauling manages the autonomous ecosystem to increase haulage efficiency, enhance safety, Caterpillar, 2024

48. 700+ Autonomous trucks operating worldwide with Komatsu FrontRunner system, Komatsu, 2024

49. Year-wise Total Deaths due to Accidents in Coal and Lignite Mines as per Director General of Mines Safety (DGMS) from 2020 to 2024, Open Government Data Platform India, 2025

50. Assessing India's Coal Mine Workers: Skills, Preferences, and Future Opportunities, CEEW, 2026

51. Copper prices have hit record highs, but smelters face mounting strategic pressures, IEA, 2026

52. Copper Market Outlook: Navigating Soaring Prices in 2025, Discovery Alert, 2025

5. Mechanisation in mining operations

Mining is steadily mechanizing and replacing discrete, cyclical and labor intensive operations with continuous, machine driven ones. This plays out across 2 steps of the mining flow:

- In extraction, surface miners cut, crush, and load material in a single blast free pass, replacing the traditional drill-blast-excavate cycle for softer rock such as coal and limestone
- In haulage, in-pit crushing and conveying (IPCC) and overland conveyors move material continuously, in place of fleets of diesel haul trucks.

The pull is largely economic. Truck haulage can account for up to 50% of total mining cost⁵³. It carries payload only one way, returns empty, and moves its own dead weight. Continuous conveying avoids this empty return and the dead weight. Case studies of IPCC report 30-50% lower CO₂ than truck-only haulage, depending on the power source⁵⁴.

The technology is being adopted globally. The world's longest single conveyor belt runs 30.45 km and carries 3,350 tonnes/hr of bauxite in Western Australia⁵⁵. Surface miners are established across coal, limestone, bauxite, and iron-ore operations. Where a mine adjoins a pithead power plant, the conveyor can be electrified and run on local power, removing the diesel supply chain, which is a real constraint, since most large mines sit far from any fuel terminal.

Mechanisation also improves all-weather reliability. Truck haulage on unpaved ramps is hard to sustain through heavy rain, and Indian coal output typically falls during the monsoon. Coal India's production dropped for the first time in 6 years over April to November FY26 period, as prolonged rain disrupted mining⁵⁶. Conveyors are far less weather exposed and keep running in conditions that halt trucking, which matters most when power demand is high. Safety adds to the case: taking trucks off wet, sloping haul roads reduces the risk of skids, rollovers, and landslide related incidents.

India is at an earlier stage but building capability. Coal India is scaling continuous evacuation through its First Mile Connectivity programme. It is planning to invest INR 31,000 crore to move more than 1,000 MTPA through mechanized, conveyor-linked loading by FY30⁵⁷. L&T has manufactured surface miners in India since 2004 and now exports them, with 15 deployed across Africa (Guinea, Tanzania, Senegal) and a fresh order from Kenya⁵⁸. L&T also designed and built the 17 km cross-border overland conveyor from Meghalaya to a cement plant at Chhatak, Bangladesh, which carries about 960 tonnes/hour of limestone⁵⁹.

For Indian OEMs, this points to a growing market for IPCC systems, overland and pipe conveyors, surface miners, electrified haulage, and the crushing, control, and service capability that keeps continuous systems running.

6. Innovations in business models: financing and equipment-as-a-service

Financial innovation is becoming an important lever to widen equipment access and create recurring revenue. Globally, MCE customers are moving away from outright ownership toward hybrid fleets that combine owned, rented, and leased machines for balance utilization, flexibility, uptime, and a lighter balance sheet. That shift moves OEM value beyond the one-time sale into financing, service contracts, uptime support, fleet analytics, parts, rebuilds, and residual-value capture.

India's value chain spans multiple players like OEMs, contractors, miners, mine developers and operators, banks, NBFCs, leasing agencies, rental players, and service providers. But, construction-equipment decisions often sit with contractors. ~40% of contractors in India are small and mid-sized players⁶⁰ who prefer to lease or finance given capital constraints and short project cycles.

The pathway is a flexible access stack with mix of bank and NBFC financing, OEM financing, lease-to-own, rental, maintenance-bundled contracts, and selective pay-per-use or uptime linked models. In mining, the existing contractor and MDO-led models have already created an asset-light route for mine owners. Rental and pay-per-use models can be useful for high cost or intermittently used equipment such as drills, cranes, crushers, specialized underground equipment, and advanced technology trials without full ownership risk. Rental companies in turn become important buyers of new equipment as well.

Indian OEMs and dealers should offer financing through partners, build trusted resale and used-equipment channels, bundle servicing into the deal, and use machine data to lend and service better. Done well, this replaces one-time sales with recurring revenue, and gives buyers newer, safer equipment without the full upfront cost.

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54. IPCC as a driver of reduced mining costs and reduced emissions, Snowden Optiro, 2023

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57. First Mile Connectivity Projects in Coal Transportation, Ministry of Coal (PIB), 2025

58. Construction & Mining Machinery, Larsen & Toubro (Annual Review 2025), 2025

59. Overland conveyors go the distance, Canadian Mining Journal, 2023

60. India Construction Equipment Market Size, Share, Trends and Forecast, 2026-2034, IMARC Group, 2026





10-point agenda to unlock industry's potential

Government has taken some positive steps to enable growth of the MCE industry in the last few years:

- A dedicated PLI scheme in the Union Budget 2026-27 for Enhancement of Construction & Infrastructure Equipment (CIE) with INR 200 crore allocation, is a step in the right direction⁶¹. This momentum could continue by expanding its scope to mining and underground equipment as well.
- Trade agreement coverage for engineering goods has widened scope to promote exports. Deals with the UAE, Australia, EFTA bloc and the UK are now in force. High-potential markets like Brazil and Indonesia remain uncovered and represent the next set of opportunities.
- Mining is getting liberalized, with India's post-2020 reforms opening a competitive new supply channel in coal and private participation across minerals. For the equipment industry, this is a direct demand catalyst. Private operators are likely to invest in modern, mechanized equipment, focusing on safety and productivity gains. The potential next step is to operationalize auctioned blocks faster through timely clearances.

This is real momentum, but much remains to be done. Realising it calls for government and industry to act together. The ten-point agenda that follows potential areas for action by both stakeholders: policy and regulatory measures the government could consider commitment required by industry to drive it forward, and actions the two must take together on the enablers neither can deliver on their own.

61. Press Release on 332nd Report Pertaining to MHI, Press Information Bureau, 2026

Policy and regulatory enablers from Government to support the industry's faster growth



Promote Make in India through targeted policy and incentive



Strengthen fleet safety through scrappage and renewal



A single, empowered nodal agency



Protect operators by curbing counterfeit components



Industry's commitment to multiply the impact of Government's initiatives

Develop Tier-2 supplier ecosystem in clusters to build scale



Make bold export moves: set up subsidiaries in key geographies and build the network to export



Bring the best of technology and shape the mining and construction industry toward automation and mechanisation



Govt and Industry collaborating on critical enablers to create sustainable impact

Build on India's engineering talent to deepen R&D and innovation



Collaborate and co-invest to close the skilled-operator gap



Industry brings the technology, government helps enable its adoption

Policy and regulatory enablers from Government to support the industry's faster growth

Promote Make in India through targeted policy and incentive incl. rare earth processing ecosystem

Make-in-India for MCE could be reinforced through several government levers. First, a tiered customs duty structure that keeps duties low on inputs and capital goods but higher on fully built imports, so it is cheaper to build here than to import. This could be complemented by firm trade defense action against dumping as the DGTR did in imposing anti-dumping duties on Chinese-origin mobile cranes⁶². Secondly, this could be supported with public procurement of domestically built products. The Preference to Make in India (PPP-MII) Order⁶³ could be considered for application across the large government linked buyers of MCE. Defense shows the model works. By steering its purchases to Indian suppliers through Buy-Indian rules and import-ban lists, the government took the share of its equipment bought from Indian companies from about 25% in 2014 to nearly 70% by 2024⁶⁴. Simultaneously, defense exports rose to a record INR 23,600 crore in FY25 from less than INR 1,000 crore a decade back⁶⁵.

The government should also consider extending Make in India to develop the critical minerals ecosystem. The INR 34,300 crore National Critical Mineral Mission and the INR 7,280 crore scheme for rare earth magnets⁶⁶ are building capacity across mining, processing, and magnet-making. However, the equipment used to process and beneficiate these minerals is still largely imported. China, which refines about 90%⁶⁷ of the world's rare earths, also holds much of the technology and equipment supply chain for that processing. As part of critical mineral policy, government could allocate dedicated R&D support and PLI to build domestic capability in mineral processing and beneficiation equipment, so that the drive to secure minerals also localizes the machinery it depends on.

Strengthen fleet safety through scrappage and renewal

Old machines are a safety risk on mining and construction sites, and renewing the fleet lowers that risk while cutting emissions. India's Vehicle Scrappage Policy is built around on-road vehicles and does not yet cover off-highway construction and mining equipment. A purpose-built renewal mechanism could be considered for this fleet. A live precedent exists in China, whose large-scale equipment renewal programme, launched in 2024 covers construction among seven target sectors⁶⁸. It is backed by public funding and uses trade incentives to encourage operators to replace ageing machines.

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63. Public Procurement (Preference to Make in India) Order 2017, Department of Telecommunications, 2021

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66. Cabinet Approves Rs.7,280 crore Scheme to Promote Manufacturing of Sintered Rare Earth Permanent Magnets, Prime Minister's Office, 2025

67. Rare Earth Elements: Pathways to secure and diversified supply chains (Executive summary), International Energy Agency, 2026

68. China promotes large-scale equipment upgrades, trade-in of consumer goods, The State Council of the People's Republic of China, 2024

A single, empowered nodal agency

No one ministry owns the MCE sector today. Homologation and emission norms for construction equipment sit with MoRTH and the Central Pollution Control Board, while mining and other off-highway work falls outside those emission norms entirely. Industrial policy and incentives run through the Ministry of Heavy Industries and DPIIT. End uses that drive mining equipment demand sit with the Ministries of Coal and Mines. The result is that the sector sees difficulties in coordination which hurdles the pace of growth. ICEMA has also suggested that the government bring non-wheeled and off-highway machines that escape today's emission rules within the same framework⁶⁹.

A single, empowered nodal agency could help coordinate the MCE agenda, potentially enabling coordination across these ministries along with NITI Aayog and the PMO, and serving as a single window for approvals, certification, and policy decisions. It could also maintain a regular engagement with industry, giving the sector a standing point of contact to raise issues and shape policy.

A recent domestic precedent shows the model can work. The India Semiconductor Mission, set up in December 2021 as the nodal agency for building India's semiconductor ecosystem is backed by an INR 76,000 crore framework. As of December 2025, it had approved 10 projects worth about INR 1.60 lakh crore across 6 states⁷⁰. A comparable focused, single-owner approach could give MCE the same coordinated push.

Protect operators by curbing counterfeit components

AIS-160 now mandates safety features on new machines, but nothing equivalent governs the replacement parts fitted over a machine's life. In mining and construction, a failed counterfeit hydraulic, brake, or structural component is a direct safety hazard. The problem is not unique to this sector. In the adjacent automotive market, Automotive Component Manufacturers Association of India (ACMA) has long flagged counterfeit spare parts as a serious and growing safety risk. The government could consider the following to extend safety standards to the components market:

- Extending safety certification to aftermarket parts, similar to AIS-160 for new machines;
- Introducing a verifiable part identity via QR codes that buyers can authenticate;
- Establishing accountability for online marketplaces and distributors for verifying the parts they sell

Industry's commitment to multiply the impact of Government's initiatives

Develop Tier-2 supplier ecosystem in clusters to build scale

India manufactures a wide range of MCE equipment, but component localisation lags. For instance, while the overall localisation in construction equipment sits at ~50%, the gap is concentrated in the high value components like hydraulics, electronic controls, and undercarriages which are still largely imported⁷¹. The contrast across products is sharp: backhoe loaders are already 85-90% localised, while excavators sit at only 55-60%, because high-technology parts like hydraulic control valves and electronic control units still come from abroad⁷². OEMs need to move beyond local assembly to actively build domestic suppliers by investing in industry clusters that create the scale economies and shared capability the sector lacks today. This will help localize technology-intensive components and cut import dependence. Multiple firms have already started taking steps in this direction. For example, Sany India is targeting to increase localisation at its Chakan, Pune plant from ~40% to ~75% over the next few years⁷³.

Make bold export moves: set up subsidiaries in key geographies and build the network to export

Reaching export markets will take more than shipping from India. OEMs need a presence on the ground in priority geographies with subsidiaries, local distribution, and after-sales support. This should be coupled with machines that are built for the terrain, and price points of those markets rather than exporting domestic models unchanged. India shipped more than ~11,900 excavators to ~110 countries in 2025, showcasing that domestic capability exists, but the distribution channel around it needs to strengthen. A proven Indian example exists in the adjacent farm equipment industry: Sonalika became a prominent tractor-export brand, exporting to 150+ countries. This was achieved by building regionally adapted machines for price-sensitive markets in Africa, Latin America and Asia, backed by local assembly plants and after sales service.

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73. Transforming India's Construction: SANY India's journey and innovations, Manufacturing Today India, 2024

Bring the best of technology and shape the mining and construction industry toward automation and mechanisation

India's mining and construction sites still run at low levels of mechanisation and automation compared with developed markets. India generates ~USD 5 of machinery demand per USD 1,000 of construction spending, against roughly USD 8 across Asia-Pacific and ~USD 12 worldwide. OEMs should actively bring advanced, automated, and mechanised equipment to Indian customers and demonstrate their productivity and safety gains. This will help move industry up the technology curve and towards levels seen in developed markets. India's automotive sector shows how JV like Hero with Honda in the 1980s brought global technology into the country. India is now the 3rd largest automotive market in the world. They also seeded a deep Tier-2/3/4 supplier base: India's auto component industry has since grown to about USD 80 billion, with USD 22.9 billion of exports in FY25 with 32% to North America and 29.5% to Europe⁷⁴.

Govt and Industry collaborating on critical enablers to create sustainable impact

Build on India's engineering talent to deepen R&D and innovation

India is one of the world's largest hubs for Global Capability Centres. Leading global players like Caterpillar, Komatsu and Volvo already operate engineering centres in the country. The opportunity is to utilize and scale such centers to enable R&D, product ownership and eventually supply their global networks through India. These should be developed by tapping into the country's engineering talent base, partnering with academia and working closely with end-users so products are built around real operating conditions. Government can accelerate it by weighting investment incentives toward OEMs that bring R&D and innovation centres, not just assembly capacity.

Collaborate and co-invest to close the skilled-operator gap

~80% of India's construction workforce is unskilled or informally trained⁷⁵. Mining and construction equipment is operated in hazardous environments where a certified operator is a safety necessity. India has the building blocks in place through Skill India, PMKVY, the NSDC, and the Construction Skill Development Council and the need now is to channel these to specific requirements of the sector. Both government

and industry could jointly own the ITI initiative on a 'government-owned, industry-managed' basis. Government's role could span funding, upgrading, and standardizing certification. The industry body should bring the know-how with its real-world equipment knowledge and training expertise. The talent pipeline can subsequently be absorbed to fill the growing need for skilled operators in the industry. Germany's dual vocational training system shows how it can benefit the economy: it helped bring youth unemployment to ~6% in 2019, against ~15% across the EU.

Supply is only half the problem. The sector also struggles to attract people, because it is seen as less aspirational, and that perception shapes who applies for operator jobs, which promoters invest, and which vendors meet global standards. Like automotive before it, the industry needs to build genuine pride in the work through the following initiatives:

- Give operators formal benefits, clear career paths, and basic insurance to make the career more lucrative to choose
- Build an education and social connect early, so students understand the sector before they settle on a career
- Improve site conditions and push awareness through marketing

Industry brings the technology, government helps enable its adoption

As the global industry shifts to connected, software defined equipment, India needs to do two things at once. Industry's job is to develop and invest in technology. This would include lifting the R&D spend towards levels that global leaders sustain (3-6%), from the much lower levels Indian OEMs have historically spent. Simultaneously, Indian OEMs must partner, license or JV for the categories it cannot build alone. Government can support pulling that technology into use. It could consider mandating advanced equipment in public mining and construction tenders and backing early uptake through large PSU contracts such as Coal India.

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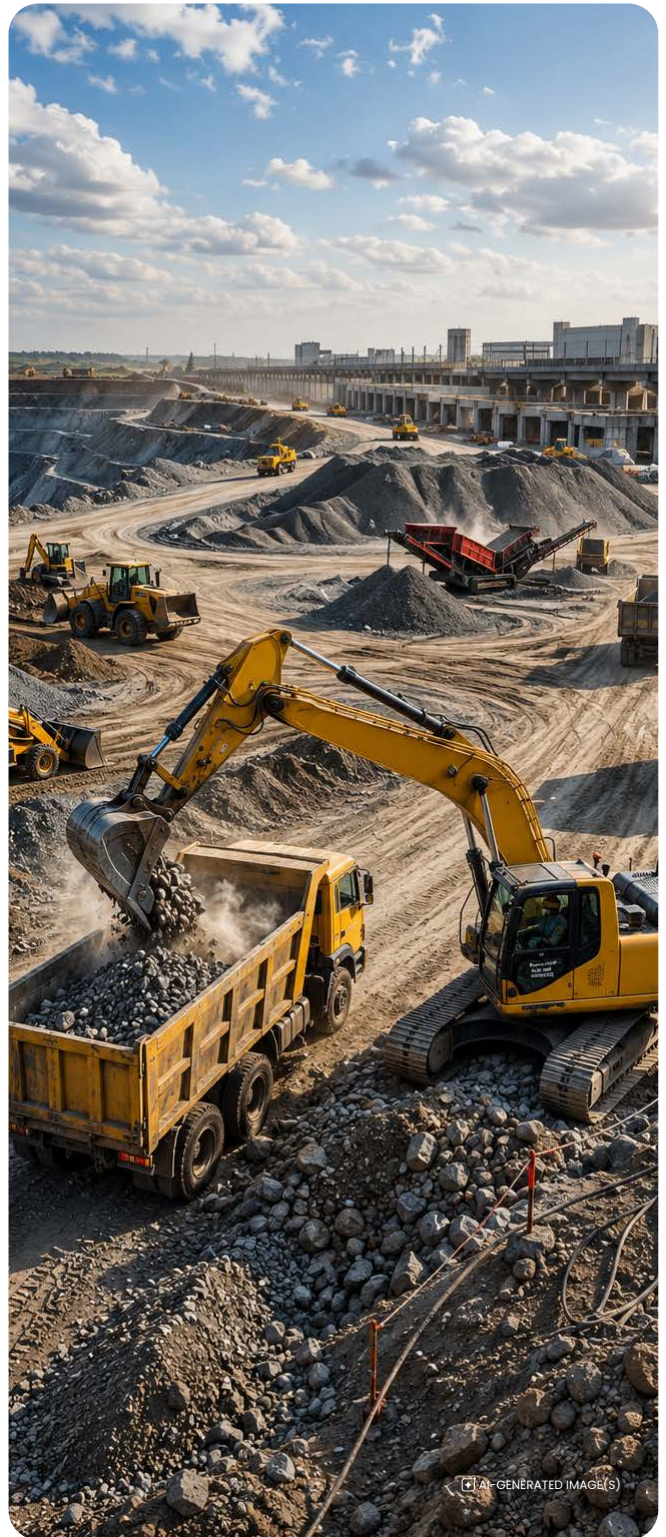
The Bottom Line

Over the past decade India's MCE industry has gone from a small, import-led market to a manufacturing base that now exports more equipment than it imports. 2 things are driving it forward: a domestic market that is expanding, and an export opportunity that has started to open.

At home, the demand runway is long. Infrastructure, manufacturing, critical minerals, and the energy transition will each pull equipment demand for years. Mechanisation in India sits below global benchmarks, which will further increase the pace of growth. Exports are the newer story. Southeast Asia, Africa, the Gulf, and South America are high-growth, import-dependent, and supplied largely by China today. As these buyers look to diversify their sourcing, this will open opportunity for an India alternative. The developed markets of North America, Europe, Australia, and the UK are a longer game, and getting there will depend on the technology, emissions compliance, and service networks those buyers expect.

The equipment is being reinvented at the same time, and this is where Indian OEMs have ground to cover. In the developed markets, factors like product capability become more important than just competing on low price. Machines there are moving to meet strict emissions rules, to run on batteries, and to operate autonomously. This is where Japanese, Korean, and European OEMs currently lead. Closing that distance is what competing globally will require. Alongside, the business model must evolve with the product with more focus on uptime, financing, service support, machine data, safety, and lifecycle cost.

Keeping up with these changes rests on the 10-point agenda laid out in the report. Apart from each playing its part, Government and Industry can work in conjunction towards creating a stronger ecosystem of R&D, up-skilling and tech adoption within the industry. This will help India's MCE sector capture the opportunities ahead.





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Notes





Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organisation, with over 10,500 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 365,000 enterprises from 332 national and regional sectoral industry bodies.

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