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Assessment of Pre-engineered buildings, structural steel and self-supported roofing industries

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by S&P Global

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Contents

1 Global macroeconomic assessment 3

1.1 Global GDP outlook 3

1.2 Overview of investments 6

2 Macroeconomic assessment of India 9

2.1 GDP outlook 9

2.2 Demographic factors support India's growth 11

2.3 Gross value added (GVA) 13

2.4 Major government initiatives to boost infrastructure in India 21

2.5 Construction sector 23

3 Assessment of structural steel industry 30

3.1 Overview of structural steel industry 30

3.2 Market size of structural steel industry 31

3.3 Key growth drivers of structural steel 34

3.4 Key challenges in the structural steel market 35

4 Assessment of the pre-engineered building industry 36

4.1 Overview of pre-engineered products and their applications 36

4.2 Advantages of PEBs over traditional construction 40

4.3 Key selection criteria for pre-engineered building suppliers 42

4.4 Critical factors in the pre-engineered building industry 44

4.5 Overview of global pre-engineered buildings industry 45

4.6 Overview of pre-engineered buildings market in India 51

5 Assessment of the self-supported roofing industry 68

5.1 Overview of self-supported roofing 68

5.2 Key advantages of self-supported roofing 69

5.3 Overview of self-supported roofing industry 69

6 Assessment of competitive landscape of pre-engineered buildings industry in India 75

6.1 Overview of key players 75

6.2 Overview of key financial parameters 77

1 Global macroeconomic assessment

1.1 Global GDP outlook

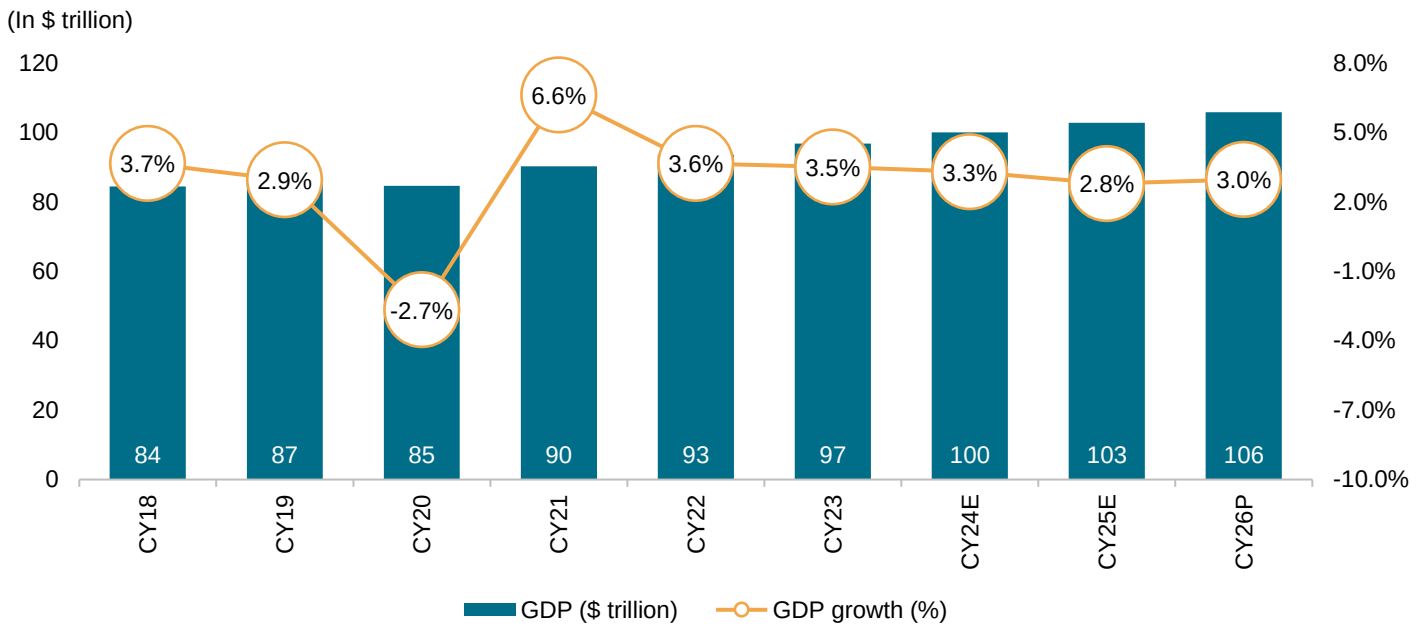
Global GDP is estimated to grow 2.8% in calendar year 2025 and 3.0% in 2026 amid moderating inflation and steady growth in key economies

As per the April 2025 update of the International Monetary Fund (IMF), global gross domestic product (GDP) is projected to grow at 2.8% in calendar year 2025 and 3.0% in 2026. The growth is expected to be propelled by the emerging and developing economies, with regional differences on account of global economic tensions.

The economy showed signs of stabilisation through much of 2024 after a prolonged and challenging period of unprecedented shocks. Inflation declined gradually from multidecade highs towards central bank targets and labour markets normalised, with unemployment and vacancy rates returning to pre-pandemic levels. Overall, growth has hovered around 3% in the past few years.

The escalation in trade tensions and policy uncertainty are, however, expected to have a significant impact on global economic activity.

Global GDP trend and outlook (CY18-26P, $ trillion)



Note: E: Estimated, P: Projection
Source: IMF economic database, Crisil Intelligence

India among fastest-growing major economies

India became the fourth largest in the world in fiscal 2025 as per IMF April 2025 estimates and has grown at a faster growth rate compared to top key economies. Additionally, India's expanding economy along with growing per capita

income, could positively impact the consumer purchasing power, which in turn will influence the demand for discretionary spends like entertainment, leisure, tourism, etc.

United States: For the United States, growth is projected to decrease in 2025 to 1.8%, 1% lower than the rate for 2024 as a result of greater policy uncertainty, trade tensions, and a softer demand outlook, given slower-than-anticipated consumption growth. Tariffs are also expected to weigh on growth in 2026, which is projected at 1.7% amid moderate private consumption.

Euro area: The euro area is expected to grow at a slightly slower pace of 0.8% in 2025, before picking up at 1.2% in 2026. Rising uncertainty and tariffs are expected to be the key drivers of subdued growth in 2025, whereas stronger consumption on the back of rising real wages and a projected fiscal easing in Germany are expected to support the uptick in 2026.

For advanced economies, growth under the reference forecast is projected to drop from an estimated 1.8% in 2024 to 1.4 percent in 2025 and 1.5 percent in 2026. The forecasts for 2025 include significant downward revisions for Canada, Japan, the United Kingdom, and the United States and an upward revision for Spain.

Emerging market and developing economies: For emerging market and developing economies, growth is projected to drop to 3.7% in 2025 and 3.9% in 2026, following an estimated 4.3% in 2024.

Real GDP growth comparison between India and advanced and emerging economies

Real GDP growth (Annual percent change)	2019	2020	2021	2022	2023	2024	2025	2026P
Advanced economies	1.9	-4.0	6.0	2.9	1.7	1.8	1.4	1.5
Canada	1.9	-5.0	6.0	4.2	1.5	1.5	1.4	1.6
China	6.1	2.3	8.6	3.1	5.4	5.0	4.0	4.0
Emerging market and developing economies	3.7	-1.7	7.0	4.1	4.7	4.3	3.7	3.9
Euro area	1.6	-6.0	6.3	3.5	0.4	0.9	0.8	1.2
India*	3.9	-5.8	9.7	7.6	9.2	6.5	6.5**	6.3
United Kingdom	1.6	-10.3	8.6	4.8	0.4	1.1	1.1	1.4
United States	2.6	-2.2	6.1	2.5	2.9	2.8	1.8	1.7
World	**2.9**	**-2.7**	**6.6**	**3.6**	**3.5**	**3.3**	**2.8**	**3.0**

Notes: P- projected
** Historical numbers for India are for financial year from April to March (2020 is FY21 and so on) and as per MoSPI.*
***2025 Projection is as per the Crisil forecast for FY26, 2026 projection is as per IMF*
Source: IMF economic database, MoSPI, Crisil Intelligence

Per capita GDP of emerging market and developing economies faster than the global average

Between CY19 and CY24, global per capita GDP clocked a CAGR of 3.8% and advanced economies GDP per capita growth was at 3.8%, according to the IMF. Meanwhile, India witnessed a higher per capita GDP compared to global levels with CAGR of 5.8%, the US, China and UK registered growth of 5.5%, 5.2% and 4.3% respectively during the same period.

GDP per capita, current prices (U.S. dollars per capita)- CY basis

Regions	2019	2020	2021	2022	2023	2024E	2025E	2026P	CAGR (2019-24)
Australia	54,320	53,163	64,251	65,574	64,652	66,248	64,547	66,277	4.1%
Canada	46,431	43,573	52,912	56,358	54,376	54,473	53,558	56,141	3.2%
China	10,334	10,696	12,878	12,968	12,961	13,313	13,687	14,534	5.2%
Eurozone (Euro area)	39,310	38,244	43,057	41,672	45,298	46,823	47,857	49,519	3.6%
India	2,050	1,916	2,250	2,361	2,547	2,711	2,878	3,136	5.8%
United Kingdom	42,713	40,231	46,731	46,234	49,213	52,648	54,949	57,387	4.3%
United States	65,561	64,454	71,232	77,801	82,254	85,812	89,105	92,097	5.5%
Advanced economies	48,585	47,603	53,109	54,045	56,668	58,626	60,321	62,572	3.8%
Emerging market and developing economies	5,447	5,178	6,035	6,398	6,506	6,710	6,803	7,105	4.3%
World	11,554	11,147	12,610	13,030	13,474	13,933	14,213	14,742	3.8%

Notes: P – projected
Source: IMF, Crisil Intelligence

1.2 Overview of investments

Global FDI likely to remain slightly weak and uncertain in 2025

Global foreign direct investment (FDI) declined by 11% in 2024, when excluding financial flows through European conduit economies. Including these flows, total FDI was estimated at $1.5 trillion, a 4% increase from 2023. The number of greenfield project announcements increased, but the total value declined by 5%, showing a cautious approach by investors. International project finance activity slowed, with the number of deals falling 27%, affected by tighter financing conditions and changes in interest rate expectations. Cross-border mergers and acquisitions increased by 14% in value, reflecting some improvement in deal-making activity.

FDI flows to developing countries remained stable overall, though outcomes varied by region. Flows increased in Africa by 75%, and rose in ASEAN, South Asia (including India), and Central America. Flows declined in East Asia and South America. Around 75% of total FDI in developing countries was received by ten economies, showing a concentration of investment flows.

The outlook for FDI in 2025 is shaped by high levels of economic and policy uncertainty. Factors such as inflation, interest rates, supply chain changes, and geopolitical risks will influence investment decisions. FDI flows may increase in the United States and some parts of the European Union due to domestic policy and growth expectations. Countries located near large markets or involved in global production networks, such as those in ASEAN, Eastern Europe, West Asia, and North Africa, may receive more FDI linked to changes in global supply chains.

Global investment trends, 2024 vs 2023

FDI	Cross-border M&As	Green field projects	International project finance
			
Decreased by ~ 11% by value	**Increased by 14% by value**	**Increased by 3% in number**	**Decreased by 27% in number**

Note:
Source: UNCTAD, Crisil Intelligence

FDI in developed economies

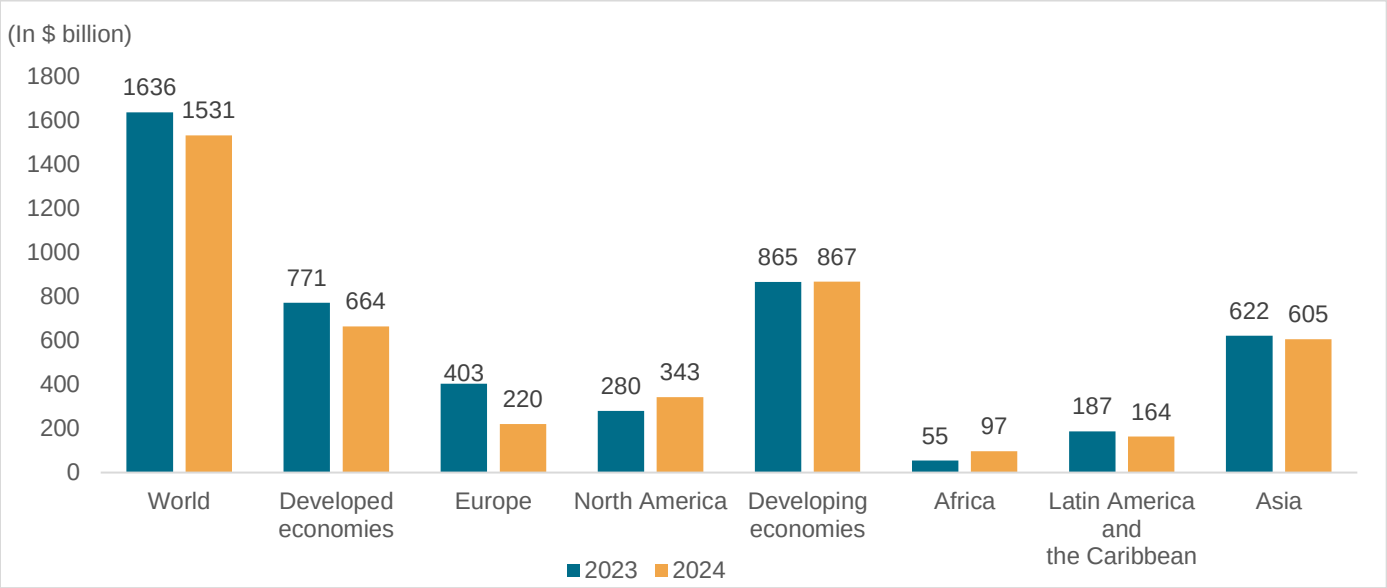
Transactions by multinational enterprises (MNEs) in conduit economies continue to affect FDI flows in developed countries. Excluding conduit economies, FDI in Europe fell by 58%. In the European Union, flows declined in 15 of the 27 member States. The largest economies and FDI recipients all experienced lower inflows, with Germany down by 89%, Italy by 24%, and Spain and France 35% and 20%, respectively. In contrast, FDI rose 23% in North America, with a 20% increase in the United States caused mostly by higher M&A values and large-scale investment in high-tech and clean energy sectors. Cross-border M&A activity, which typically accounts for a large share of FDI in developed countries, rose by 36% to $418 billion, largely due to a doubling of M&A sales values in the United States. The number of greenfield project announcements in developed economies rose by 2%, with approximately 234 more projects than in 2023. The overall value of greenfield projects (projected capital expenditures) in developed economies rose by 11%, with higher average values driven to a large extent by megaprojects in semiconductors and digital infrastructure. FDI in developing economies.

In 2024, developing economies accounted for 57% of global FDI inflows. Total FDI to developing countries remained stable at $867 billion. Greenfield project announcements in developing countries increased by 4% in number but declined by 19% in value in 2024.

International project finance dropped by 27% in number following an already steep decline in 2023. Unfavorable macroeconomic conditions have significantly impacted large-scale investments in infrastructure and energy, resulting in a substantial decline in investment project financing in terms of values, with a 26% drop. The decline was particularly pronounced in Asia, where IPF values plummeted by 43%. Cross-border M&A values, which predominantly affect FDI flows in developed countries, increased by 14% to $443 billion.

FDI flows to developing Asia – by far the largest recipient region – were 3% lower in 2024 and reached $605 billion. Despite this modest drop, the region attracted 40% of the total global inflows. The decline was driven by falls in flows to East asia, particularly China which saw FDI decline by 29% in 2024. South-East Asia remained a key driver of foreign direct investment (FDI) growth, with a 10% increase in inflows. Notably, countries such as Indonesia, Malaysia, Singapore, Thailand, and Vietnam saw substantial rises, resulting in a record-high FDI of $225 billion in the ASEAN region.

Foreign direct investment- Inflows by economic grouping and region



Source: UNCTAD, Crisil Intelligence

The value of greenfield projects remained high in 2024, second only to the record reached in 2023

Greenfield project announcements, primarily in industrial sectors, saw a moderate increase of 3% in number but a decline of 5% in value. Despite the drop, the value of greenfield projects remained high, second only to the record reached in 2023, driven by large-scale investments in semiconductor manufacturing, data infrastructure, and AI technologies. In 2024, As a source, developed economies announced a total of 15,152 projects, which is 234 more projects announced than in 2023.

Number of announced greenfield projects by source (2022-2024)

Region/ economies	2022	2023	2024	YoY change (2023-24)
Developed economies	14,993	14,918	15,152	2%
• Europe	9,259	9,667	9,786	1%
• North America	4,409	3,660	3,699	1%
• Other developed economies	1,325	1,591	1,667	5%
Developing economies	3,125	3,892	4,204	8%
• Africa	232	286	252	-12%
• Asia	2,531	3,308	3,639	10%
• Latin America and the Caribbean	361	295	312	6%
• Oceania	1	3	1	-67%
World	18,118	18,810	19,356	3%

Source: UNCTAD, Crisil Intelligence

2 Macroeconomic assessment of India

2.1 GDP outlook

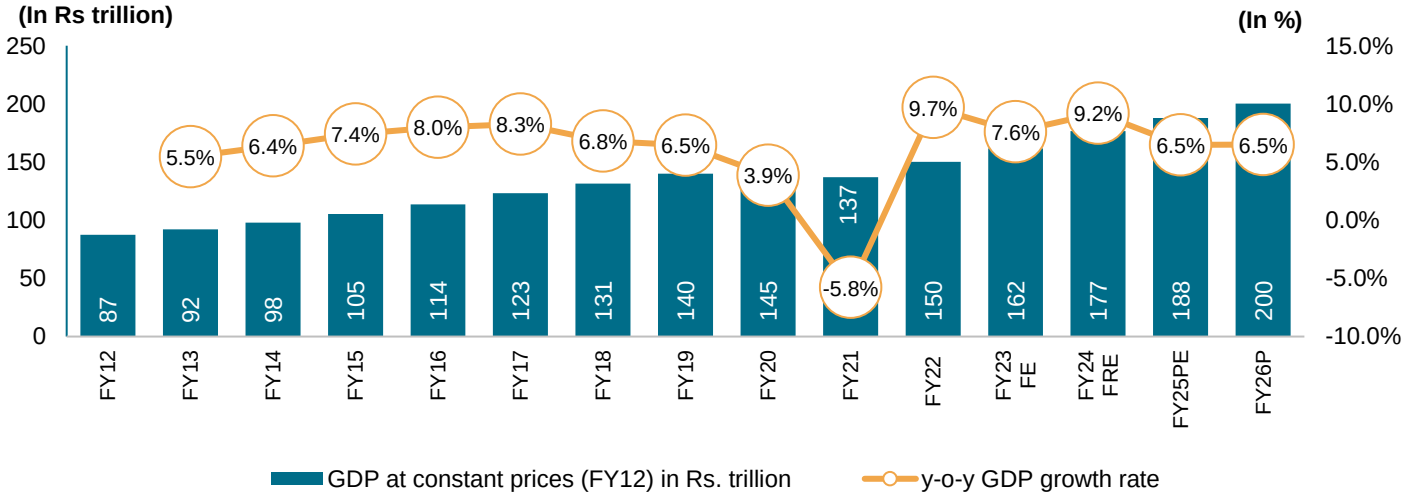
India GDP logged 6.1% CAGR between FY12 and FY25

India's GDP grew at 6.1% compounded annual growth rate (CAGR) between FY12 and FY25 to Rs. 188 trillion in FY25 from Rs. 87 trillion in FY12. During this period, the surge in the non-agricultural economy has driven growth. The government's investment push, along with easing input cost pressures for industry, has also played a major role in shoring up growth. However, services have been slowing owing to waning pent-up demand (post the pandemic), with the exception of financial, real estate and professional services, which have powered ahead on the back of a robust growth in banking and real estate sectors.

Additionally, according to Provisional Estimates (PE) of FY25, India's GDP is projected to have grown at 6.5% in FY25, a moderation from the 9.2% growth recorded in FY24. Despite this deacceleration, growth remains close to the pre-pandemic decadal average of 6.6 % between FY11- 20, enabling India to retain its position as the fastest growing major economy.

Moving forward, Crisil projects GDP growth to remain steady at 6.5% in FY26, despite potential headwinds arising from geopolitical developments and global trade uncertainties, including tariff actions by the United States. Factors expected to support growth includes easing food inflation, tax incentives announced in the Union Budget 2025-26, and lower borrowing cost, all of which are expected to boost discretionary consumption. However, India's Current Account Deficit (CAD) is projected to widen slightly in FY26, driven by challenges in exports amid subdued global demand and trade tensions. Nonetheless, a strong service trade surplus and continued growth in remittances are expected to mitigate the extent of the widening CAD.In the medium term (fiscals 2025-2031), Crisil expects India's GDP to grow 6.7% per year, with capital investments playing a dominant role and a bigger push from efficiency gains.

India real GDP growth at constant prices (new series)



Note: FE: Final Estimates, FRE: First Revised Estimates, PE: Provisional Estimates, P: Projected
These values are reported by the government under various stages of estimates
Only actuals and estimates of GDP are provided in the bar graph
Source: Provisional Estimates of annual GDP for 2024-25, Ministry of Statistics and Program Implementation (MoSPI), Crisil Intelligence

India's economy to grow 6.5% in fiscal 2026, pace to sustain till fiscal 2031

Crisil expects India's GDP to grow at 6.5% this fiscal, same as estimated for fiscal 2025, driven by a relatively balanced set of domestic drivers. However, the ongoing & trade-related uncertainties pose some downside risks the forecast. India's economic growth rate is normalising towards its medium-term trend and, in fiscal 2026, will be supported by factors such as lower food inflation, lower borrowing costs & higher disposable income of the middle class.

Over fiscal 2025 to 2031, Crisil expects the pace of GDP growth to sustain, averaging 6.7%, thereby making India the third-largest economy in the world.

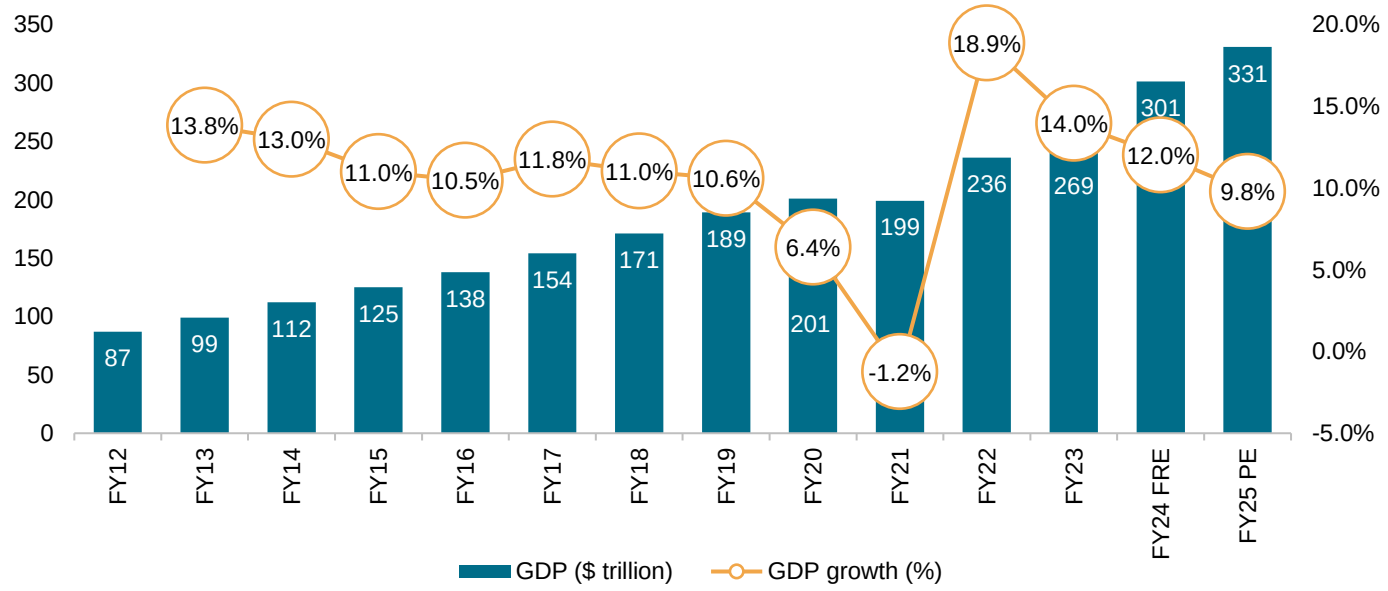
A large part of this growth will be because of capital investments. Within this space, the share of private sector in capital investments is expected to increase as the government continues to focus on fiscal consolidation. The manufacturing and service sectors are expected to grow at 9.0% and 6.8% CAGR, respectively, over the period, with the service sector remaining the dominant growth driver, thereby contributing to ~55.0% share in GDP by fiscal 2031 vs. ~20.0% share in the case of the manufacturing sector.

That said, the manufacturing sector is expected to grow at a faster pace between fiscals 2025-2031 vs. years between fiscal 2011 and 2020. Over the next seven years, as global growth is expected to be relatively tepid and the trade environment restrictive, domestic demand will play an important role in supporting the growth of the manufacturing sector.

Nominal GDP recorded 11.1 % CAGR between FY12 and FY25

India's nominal GDP logged ~11.1 CAGR between fiscals 2012 and 2025 to reach INR 331 trillion from INR 87 trillion. For fiscal 2025, it grew ~9.8%, slower than 12% in fiscal 2024.

India nominal GDP growth at current prices (new series)



Notes: FRE –First revised estimates, PE – provisional estimates
Source: Press Information Bureau of India (PIB), MoSPI, Crisil Intelligence

Per capita net national income of India further improved in FY25

India's per capita income, a broad indicator of living standards, rose from INR 63,462 in FY12 to INR 114,710 in FY25, logging 4.8% CAGR. Growth was led by better job opportunities, propped up by overall GDP growth. Moreover, population growth remained stable at ~1% CAGR.

Per capita net national income at constant prices

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23FE	FY24 FRE	FY25 PE
Per-capita NNI (INR)	63,462	65,538	68,572	72,805	77,659	83,003	87,586	92,133	94,420	86,034	94,054	100,163	108,786	114,710
Y-o-Y growth (%)		3.3%	4.6%	6.2%	6.7%	6.9%	5.5%	5.2%	2.5%	-8.9%	9.3%	6.5%	8.6%	5.4%

FE: Final Estimates, FRE: First Revised Estimates, PE: Provisional Estimates
Source: Provisional Estimates of annual GDP for 2024-25, MoSPI, Crisil Intelligence

2.2 Demographic factors support India's growth

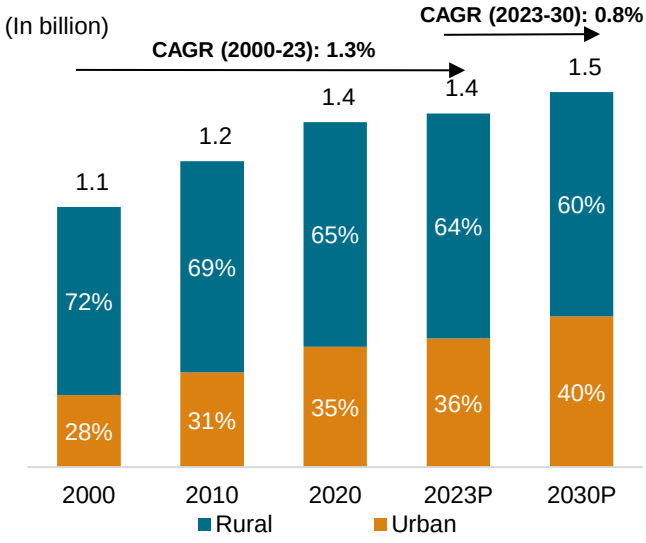
India is the largest economy in terms of population

India's population is estimated to have grown to ~1.4 billion in calendar year 2023, according to World Population Prospects 2024, compared with 1.1 billion in calendar year 2000, clocking an ~1.3% CAGR.

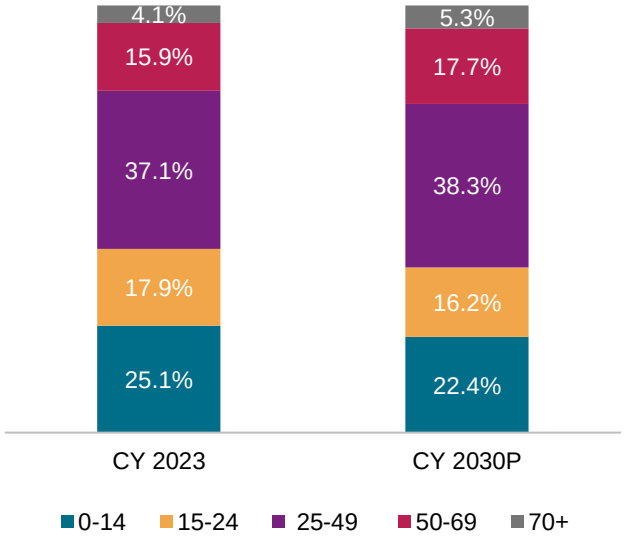
India's urban population has also been increasing over the years. The trend is expected to continue as economic growth increases. The country's urban population is projected to reach nearly 40% of the total population by calendar year 2030 from 36% in calendar year 2023, according to a UN report on urbanisation, as people from rural areas move to cities for better job opportunities, education and quality of life. Typically, migration can be of the entire family or a few individuals (generally an earning member or students).

Furthermore, the proportion of population aged 25-49 years as a percentage of total population stood at 37% in calendar year 2023 and is projected to increase to ~38% in calendar year 2030, indicating a strong potential for disposable income. Additionally, the young population aged below 25 years is projected to be 39% of the total population by calendar year 2030, contributing to economic growth.

India's population trajectory



Indian population by age group



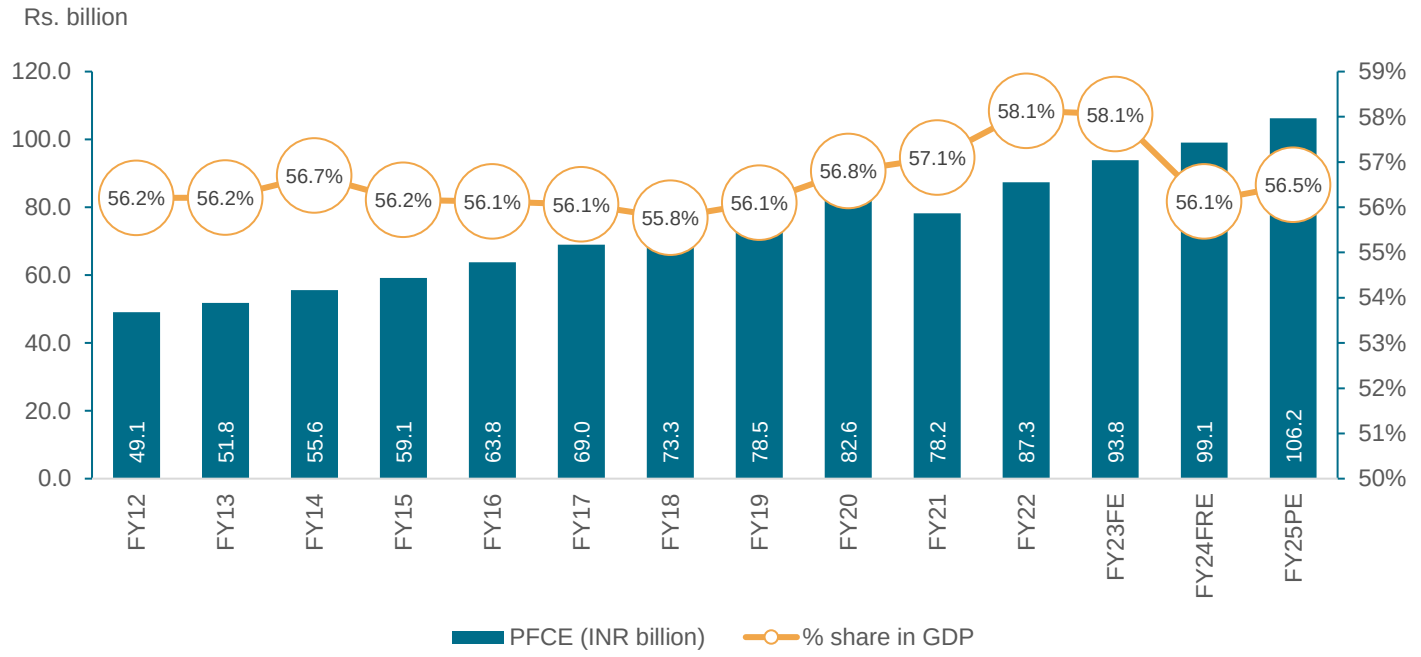
Note: P: Projected
Source: World Urbanization Prospects: The 2018 Revision United Nations Department of Economic and Social Affairs, World Population Prospects 2024, Crisil Intelligence

Private final consumption expenditure to maintain dominant share in India's GDP

Private final consumption expenditure (PFCE) has been the largest component of India's GDP historically. The PFCE CAGR growth of approximately 6.1% has been in line with India's GDP CAGR growth of 6.1% from FY2012 to FY2025 and was valued at Rs 106.2 trillion in FY25 compared to Rs 49.1 trillion in FY12.

Growth was led by healthy monsoon, wage revisions due to the implementation of the Central Pay Commission's (CPC) recommendations, benign interest rates, growing middle age population, low inflation and improving demand from rural India. As of FY25PE, PFCE is estimated to have increased to Rs. 106.2 trillion, registering a y-o-y growth of 6.1% and forming ~56.5% of India's GDP.

PFCE at constant prices



Note: FE: Final Estimates; FRE: First Revised Estimates; PE: Provisional Estimates;
Source: Provisional Estimates of GDP for 2024-25, MoSPI, Crisil Intelligence

2.3 Gross value added (GVA)

Healthy growth of gross value added in fiscal 2025 in line with GDP growth

As of FY25 GVA has reached to INR 171.9 trillion, up from INR 161.5 trillion in FY24, registering a y-o-y growth of ~6.4%. Financial, Real Estate & Professional Services had the highest contribution to GVA at ~23.8%, whereas construction GVA had the registered the annual growth at ~9.4%.

GVA at constant prices

INR trillion	FY12	FY19	FY20	FY21	FY22	FY23FE	FY24FRE	FY25PE	Share in GVA FY25	Annual growth in FY25
Agriculture, forestry and fishing	15.0	18.8	19.9	20.7	21.7	23.1	23.7	24.8	14.4%	4.6%
Mining and quarrying	2.6	3.3	3.2	2.9	3.1	3.2	3.3	3.4	2.0%	2.7%
Manufacturing	14.1	23.3	22.6	23.3	25.6	25.2	28.3	29.5	17.2%	4.5%
Electricity, gas, water supply & other utility services	1.9	2.9	3.0	2.9	3.2	3.5	3.8	4.1	2.4%	5.9%
Construction	7.8	10.3	10.4	10.0	11.9	13.0	14.4	15.7	9.1%	9.4%
Trade, Hotels, Transport, Communication & Services related to Broadcasting	14.1	25.4	26.9	21.5	24.8	27.9	29.9	31.8	18.5%	6.1%
Financial, Real Estate & Professional Services	15.3	27.1	29.0	29.5	31.2	34.6	38.1	40.9	23.8%	7.2%

INR trillion	FY12	FY19	FY20	FY21	FY22	FY23FE	FY24FRE	FY25PE	Share in GVA FY25	Annual growth in FY25
Public Administration, Defence & Other Services	10.3	16.3	17.3	16.0	17.2	18.4	20.0	21.8	12.7%	8.9%
Total GVA at constant prices	**81.1**	**127.3**	**132.4**	**126.9**	**138.8**	**148.8**	**161.5**	**171.9**	**100%**	6.4%

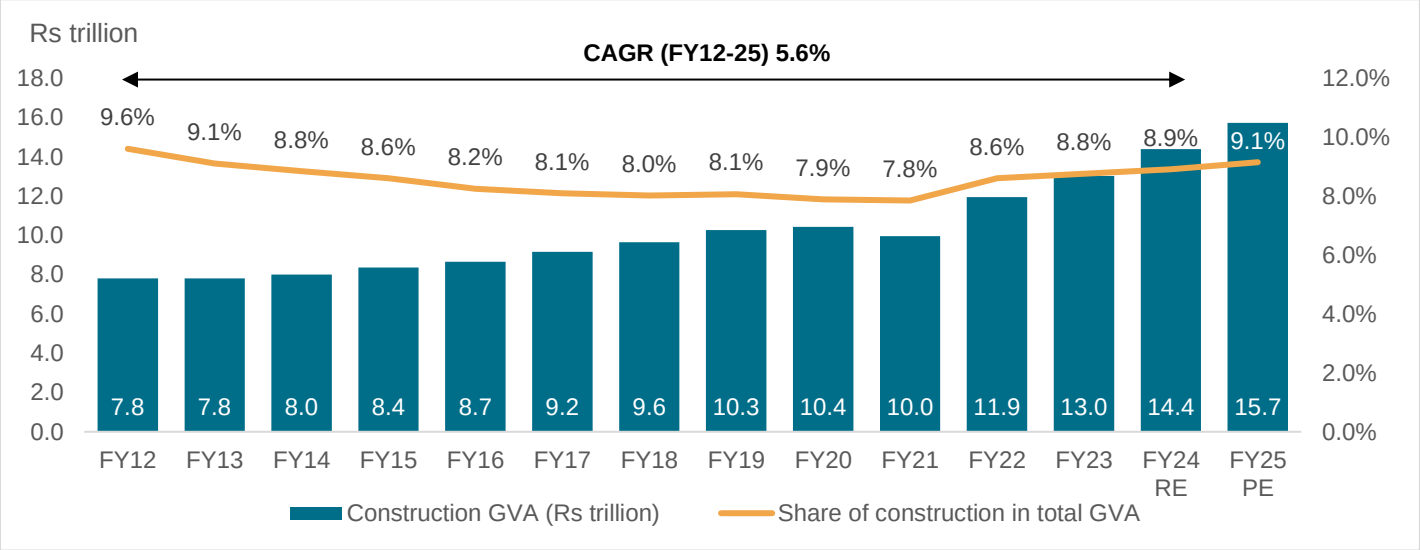
RE – revised estimate, PE- provisional estimates, FE- Final Estimates, FRE- First Revised Estimates
Source: MoSPI, Crisil Intelligence

Construction sector's share in overall GVA estimated to have risen further in fiscal 2025

Construction GVA is a critical indicator of economic activity since it represents the value generated by the construction sector, which includes activities related to building infrastructure, real estate and other construction projects.

In India, construction GVA increased to Rs 15.7 trillion in fiscal 2025PE from Rs 7.8 trillion in fiscal 2012, which was 5.6% CAGR. Several factors contributed to the growth, including economic expansion, the government's commitment to infrastructure development, particularly roads, railways and energy projects, and increase in foreign direct investment, which boosted private sector investment. Furthermore, increasing demand for affordable housing, driven by rising urbanisation and an expanding middle-class population, has also played a significant role in elevating construction GVA. However, in fiscal 2021, the country's GVA was under pressure amid challenges heaped by the pandemic. In fiscal 2022, though, the share of construction GVA in the overall GVA rebounded to 8.6%, increasing further to 8.8% in fiscal 2023. As per the revised estimates for fiscal 2024, construction GVA was Rs 14.4 trillion, thereby contributing to 8.9% in overall GVA.

Construction GVA



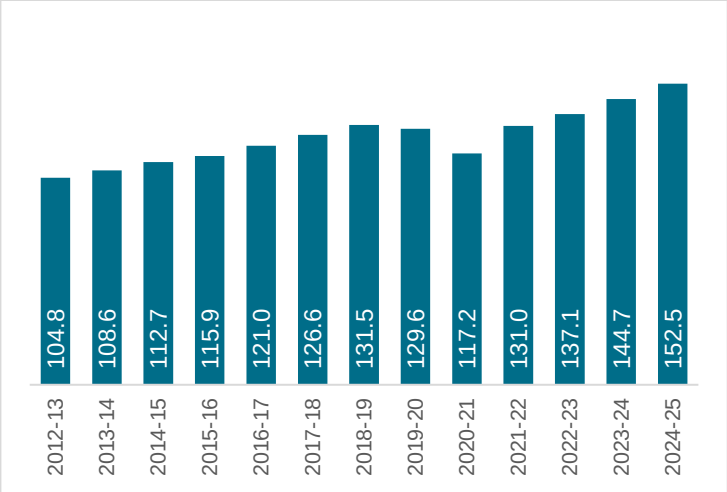
RE – revised estimate, PE – provisional estimates
Source: MoSPI, Crisil Intelligence

Manufacturing IIP increased to 152.5 in FY25

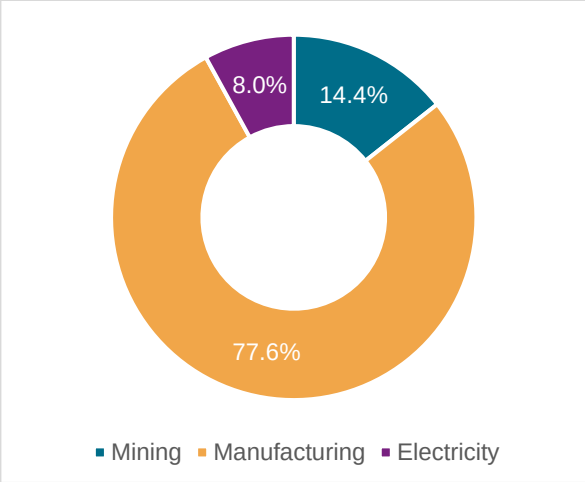
The manufacturing sector is a significant contributor to the country's overall industrial growth, with 78% weightage in the overall IIP as of FY25.

The Index of Industrial Production (IIP) for manufacturing rose to 152.5 in FY25 from 104.8 in FY13 driven by an acceleration in output growth in manufacturing especially in manufacturing of base metals and manufacturing of pharmaceuticals, medicinal chemicals and botanical products.

Manufacturing IIP (FY13 to FY25)



Weight of manufacturing in IIP (FY25)



Source: MoSPI, Crisil Intelligence

India's manufacturing value added as a % of GDP has potential to increase further

In calendar year 2023, India's manufacturing value added, expressed as a percentage of the country's GDP, stood at 12.8%. India flared better than countries UK (8.4%). However, India's manufacturing value as percentage of GDP was lower than the world average of 15.3%, suggesting scope for further improvement in expanding manufacturing industries in India.

Manufacturing value added as a percentage of GDP

Country	CY2018	CY2019	CY2020	CY2021	CY2022	CY2023
Bangladesh	20.8	21.2	20.6	21.2	21.8	22.3
Brazil	10.5	10.3	10.7	11.9	13.1	13.3
China	27.8	26.8	26.3	27.5	27.1	26.2
India	14.9	13.5	14.1	14.4	13.1	12.8
Malaysia	21.5	21.4	22.2	23.4	23.4	23.0
South Asia	14.9	14.1	14.5	14.8	14.1	13.8
United Kingdom	9.0	8.8	9.0	8.7	8.4	8.5
United States	11.3	11.0	10.5	10.6	N.A.	N.A.
World	16.4	16.0	16.0	16.5	15.8	15.3

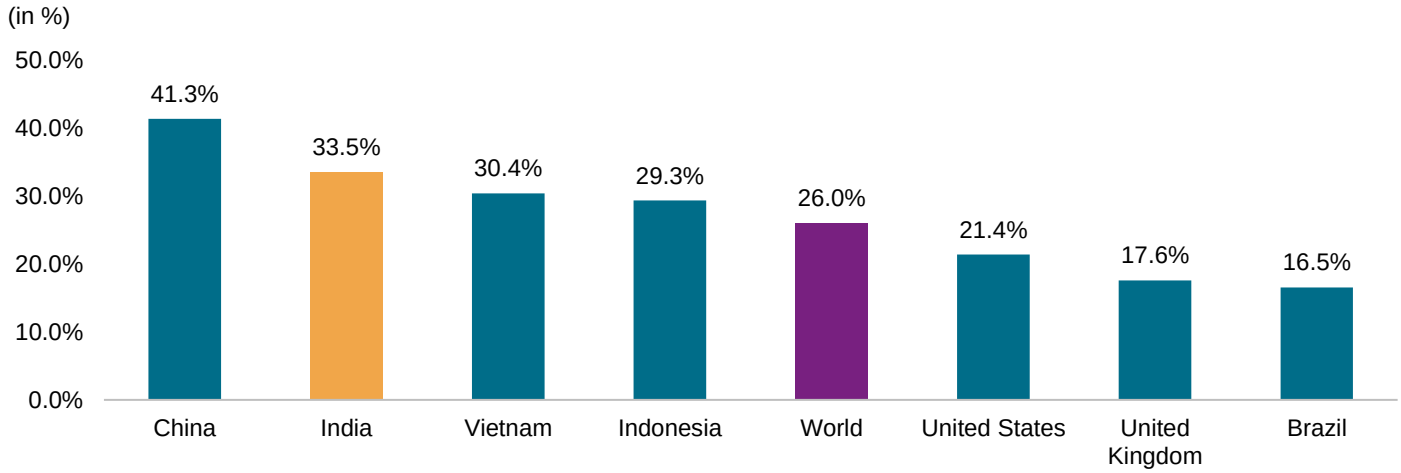
Source: World Bank, Crisil Intelligence

Increased infrastructure spending by the government, coupled with increase in the industrial capex driven by sectors like metal, pharmaceutical, oil and gas, emerging sectors, etc. is expected to have favourable effect on the manufacturing sector in India. This boost in manufacturing sector in India, will also indirectly increase the demand the pre-engineered buildings in the country.

India’s GFCF as percentage of GDP remains robust in fiscal 2023

Gross fixed capital formation (GFCF) measures the level of investment in creating physical assets and infrastructure, which is crucial to fostering economic growth and development. As of CY2023, India’s GFCF as a percentage of GDP was 33.51%, higher than the global average of 25.95%.

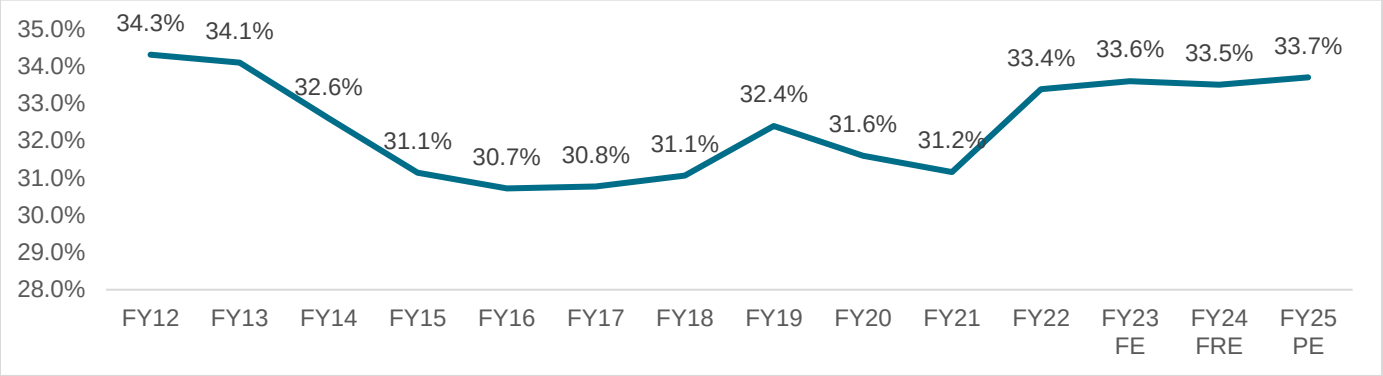
GFCF as a percentage of GDP (CY23)



*Note: *India’s GFCF as a percentage of GDP for fiscal 2024, according to provisional estimates of the MoSPI, has been considered for the above chart. According to the World Bank, India’s GFCF as a percentage of GDP stood at 30.8% in fiscal 2024. GFCF includes land improvements (fences, ditches, drains, and so on), plant, machinery equipment purchases, along with construction of roads and railways. It also includes the construction of schools, offices, hospitals, private residential dwellings and commercial and industrial buildings.*
Source: World Bank, Crisil Intelligence

This is a sharp reversal from fiscals 2020 and 2021, when the GFCF had fallen to 31.6% and 31.2% of GDP, respectively, as investments in physical assets were impacted by disruptions in supply chains and business operations owing to the pandemic. It, however, recovered to 33.4% of GDP in fiscal 2022 and 33.6% of GDP in fiscal 2023, attributed to factors such as easing of pandemic-related restrictions, the government's focus on infrastructure development, economic reforms and increase in urbanisation, which boosted demand for affordable housing. As per the provisional estimates for fiscal 2025, GFCF as % of India’s GDP to remain at 33.7%.

GFCF as % of India's GDP (fiscal 2012 to 2025)

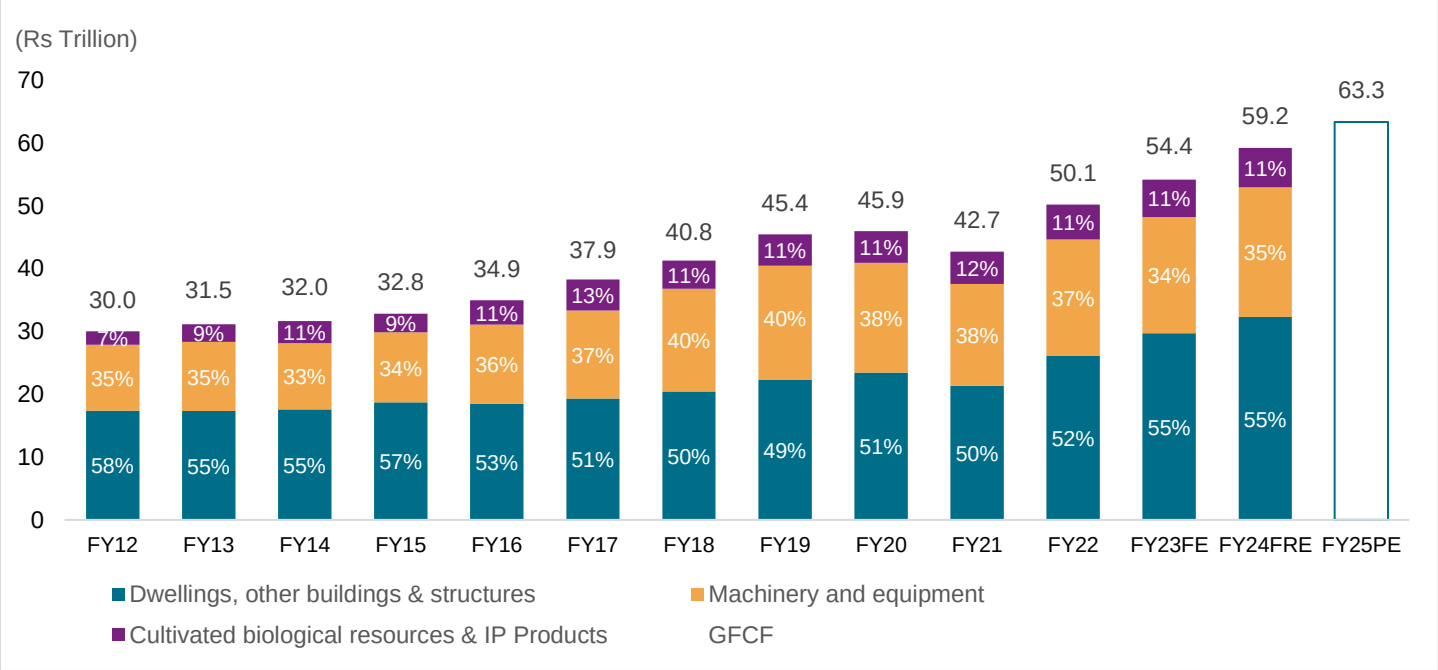


Note: FE: Final Estimates; FRE: First Revised Estimates; PE: Private Estimates;
Source: Provisional Estimates of Annual GDP for 2024-25, MoSPI, Crisil Intelligence

The rise in fiscal 2022 was largely because of dwellings, other buildings and structures, which had a significant ~55% weightage in GFCF. Key factors contributing to the vertical's dominant share were economic growth, government's commitment to infrastructure development, particularly roads, railways, energy projects and increase in FDI, which boosted private sector investment. Further, a growing middle class and increasing urbanisation boosted the demand for housing and commercial properties, thereby stimulating investment in the construction sector, also aided GFCF.

According to provisional estimates for fiscal 2025, GFCF further increased to Rs 63.3 trillion, on-year growth of 5.9%.

GFCF trend in India



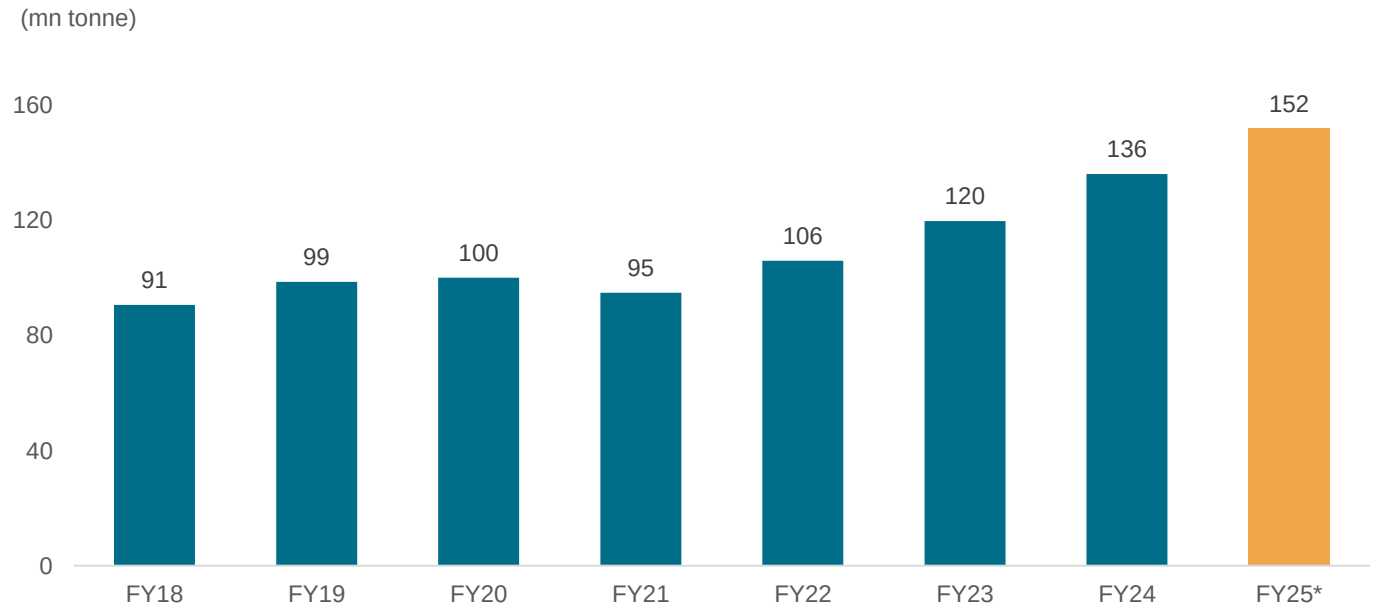
FE: Final estimates, FRE: First revised estimates, PE: Provisional estimates
Source: MoSPI, Crisil Intelligence

India steel consumption is expected to rise on investments in infrastructure

Finished steel consumption grew from 91 million tonne (MT) in fiscal 2018 to 152 MT in fiscal 2025 owing to robust demand from allied sectors and the government's capital spending drive. However, demand had declined in fiscal 2021 to 95 MT from 100 MT in fiscal 2020 following the onset of the pandemic.

The government's initiatives, such as Make in India, Smart Cities Mission, Production Linked Incentive (PLI) and Pradhan Mantri Awas Yojana, have supported steel demand during the period.

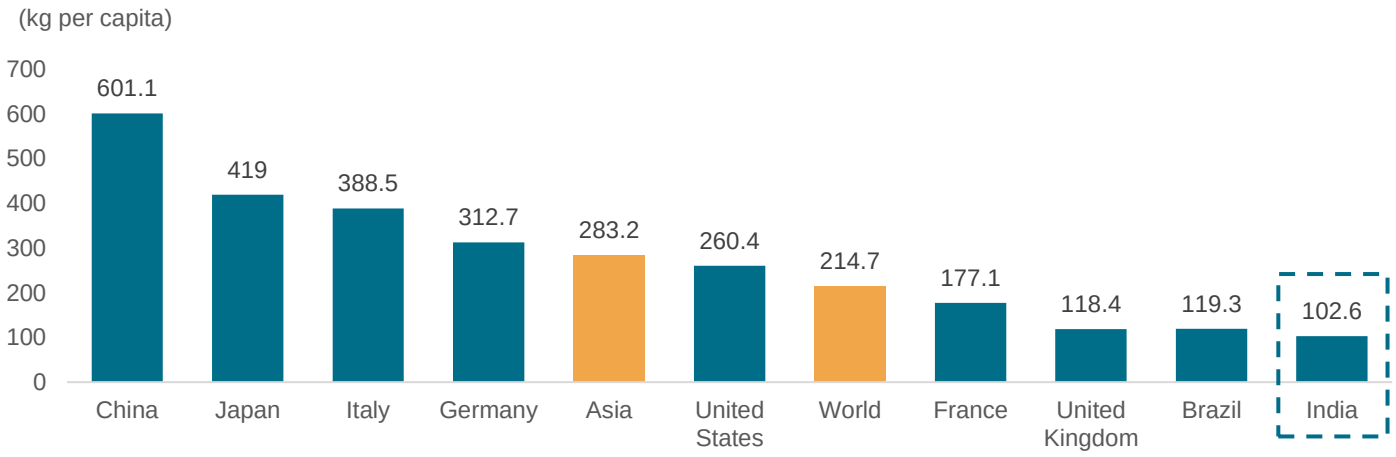
Finished steel (alloy/stainless + non-alloy) consumption in India



*Note :P Provisional**
Source: Ministry of Steel annual report, Joint Plant Committee (JPC), Crisil Intelligence

However, India has considerable scope to enhance steel usage across various sectors. As of 2024, the country’s annual per capita apparent steel consumption was 102.6 kg per annum vs. the world’s average of 214.7 kg.

Apparent steel use (kg) per capita in 2024



Source: World Steel Association, Crisil Intelligence

Construction occupies dominant position in steel

Steel demand from building and infrastructure	
World average	**India**
	
50-60%	**60-70%**

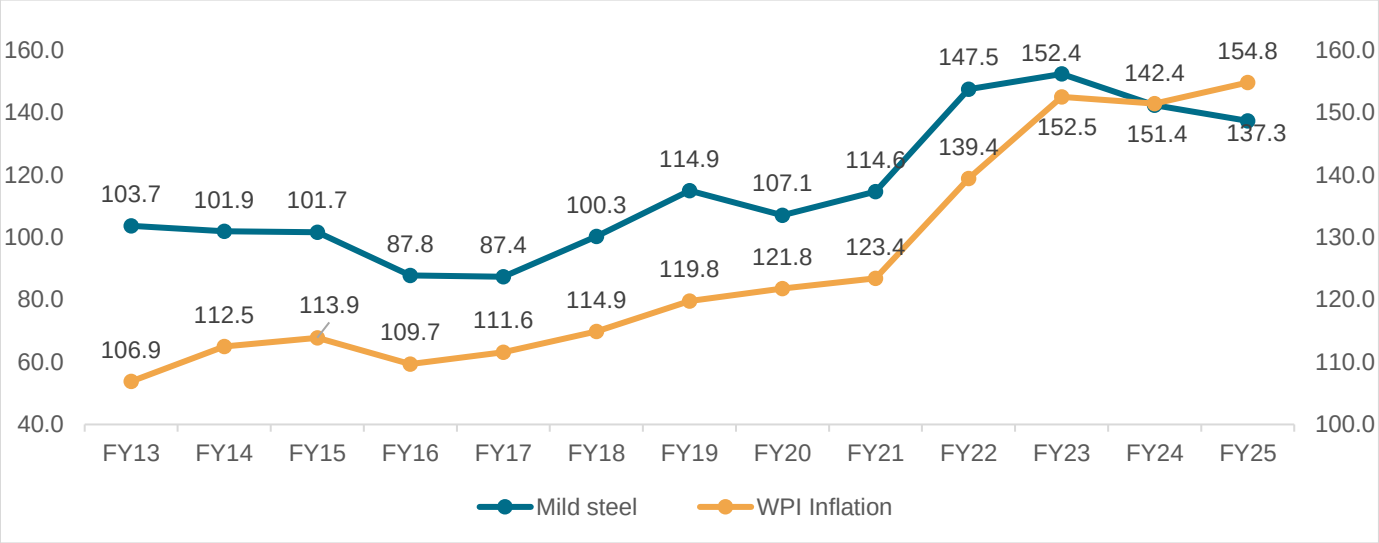
Note: World average is for calendar year 2024 and includes demand from other transport, corresponding number for India is of fiscal year 2024
Source: World Steel Association, Ministry of Steel Annual report FY25, Crisil Intelligence

In India, steel demand from the building, construction and infrastructure sectors constituted 60-70% of the total domestic steel demand in fiscal 2025. This is ahead of with the overall global consumption patterns, where building and construction (including other transport) accounted for 50-60% of the total steel demand in CY2024.

Steel inflation cooled down further in fiscal 2025

Factors like muted global demand, geopolitical issues, cheaper imports and better realisations in the domestic market helped in further price correction in Financial Years 2025. This price correction in steel had been a favourable development for suppliers in the pre-engineered building (PEB) sector, given that steel constitutes a significant input cost for PEB construction.

Trend in mild steel prices –long and flat products



Source: Office of Economic Advisor, Crisil Intelligence

2.4 Major government initiatives to boost infrastructure in India

Growth driver	Description
National Infrastructure Pipeline (NIP)	• The National Infrastructure pipeline (NIP) aims to improve project preparation and attract investments in infrastructure. It has positively impacted the construction industry through a projected infrastructure investment of around Rs 111 trillion over FY20-25, to build robust infrastructure and boost the economy by increasing employment opportunities and enhancing living standards. The sectors like energy, roads, urban infrastructure, railways have a major share in the NIP. • NIP was launched with 6,835 projects and has expanded to capture over 9,288 projects in calendar year 2023 with a total project outlay of Rs 108.9 trillion between 2020-2025. Transport (42%), energy (25%), water & sanitation (15%) and social infrastructure (3%) sectors amount to around 85% of the projected infrastructure investments under NIP.
National Monetisation Pipeline (NMP)	• Union Minister for Finance and Corporate Affairs launched the asset monetisation pipeline of Central ministries and public sector entities: 'National Monetisation Pipeline (NMP Volumes 1 & 2)'. NITI Aayog has developed the pipeline, in consultation with infrastructure line ministries, based on the mandate for 'Asset Monetisation' under Union Budget 2021-22. NMP estimates aggregate monetisation potential of Rs 6.0 trillion through core assets of the Central Government, over a four-year period, from FY22-25. The estimated value corresponds to ~14% of the proposed outlay for Centre under NIP (Rs 43 trillion). The top 5 sectors (by estimated value) capture ~83% of the aggregate pipeline value. These top 5 sectors include: Roads (27%) followed by Railways (25%), Power (15%), oil & gas pipelines (8%) and Telecom (6%).
PM Gati Shakti	• PM Gati Shakti is essentially a digital platform that has brought together 16 ministries, including railways and roadways, for integrated planning and coordinated implementation of infrastructure connectivity projects. The multi-modal connectivity will provide integrated and seamless connectivity for movement of people, goods and services from one mode of transport to another. It will facilitate last mile connectivity of infrastructure as well as reduce travel time. PM Gati Shakti incorporates the infrastructure schemes of various ministries and state governments, such as Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN, etc. Economic zones such as textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters and agri zones are covered as well to make Indian businesses more competitive.
PLI scheme	• The PLI scheme was introduced by the Indian government to boost domestic manufacturing, attract investments, and enhance exports by offering incentives. With an outlay of Rs 1.97 trillion (over US$24 billion), the PLI Schemes focus on 14 critical sectors to enhance the country's manufacturing prowess, foster technological advancements, and elevate India's position in global markets. These sectors are aligned with the government's goal of strengthening domestic production and expanding exports, contributing to the broader vision of Atmanirbhar Bharat. • The purpose of the PLI Schemes is to attract investments in key sectors and cutting-edge technology; ensure efficiency and bring economies of size and scale in the manufacturing sector and make Indian companies and manufacturers globally competitive. These schemes have the potential of significantly boosting production, increase manufacturing activities and contribute to economic growth over the next five years or so. As of August 2024, actual investments totalling Rs 1.5 trillion have been realized. These investments have already led to a boost in production and sales, amounting to Rs 12.5 trillion, while directly and indirectly generating approximately 9.5 lakh jobs.
Bharatmala Pariyojana	• Bharatmala Pariyojana is an umbrella project of the central government since 2015, that aims to improve efficiency in the roads sector. It is expected to supersede the National Highways Development Project (NHDP) and envisages the construction of 65,000 km of highways under the following categories: national

Growth driver	Description
	corridor (north-south, east-west, and golden quadrilateral), economic corridor, inter-corridor roads, and feeder roads. As per the ministry, Bharatmala, along with the schemes currently undertaken, could require a total outlay of Rs 6.9 trillion. • Phase-I of the scheme envisages development of about 24,800 km length of national highways/roads, plus residual 10,000 km of NHDP between FY18-22. Awarding under Bharatmala has begun from FY18 and Crisil expects it will stretch till FY25 for Phase 1

Source: Budget documents, Crisil Intelligence

Government's infra push to boost manufacturing sector

The trade war between the US and China since 2018 and the disruption in global supply chains during the pandemic, due to supply concentration in few countries such as China, forced the West to look for other manufacturing destinations such as India, Vietnam, Malaysia and Mexico. Vietnam, Taiwan and Malaysia have benefitted by this more than India due to their integration with global supply chains.

Nonetheless, India is also a suitable option for manufacturing as it offers several advantages such as a large local market, young working population group, expanding middle class and cheaper labour.

To integrate further with global supply chains (mainly the US), India has to improve on two parameters: trade cost reduction and investment facilitation. On the cost front, India has ramped up its logistical efficiency over the past decade. The country has risen the ranks from no. 54 in a list of 139 countries in 2014 to 38 in 2023, thanks to the government's investments in trade-related soft and hard infrastructure.

Investment facilitation includes measures to increase and stabilise foreign investments in the country. In this context, schemes such as the PLI, increase in FDI limit under Atmanirbhar Bharat Abhiyan, etc facilitate high quality foreign investments by creating a market-linked incentive structure for firms.

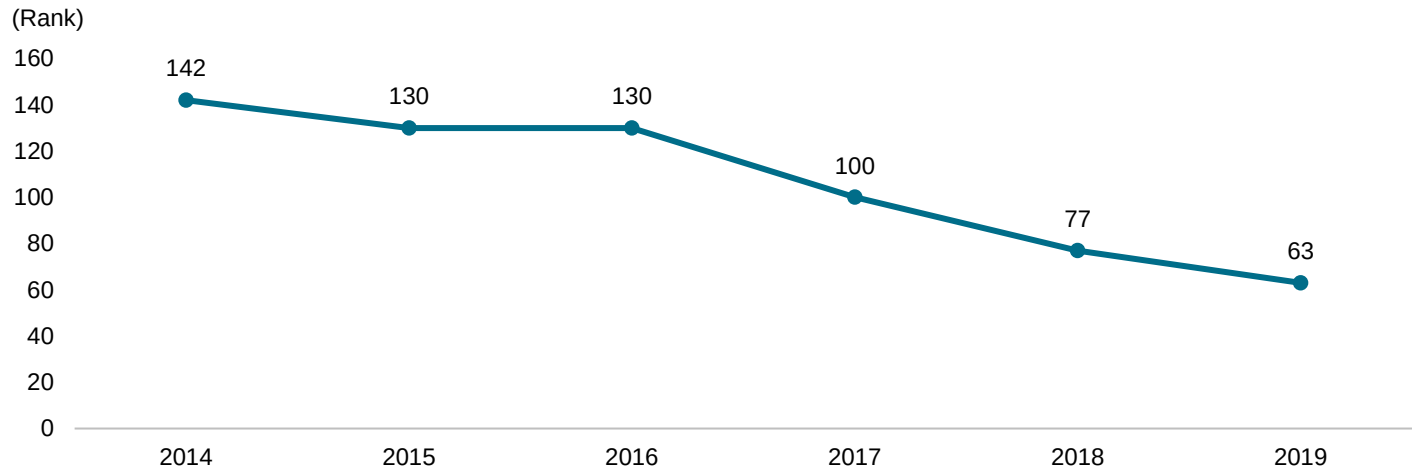
In the medium term, India's value chain integration with the West would target areas such as renewables and high-end technology such as artificial intelligence, semiconductors and next-generation telecommunications. These areas have been included in agreements such as the Australia-India free trade agreement (FTA) and US-India Clean Energy Partnership. Trade contours in these areas have already begun to take shape. For instance, looking at the harmonised system (HS) codes for green technology (such as solar water heaters, waste recycling machines and wind turbines), India's exports to the US have risen by $1 billion since 2018. Major US and European renewables manufacturers such as First Solar, Vesta and Scatec have begun operations in India to seize the green transition opportunity.

India's Ease of Doing Business ranking improves

Systematic and targeted efforts to reduce the number of processes and rationalise costs have improved India's rank to 63 in Doing Business Report 2020 (published in October 2019) from 142 in Doing Business Report 2015 (published in October 2014). The key facilitators were decrease in the number of procedures and time taken for obtaining construction permits in India (184 in 2014 to 27 in 2019) and shorter duration to get electricity connection (137 in 2014 to 22 in 2019).

Consequently, India improved its rank by 79 positions over 2014-2019, and it continues to be first among South Asian countries compared with 6th position in 2014.

India's ranking in World Bank's Ease of Doing Business



Source: World Bank, PIB, Crisil Intelligence

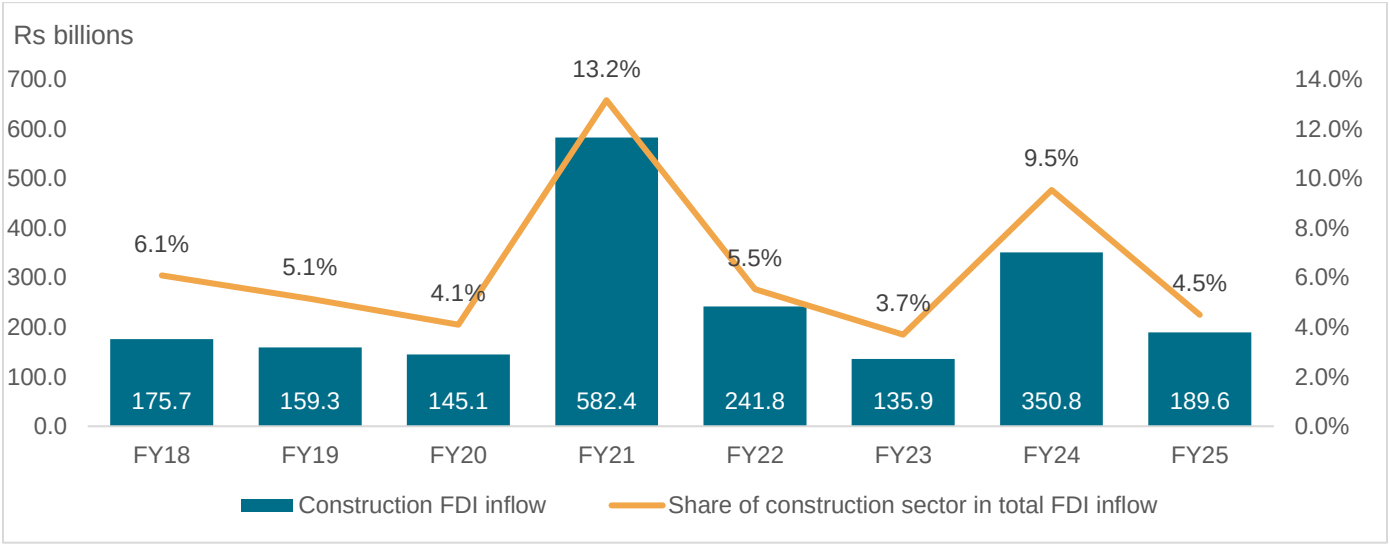
2.5 Construction sector

Construction among top 10 sectors to attract Foreign Direct Investment

The construction sector is a vital component of the Indian economy, with a significant multiplier effect on the country's growth. The government's efforts to promote ease of doing business have led to an increase in Foreign Direct Investment (FDI) inflows in the sector. As a result, FDI has played a crucial role in the development of the construction industry in India, with the sector attracting significant investments from foreign investors.

The Indian government's decision to allow 100% FDI in the construction development sector under the automatic route in 2005 has been a key factor in attracting foreign investment. The sector has seen significant FDI inflows, with total FDI in the construction segment reaching a peak of INR 582 billion in FY21. Notably, the total FDI in the construction segment has accounted for around 5-10% of the total FDI inflow into the country.

FDI inflow in construction (infrastructure) sector of India



Source: DPIIT, Crisil Intelligence

Budgetary capex for infrastructure ministries is Rs 10.7 trillion, up 11.6% from fiscal 2025

The budgetary capex for infrastructure ministries is Rs 10.7 trillion, up 11.6% from fiscal 2025RE. This increase aligns with the government's emphasis on infrastructure development, as seen in the rising budget allocations aimed at achieving the goals outlined in the National Infrastructure Pipeline (NIP).

The key announcements for infrastructure section in the Budget for fiscal 2026 are as follows:

- The budgetary capex for infrastructure ministries is Rs 10.7 trillion, up 11.6% from fiscal 2025RE
- Each infrastructure-related ministry will come up with a three-year project pipeline that can be implemented through the public-private partnership (PPP) mode. States are also encouraged to do so
- To support states in infrastructure development, an outlay of Rs 1.5 trillion is proposed for 50-year interest-free loans as capex and incentives for reforms
- In the second phase of the asset monetisation plan, the government aims to generate Rs 10 trillion with a pipeline of assets to be monetised between fiscals 2025 and 2030

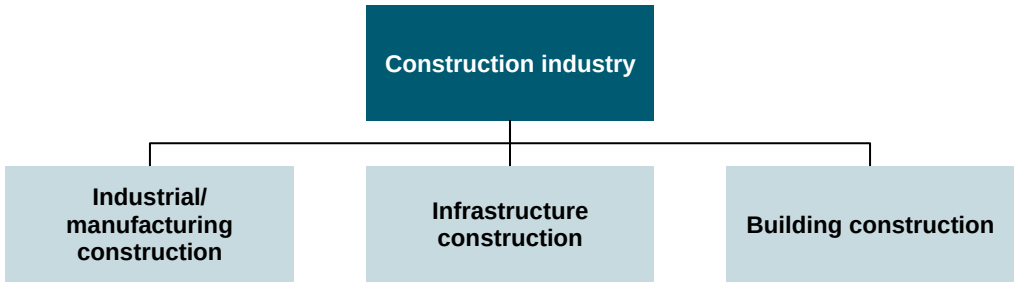
Budget allocation for infrastructure sector

Rs trillion	FY24	FY25RE	FY26BE
Budgetary allocation for infrastructure ministries	8.5	9.5	10.7

Note: RE- Revised estimates, BE-Budgeted estimates
Source: Budget documents, Crisil Intelligence

The construction sector can be broadly classified into building, industrial/manufacturing and infrastructure construction.

Overview of construction sector



Source: Crisil Intelligence

Investments in construction sector

Capital expenditure in construction rose 7% on-year to Rs 12.7 trillion in fiscal 2025, led by the infrastructure segment. This rise is in keeping with the government's focus on infrastructure, which led to higher capex allocations in the central and state budgets to create the infrastructure outlined in the NIP.

The construction sector is projected to grow at 6-8% in fiscal 2026 and the infrastructure segment is set to have a major contribution to this rise, given the increase in investments by central and state governments, and the pace of roll-out of initiatives such as the NIP, NMP and Gati Shakti. This push from the infrastructure segment is likely to be stay over the medium to long term. Private investments are expected to play a crucial role in sustaining the growth trajectory.

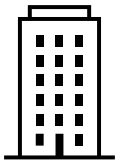
Overall, Crisil estimates cumulative construction investments of ~Rs 51 trillion over fiscals 2021-25 and this is expected to increase to Rs ~75-80 trillion over fiscals 2026-30.

Share of infrastructure segment is estimated to increase further

FY21-25: **Rs 34 trillion**
Projected growth: **1.5x-1.7x**
FY26-30P: **50-55 trillion**

Infrastructure

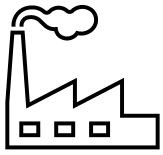
- Infrastructure investments are seen growing faster than the other two sectors due to the government's push through the NIP, NMP and the Gati Shakti initiatives. Construction investments in this sector are expected to be ~Rs 50-55 trillion between fiscals 2026 and 2030, up from Rs 34 trillion between fiscals 2021 and 2025.
- The share of infrastructure projects is expected to stabilise in the ~67-70% range in five years (fiscals 2025-30). The central government's focus on roads, urban infrastructure and railways will boost infrastructure investments. Roads, railways, irrigation and power sectors will continue to drive the bulk of these investments.



FY21-25: **Rs 13 trillion**
Projected growth: **1.4x-1.5x**
FY26-30P: **18-19 trillion**

Building

- Crisil Intelligence estimates the building and construction sector to grow at 4-6% in fiscal 2025. The real estate segment is likely to see a demand slowdown, along with a rise in inventory in key cities. The increase in execution of deferred projects and government schemes such as the PMAY is expected to provide strong support to the sector.
- Over fiscals 2026-30, the sector is expected to rise to Rs 18-19 trillion from Rs 13 trillion in the period between fiscals 2021 and 2025.



FY21-25: Rs **4 trillion**
Projected growth: **1.0x-1.2x**
FY26-30P: **4.0-5.0 trillion**

Industrial

- Construction spends in fiscal 2026 likely to rise 3-4% with help from oil and gas, and metals. Fiscal 2025 had a high base anyway because of deferred investments from fiscals 2021 and 2022, and a rise in capex investments from the PLI scheme.
- Based on an analysis of eight key sectors, Crisil Intelligence estimates construction investment in the industrial sector at Rs 4-5 trillion over fiscals 2026-30, compared with Rs 4 trillion spends in fiscals 2021-25. The rise in investment is projected due to the inclusion of the PLI scheme in the capex investments of the industrial sector. Crisil have only considered 3 capex-intensive sectors in case of PLI scheme, viz., auto and auto components, textiles and specialty steel for inclusion in our estimates.

Note: A - Actual, P – Projected
Infrastructure vertical includes warehouse
Building construction includes residential, commercial and non-commercial verticals
Source: Crisil Intelligence

Warehouses

Warehouses refer to storage facilities where the goods are stored until they are dispatched to the customers/end-user. The time lag between production and consumption of goods necessitates to have warehouses for temporary storage of goods. For instance, certain goods are produced only during a particular season but consumed throughout the year. Similarly, certain goods are produced throughout the year but demanded only during a particular season. Thus, warehouses play an important role in maintaining the quality of the product and minimize wide fluctuations in the price of goods.

Additionally, value-added activities such as packaging, sorting, grading, kitting, bar coding, reverse logistics etc. can be carried out at the warehouse. Modern warehouses equipped with latest IT systems can also track inventory, order management, product data management, storage management etc.

Furthermore, CRISIL's analysis indicates that the implementation of the Goods and Services Tax (GST) led to consolidation of the warehousing sector largely driven by the consumer durables and fast-moving consumer goods (FMCG) industries. Post GST, companies were realigning their supply chains for market efficiencies and not tax efficiencies anymore. Large format, technology enabled warehouses are preferred by corporates leading to multi-user spaces with cost and scale efficiencies for Third Party Logistics (3PL) players who also provide value-added services.

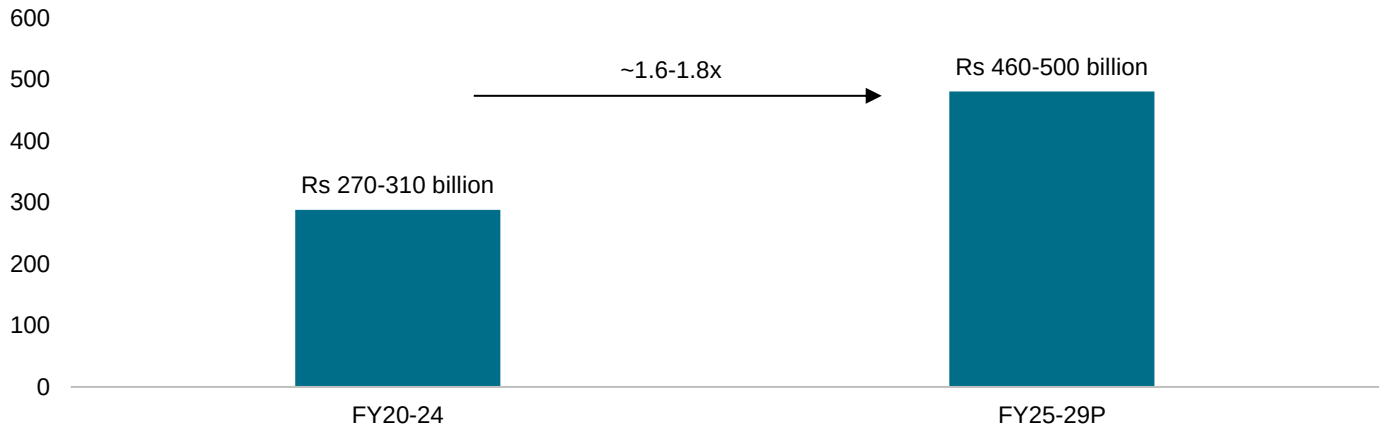
GST triggered consolidation of fragmented warehousing operations into fewer and larger warehouses. Advancements in technology, particularly automation are pushing up need for end-to-end logistics services. As a result, the Indian warehousing segment is witnessing a favourable structural shift with a rise in demand for modern warehousing. 3PL and e-commerce players have gained significant share in occupied stock over the past 5 years, and they are expected to drive future growth in the organised warehousing sector, which would contribute to the demand of pre-engineered steel structures.

Construction spends in warehouse segment to increase between FY25-29

Crisil projects construction investments in the warehousing (agricultural and industrial) and cold-storage (single- and multi-commodity) sectors to rise to Rs 460-500 billion over the FY25-29 on expectations of increased demand. Industrial warehousing is likely to account for 85-90% of total investments. Investments in the sector of multipurpose cold storages are expected to rise due to their faster return on investment compared to single-commodity storages. The multipurpose facilities offer the advantage of accommodating various types of perishable goods simultaneously, ensuring a better capacity utilization, thereby making it a more economically viable option.

Over the long term, the annual demand for Grade A and B warehouses in top eight Indian cities is expected to log 11-16% CAGR between FY25-29. The annual supply is also expected to rise at the same rate.

Construction investments warehousing and cold storage



Note: The numbers in the above chart represents cumulative investments for the specific period
Source: Crisil Intelligence

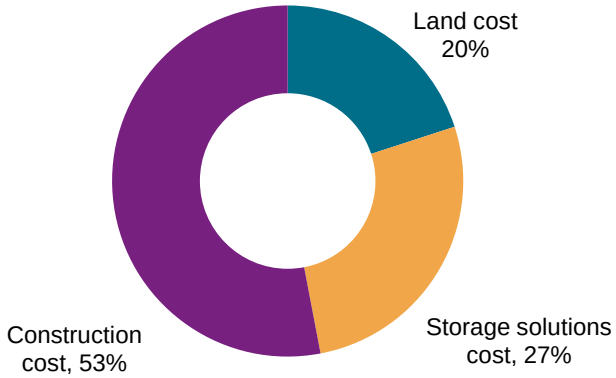
Overall, pursuant to the change of the indirect tax regime, there is a huge demand for warehouses. Additionally, the entry of several retail giants in India and increased penetration of e-commerce players is expected to lead the demand for

Grade A warehousing infrastructure and upgradation of old-style warehousing into Grade A modern warehousing in India, which would contribute to the demand of pre-engineered steel structures.

Furthermore, Crisil Intelligence also expects the warehousing industry to evolve structurally over the long term – led by automation and investment in technology and reduced dependence on labour. Most end-user industries are also expected to automate their supply chains and warehouse management services.

Warehousing project cost

Warehouse cost breakup



The warehousing project cost comprises of land, construction, and storage solution costs. Land cost, which comprises the share of 27% in the overall cost, differs significantly from one location to another on account of the demand-supply scenario, infrastructure quality and connectivity via different modes of transport in a particular location.

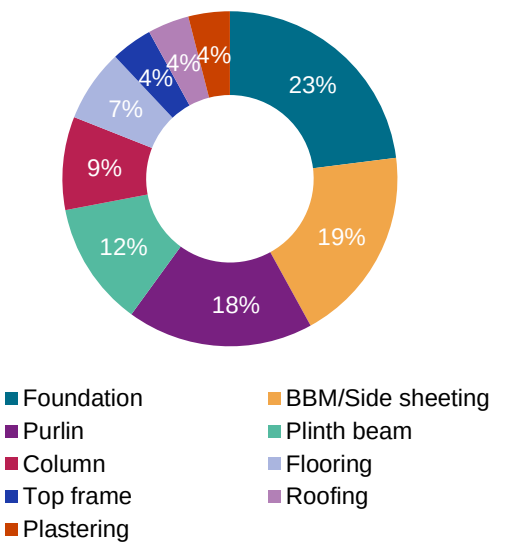
Whereas, construction cost, which accounts for the highest share of more than 50%, is relatively similar across locations.

Source: Industry interaction, Crisil Intelligence

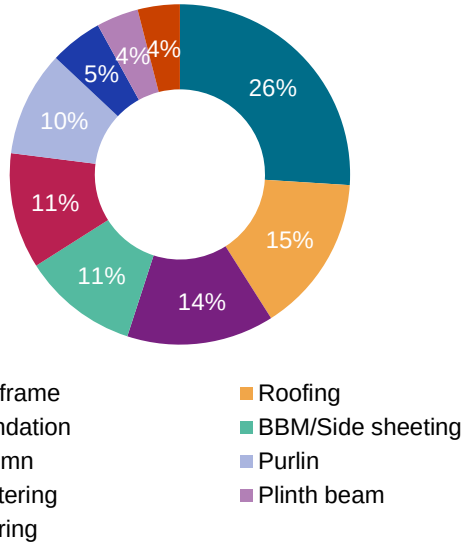
Within construction costs, the cost of setting up a warehouse depends largely on the type of warehouse, i.e., pre-engineered building (PEB) or reinforced cement concrete (RCC) structure. The primary difference is the construction of roof which includes roofing and top frame cost. In RCC, cement as well as steel rods are used in conventional buildings, whereas steel structures are used in PEB, which gives them higher clear height, larger clear span and faster construction timelines. Considering the complete life cycle of a warehouse, PEB is more economical than an RCC building largely on account of extensive usage of steel which requires less maintenance and has scrap value. Also, the longevity of steel roofs is high, and they are not prone to leakages, while RCC roofs require significant labour and time for execution.

Construction cost components breakup

PEB cost breakup



RCC cost breakup



Source: Industry interaction, Crisil Intelligence

3PL segment estimated to be the largest driver of industrial warehousing demand in FY25

Robust demand is anticipated from third-party logistics (3PL) providers, particularly in sectors such as electronics, white goods, retail, and fast-moving consumer goods (FMCG). These sectors are leveraging 3PL services to optimise inventory management and reduce costs. Overall, the annual demand in warehousing, driven by e-commerce, Q-commerce and 3PL end-use sectors, is expected to contribute significantly, accounting for 55-60% of the overall demand.

PEB warehouses along with hub and spoke model gained prominence post GST implementation

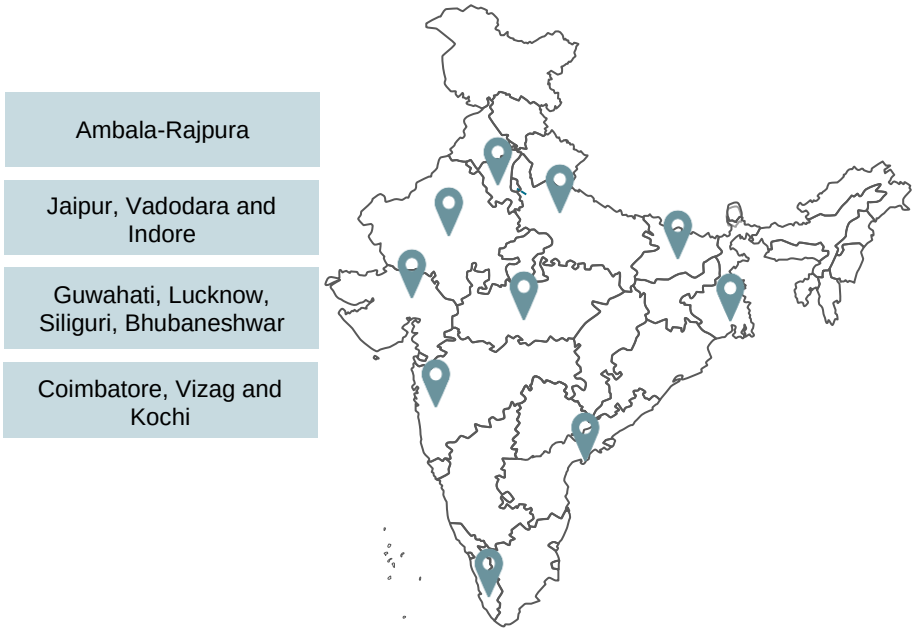
The warehousing industry in India is fragmented with unorganised players occupying a majority share in volume terms. They have smaller reinforced cement concrete (RCC) warehouses with small shelves, build small warehouses and have an asset heavy strategy. Typically, they do not provide value-added services such as packaging, labelling, inventory management, etc.

In the pre-GST scenario, players used to prefer setting up warehouses in every state to save on inter-state taxes.

But in the past 4-5 years, the industry has started gaining traction due to implementation of GST; many large players have started investing in huge, modernised warehouses which are PEB structures. This was on account of end-user industries moving towards a hub-and-spoke model as the need to establish warehouses in each states diminished. Larger PEB warehouses of 1,00,000-2,00,000 sq. ft are being set up as hub warehouses and smaller warehouses of 20,000-30,000 sq. ft. which would serve as the key ‘spoke’ warehouses.

Realignment towards the hub-and-spoke model is expected to result in major business opportunities for organised 3PL players operating large-sized warehouses in key geographies. These players not only provide huge modernised PEB storage but also warehouses equipped with racking and storage solutions, forklifts and reach trucks, and value-added services. The 3PL players also have an asset light model. They take warehouses on lease from warehousing developers which, in turn, acquire the land and construct.

Other smaller hubs are emerging largely due to e-commerce led demand



Source: Crisil Intelligence

Multiple smaller hubs are emerging largely due to increased demand from end use segments like ecommerce. Additionally, increased consumption from non-metro cities, demand for same day delivery, as well as lower land and operational costs in non-metro cities are serving as major growth drivers for the smaller hubs.

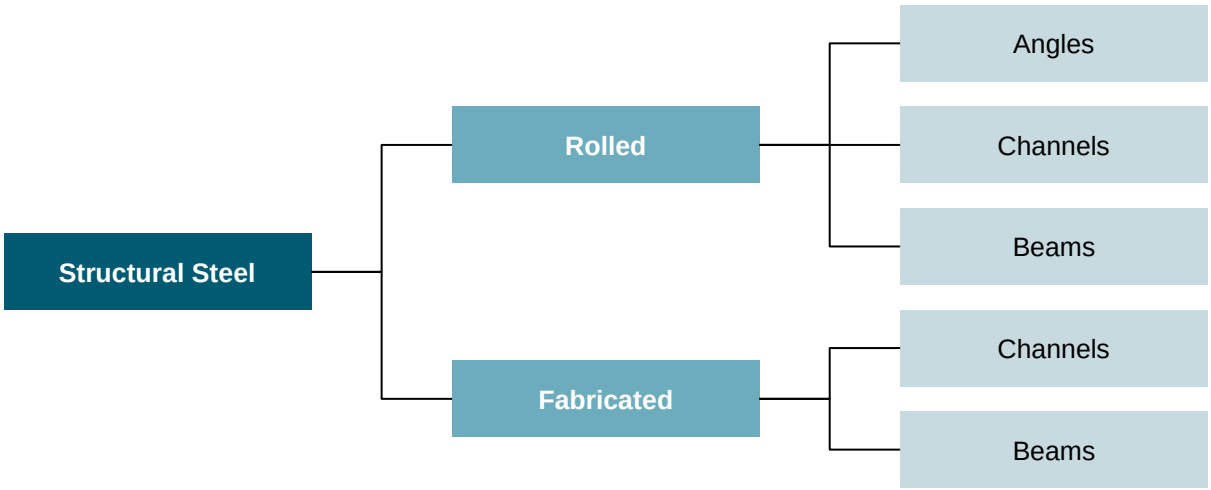
3 Assessment of structural steel industry

3.1 Overview of structural steel industry

Structural steel is a high-grade variety of the metal with applications in various end-use industries, including power and construction. In construction, use of structural steel not only helps in speeding up the construction, but it also helps in increasing the durability and structural stability of the building. Steel's high strength to weight ratio allows for lighter, more efficient structures, thereby increasing the load bearing capacity of buildings in cost efficient manner due to reduced material costs. Additionally, structural steel can also be fabricated into various forms and shapes which offers flexibility in construction.

Structural steel can be broadly classified into rolled and fabricated. Rolled steel, which dominates the structural steel space, is cast in continuous moulds without any joints/ breakages. It can be further classified into channels, beams and angels depending on the mould and end usage. Fabricated steel includes components that are created through cutting or bending of continuous steel to achieve tailored shapes and sizes; it can be bifurcated into channels and beams. Compared with rolled steel, the fabricated variety offers more flexibility in shapes and sizes. However, it is to be noted that the fabricated process is more time consuming and expensive than rolled due to additional labour involved for customisation.

Breakdown of structural steel



Source: Crisil Intelligence

Additionally, based on project requirement, channels and beams can be segregated based on their shapes, like I-beams, C-beams, etc. Depending on the requirements of the project, structural steel can either form the main component of the building or can be used only as a reinforcement agent in the form of beans, frames, bars, etc.

The use of structural steel in the construction industry is popular due to the inherent benefits such as strength, good ductility, sustainability, etc. Using structural steel in conjunction with reinforced concrete (RCC) or on a standalone basis strengthens the building without increasing the cost much. Furthermore, use of steel in construction is more environmentally friendly than RCC because of recyclability. However, steel can also make the structure susceptible to corrosion/rust. Hence, structural steel is usually coated/treated with certain chemicals through processes such as galvanisation to make it corrosion resistant.

Rolled steel is preferred in the residential segment because of higher strength, while commercial set-ups use hollow section pipes because of aesthetics and better strength. Fabricated steel is also finding more acceptability, owing to higher design flexibility with customised sizes in the infrastructure segment. Hence, increased government investments in infrastructure segments (roads, railways, etc) also positively contributed to the demand for structural steel.

3.2 Market size of structural steel industry

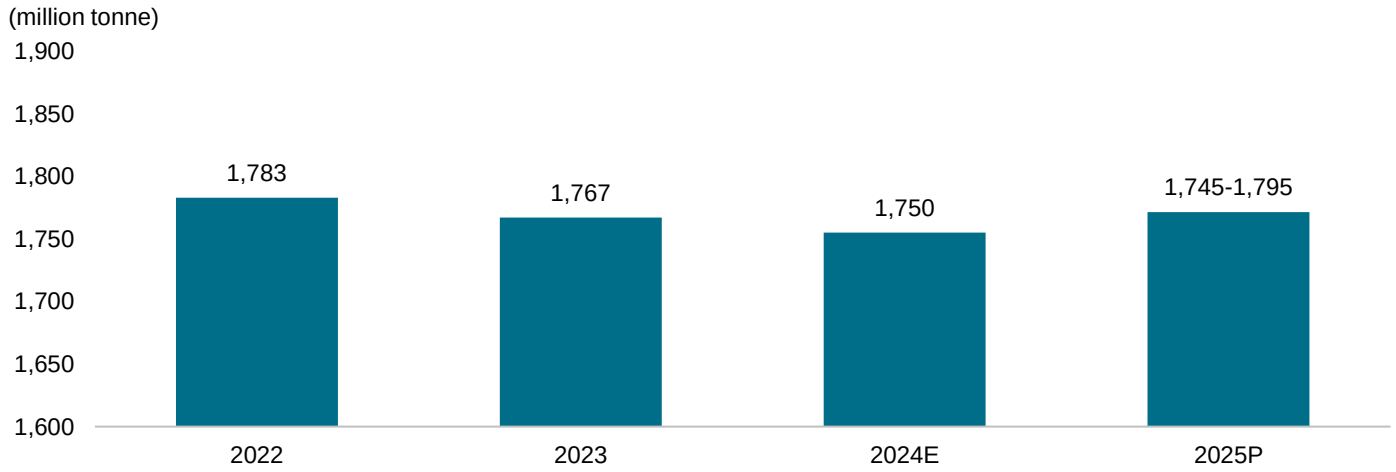
Global demand for finished steel products expected to recover in 2025

Demand for finished steel products was 1,767 million tonne in 2023 vs 1,783 million tonne in 2022. The decline in the demand was because of weakening investment and offtake of steel in most sectors and regions amid a weakening economic environment globally. The situation continued into 2023, particularly in the EU and the US.

In 2024, global demand of finished steel products was estimated at ~1,750 million tonne as the manufacturing sector continued to grapple with headwinds such as declining household purchasing power, aggressive monetary tightening in key economies and escalating geopolitical uncertainties. The ongoing weakness in housing construction, owing to tight financing conditions and high raw material costs, further contributed to the sluggish demand for steel.

However, in 2025, a broad-based global recovery, excluding China, is projected, which will see global steel demand reach 1,745-1,795 million tonne. Demand in China is expected to remain under strain, owing to ongoing weakness in the property sector; but sustained investment in other infrastructure sectors and support from allied industries is filling the gap. In other key steel markets such as the US, demand is also being closely monitored due to uncertainty with regard to key infrastructure investments. The MENA and ASEAN regions, though, are expected to maintain the growth momentum, as was the case in 2024.

Global demand for finished steel products



E – estimated; P – projected
Source: World Steel Association, Crisil Intelligence

South Korea, Taiwan, China among the countries with highest per capita apparent steel use

South Korea, Taiwan and China were top three countries in terms of per capita apparent steel use in 2024 with 924 kg, 746 kg and 601 kg respectively. However, in terms of per capita apparent steel use CAGR, Venezuela, India and Türkiye were among the high growth countries with CAGR (2020-24) of 28.8%, 12.5% and 6.1% respectively.

Apparent steel use per capita (kg/ capita)

Country/ Region	2020	2021	2022	2023	2024	CAGR (2020-24)
Africa	27	28	25	25	25	-1.5%
Argentina	80	111	112	109	73	-2.1%
Asia	311	305	297	294	283	-2.3%
Brazil	101	123	109	111	119	4.4%
Canada	363	399	347	332	329	-2.4%
China	708	669	650	635	601	-4.0%
France	189	214	183	174	177	-1.7%
Germany	376	426	390	340	313	-4.5%
India	64	76	82	93	103	12.5%
Italy	341	447	423	399	389	3.3%
Japan	420	461	444	433	419	-0.1%
Middle East	177	188	187	193	197	2.7%
Netherlands	238	270	279	250	255	1.8%
North America	201	239	228	227	221	2.4%
South America	82	106	94	94	96	3.9%
South Korea	949	1081	990	1013	924	-0.7%
Spain	247	274	263	266	284	3.6%
Taiwan, China	789	886	741	727	746	-1.4%
Türkiye	350	394	381	443	444	6.1%
United Kingdom	125	143	123	114	118	-1.3%
United States	238	288	279	266	261	2.3%
World	228	233	223	221	215	-1.5%

Source: World Steel Association, Crisil Intelligence

Domestic structural steel market clocked ~12% CAGR over fiscals 2019-2025

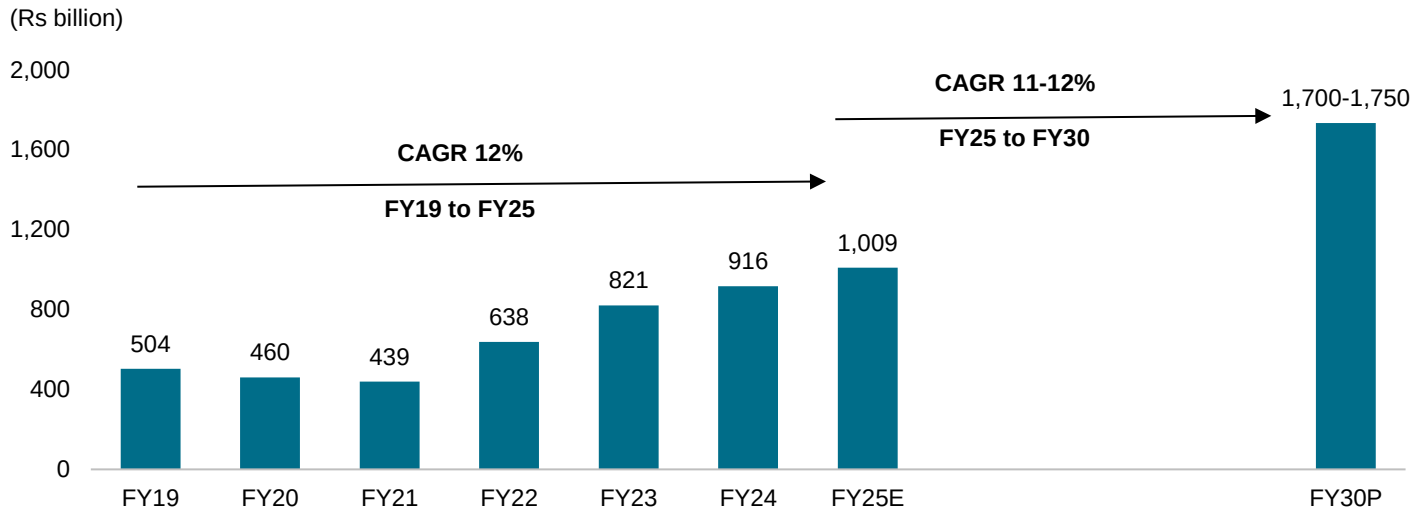
The domestic structural steel market is estimated to have expanded to Rs 1,009 billion in fiscal 2025 from Rs 504 billion in fiscal 2019, at a CAGR of 12%.

Growth drivers include robust infrastructure projects by the government, increasing manufacturing/industrialising construction capex and a developing construction sector. Additionally, the disparity between the growth rates of structural steel market on the basis of value and volume suggests that the market has been more influenced by the increase in prices.

Between fiscals 2025 and 2030, the market is projected to grow at a CAGR of 11-12%. Demand for structural steel will be driven by sustained construction activities (residential, commercial and industrial) along with healthy demand from the automotive and power segments. In the residential building segment, investments will be driven mainly by affordable housing, PMAY, smart cities, rising disposable incomes, nuclearisation of families and urbanisation. Additionally, pent-up demand from the automotive industry, which prefers fabricated structural steel due to its customisable nature, is also expected to contribute to the overall demand of structural steel in India.

Furthermore, structural steel has multiple applications in the power segment in transmission towers and substations because of durability and low thermal conductivity. It is also being used in the renewable sector (equipment manufacturing). Hence, increasing capacity additions in the power segment will augment overall industry growth.

Estimated market size of domestic structural steel market



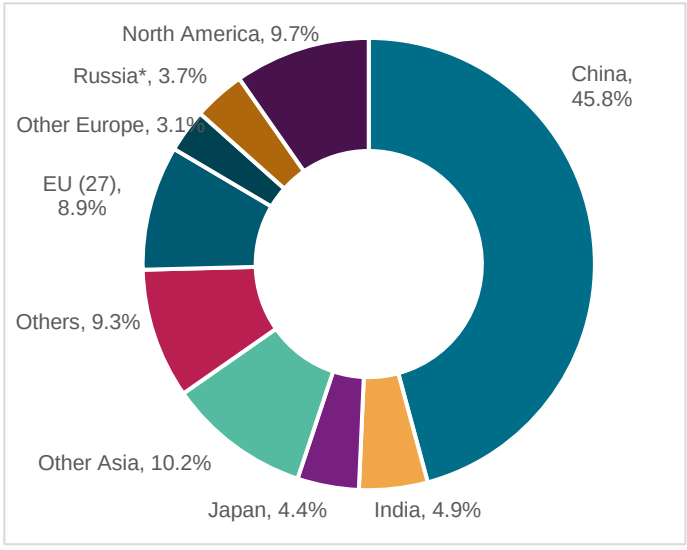
Note: E - estimated, P - projected
Source: Crisil Intelligence

India's share in global finished steel products consumption increased between 2014-24

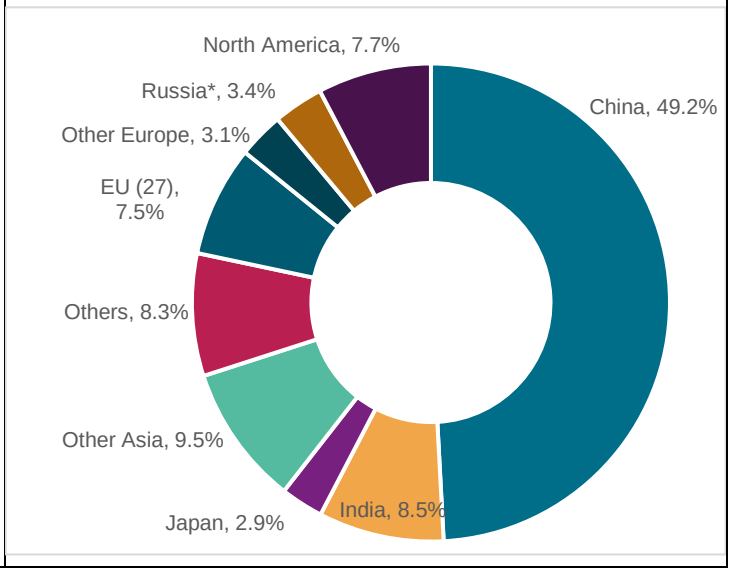
India's consumption of finished steel products accounted for 8.5% of global consumption in 2024, up from 4.4% in 2014. On the other hand, the share of the European Union, Japan and North America in global finished steel product consumption decreased in 2024 over 2014. However, India still trails China, which accounted for 49.2% of finished steel product consumption in 2024 vs 45.8% in 2014, suggesting scope for improvement.

Apparent steel use (finished steel products) by geography

2014



2024



*Note: *Russia and other CIS+ Ukraine*
Others comprise Africa, Middle east, South America, and Australia and New Zealand
Source: World Steel Association, Crisil Intelligence

3.3 Key growth drivers of structural steel

Key growth drivers	Description
Growing acceptance in construction	• As mentioned above, due to its inherent benefits, structural steel is finding growing acceptance in construction. In 2024, building and infrastructure (including other infrastructure) accounted for 50-60% of the total steel consumption in the world. The demand of steel in construction is further fuelled by increasing urbanisation and a growing preference for eco-friendly options
Increasing penetration of PEB	• PEBs are gaining more prominence in the construction industry due to benefits including reduced project timelines and limited potential revenue loss due to shortened project times. This trend will directly provide an impetus to the demand for structural steel, which is a major component of PEB
Faster construction timelines	• Structural steel allows for faster construction timelines due to faster assembly and installation of steel components. Additionally, steel components are usually fabricated in factory under controlled environment, which also allows for simultaneous work at construction site. This in turn allows for optimized construction schedules
Growing infrastructure investments	• Structural steel demand is driven primarily by infrastructure and industrial segments, which are major end use sectors of structural steel. Within infrastructure, roads, bridges, power, etc are witnessing increasing investments from both public and private sources. Hence, increased investments are expected to boost the overall demand of structural steel
Increasing use in industrial segments	• Industrial segment is one of the primary end use segments of structural steel, which wide range of applications including towers, industrial rooftops, and within oil and gas sector. Based on an analysis of eight key sectors, Crisil Intelligence estimates construction investment in the industrial sector at INR 4-5 trillion over fiscals 2026-30, compared with INR 4 trillion spends in fiscals in fiscals 2021-25. The rise in investment is projected due to inclusion of the PLI scheme in the capex investments of the industrial sector. Crisil have only considered 3 capex-intensive sectors in case of PLI scheme, viz., auto and auto components, textiles and specialty steel for inclusion in our estimates. This rise in industrial construction investments is estimated to provide boost to structural steel segment as well.
Availability of advanced technological tools	• The advancement of technological tools is also catalysing adoption of structural steel in construction through precise modelling and visualisation. Use of technologies such as augmented reality (AR)/virtual reality (VR) has also streamlined design, coordination, and optimisation processes, ensuring precise and efficient steel structures. Furthermore, automation in fabrication, including computer numerical control (CNC) machinery also enhances production speed, quality, and cost-effectiveness
Increasing demand from the power segment	• Structural steel plays an important role in the renewable energy space and is used in equipment like solar panels, wind turbines, geothermal pipes etc. Hence, ongoing shift to more sustainable sources of energy due to increasing awareness of adverse environmental effects of energy generation through fossil fuels will also contribute to higher demand for structural steel, which is a convenient option for equipment manufacturing. • India's installed generation capacity, which stood at 356 GW at the end of fiscal 2019 reached 475 GW in fiscal 2025 on the back of healthy renewable capacity additions (including solar, wind, hybrid, and other renewable sources). In fiscal 2026, renewables are expected to account for 35-40% of the installed capacity, up from 22% in fiscal 2019, whereas coal-based capacity is expected to have tapered to 40-45% over the same period from 55% in fiscal 2019. Moving forward, renewable capacity is expected to surpass the 360 GW mark in fiscal 2030 on the back of strong renewable capacity additions over fiscals 2026-30. By fiscal 2030, RE capacity is expected to account for 45-50% of the installed capacity of 745-755 GW. These capacity additions will require substantial capex in development of needed infrastructure

Source: Crisil Intelligence

3.4 Key challenges in the structural steel market

Challenges	Description
Shortage of skilled labour supply	• Structural steel fabrication industry highly depends on the skill sets of welders, fabricators and engineers and shortage of skilled labours possess significant challenges in the operations of steel fabrication.
Fluctuations in input prices	• Raw material prices directly impact the profitability of structural steel suppliers. While price trends of coking coal and iron ore, two of the main raw materials for steel, have been diverging since July 2021 (balancing each other to an extent), they remain key risks for the industry

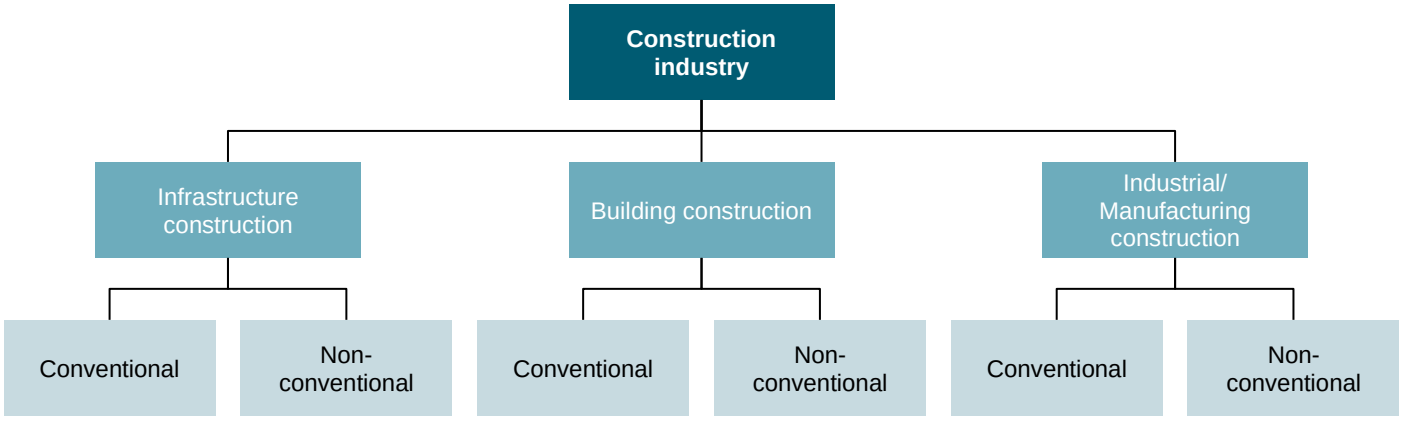
Source: Crisil Intelligence

4 Assessment of the pre-engineered building industry

As discussed, the construction sector can be classified into building construction, industrial/manufacturing, and infrastructure construction. Furthermore, the construction industry can be further categorised into conventional and non-conventional methods based on the type of construction method/structure. Non-conventional structure can be further divided into:

- Pre-cast: These structures are manufactured/produced in factories out of concrete components. Once cast, these components are transported to the construction site and assembled, creating the final building
- Prefabricated: In this case, entire structures or modules are manufactured in the factory, including all necessary components and finishes and then transported to the site as completely built units or in semi-knocked-down form, where it is directly installed without the need for further onsite assembly (e.g., guard rooms).
- Pre-engineered buildings: These steel structures are fabricated in the factories in a controlled environment and transported to the construction site where the final assembly takes place

Overview of the construction industry



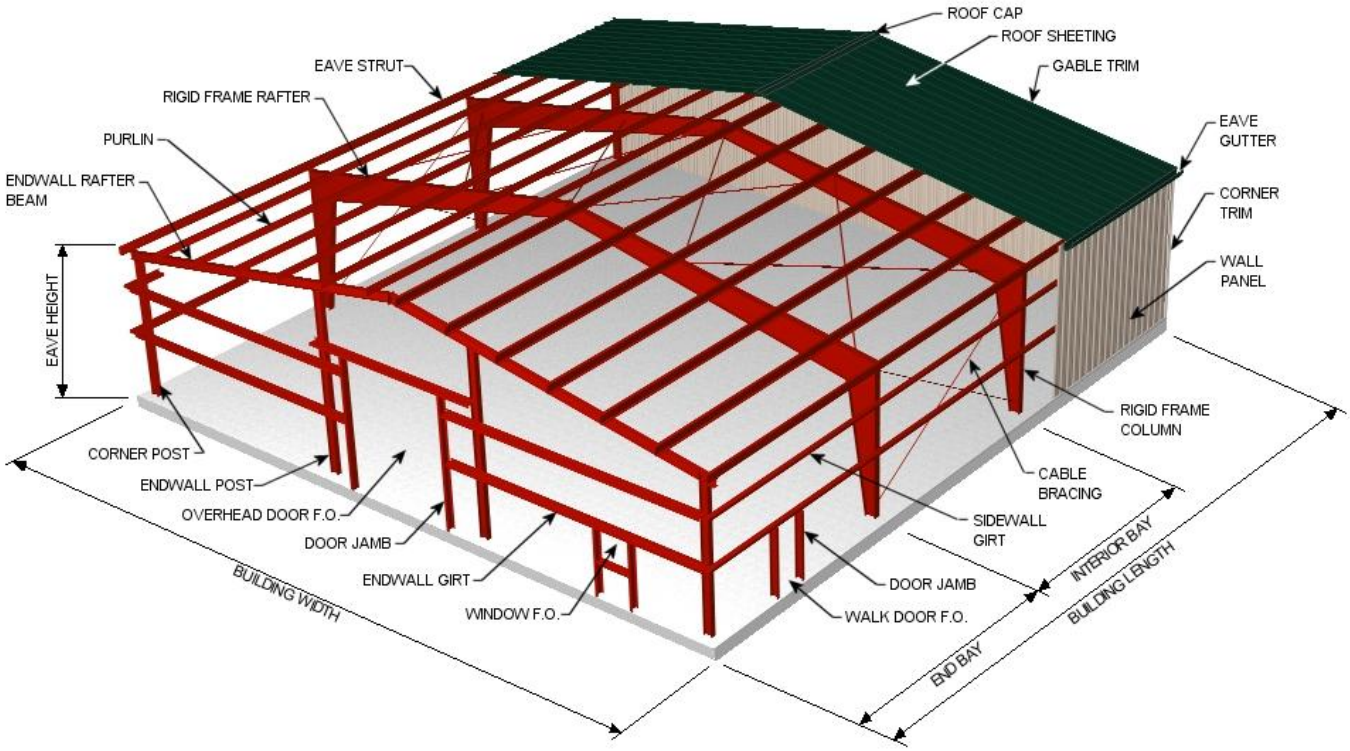
Source: Crisil Intelligence

4.1 Overview of pre-engineered products and their applications

Pre-engineered construction has emerged as an innovative building method due to rapid growth of automation in the construction industry. Furthermore, shortage of skilled labour, combined with the inherent advantages of these structures in terms of speed, cost-effectiveness, and environmental impact, is significantly propelling their popularity in the construction sector.

Pre-engineered structures/units are more eco-friendly than traditionally constructed ones and provide common benefits such as reduced material wastage, enhanced quality control, and improved onsite safety. The controlled manufacturing process minimises material wastage, promoting sustainable building practices, while rigorous quality control ensures consistent and durable structures.

Overview of Pre-engineered steel building

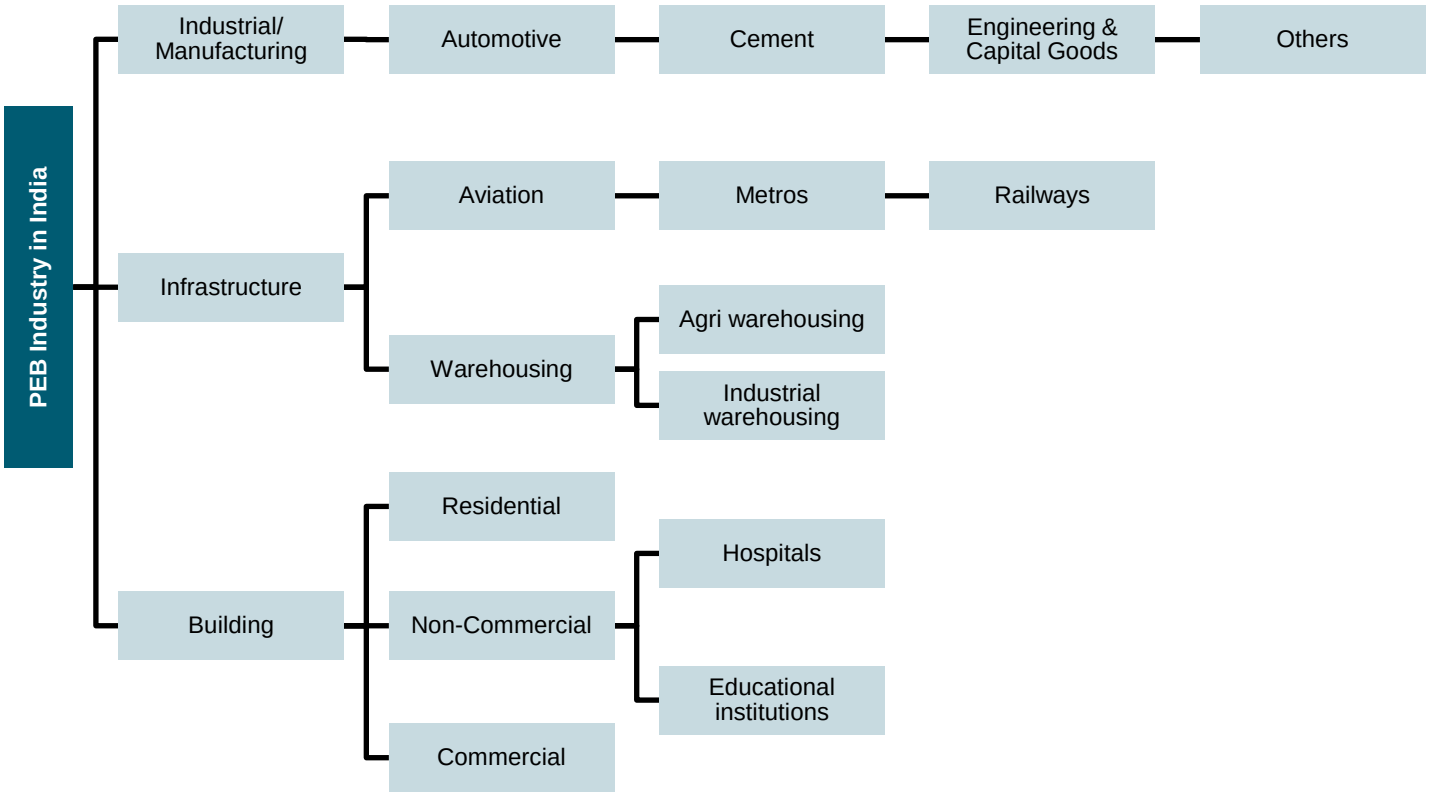


Source: Crisil Intelligence

Key components/sub-structures of pre-engineered buildings:

- **Main frame or primary structure**: This frame is the main load-carrying and support structure of a pre-engineered building made of rigid steel frames. The primary structure consists of columns, rafters, and other supporting structures. The shape and size of these structures differ based on their application and requirements. The frame is constructed by bolting the end plates of connecting sections together
- **Secondary structure**: It consists of purlins, grits, and eave struts used to support the wall and roof panels. Purlins are employed on the roof, grits on walls, and eave struts at the intersection of the sidewall and roof
- **Roof, wall panels, and insulation**: These components are used for sheeting and generally made of ribbed steel sheets. They are used as roof and wall sheeting, roof and wall liners, partition, and soft sheeting. Steel sheets are generally produced from steel coils

Pre-engineered buildings industry segmentation by end user



Source: Crisil Intelligence

Pre-engineered construction is gaining popularity in the commercial, infrastructure, and industrial landscape, such as in the automobile, cement, paper sectors, offices, aircraft hangers, warehouses and logistics, and data centres. Use of pre-engineered constructed units enables companies to accelerate the construction process in a cost-effective manner without compromising on quality. In fact, the absence of external uncontrollable factors such as adverse weather in pre-engineered construction ensures better quality control through standardised operations and streamlined processes.

Pre-engineering is reshaping the realm of building construction by decreasing the overall construction duration for commercial complexes, hospitals, office buildings, high-rise buildings, and so on, without compromising on construction quality. Pre-engineered structures are also used extensively in the institutional and recreational field to construct schools, exhibition halls, hospitals, theatres, auditoriums, gymnasiums, and indoor sports facilities.

Difference between RCC and pre-engineered construction

Parameter	Traditional RCC construction	Pre-engineered construction
Major component	Concrete and reinforced steel bars	Steel and metal accessories
Raw materials used	Cement, steel, sand, bricks, etc	Steel, anchors, channels, etc The primary structure of PEBs consists of columns, rafters, and other supporting structures, whereas the secondary structure consists of purlins, grits, eave struts, etc. Additionally, wall panels, roofs, etc are also used for sheeting and insulation purpose.
Construction location	Completely onsite	The entire structure is manufactured in controlled environments such as factories, only assembling of structures happens onsite. The foundation in pre-engineered buildings is similar to RCC construction but its requirements may vary depending on the weight of pre-engineered structures
Construction time	It depends largely on the type (industrial, residential, etc), height and area of construction. However, RCC construction usually takes a longer time than pre-engineered building construction	In pre-engineered building construction, a majority of components are manufactured in a controlled environment and only assembling of parts takes place onsite. According to industry sources, construction of pre-engineered buildings takes 40-50% less time than RCC construction
Manpower	Demands a substantial workforce since the entire construction process, including moulding and shaping concrete, occurs onsite	Requires less manpower as only assembling of the final structure happens onsite. According to industry sources, manpower required for construction of pre-engineered buildings is approximately 25% lower than the conventional method
Applications	Residential as well as industrial; even infrastructural	Largely industrial and warehouse or shed requirements at infrastructure setup
Effect on environment	RCC construction has a more adverse environmental impact owing to the generation of significant waste and landfill mass during onsite construction activities	Owing to the streamlined nature of construction in a controlled environment, the environmental footprint is reduced by minimising wastage. Additionally, pre-engineered building components can be recycled, which optimises the use of raw materials and minimises construction waste
Modifications	Once concrete hardens, making alterations becomes complex and costly in RCC structures	Pre-engineered offers superior flexibility as modifications involve changing the assembly of prefabricated components, adjusting to make it more manageable and cost-effective
Cost efficiency	Construction of RCC structures is highly labour-intensive in an uncontrolled environment, making them more costly than pre-engineered building structures. But the cost depends on the size and type of the structure, the span, etc, and varies from project to project	Pre-engineered structures are lighter and require less material, a shorter construction time, and comparatively less labour onsite, leading to lower costs compared with RCC structures. But the cost depends on the size and type of the structure, the span, etc, and varies from project to project

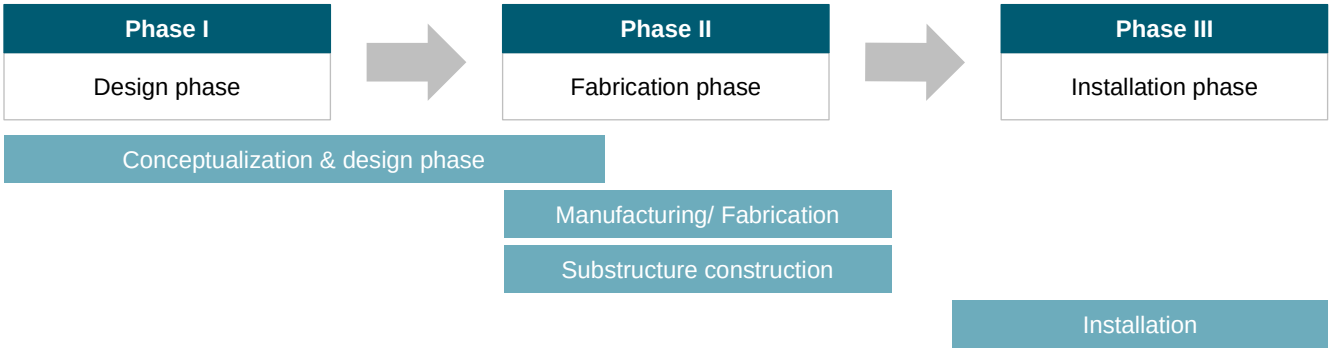
Source: Crisil Intelligence

Construction plan for pre-engineered buildings

Similar to the construction plan for RCC structures, the pre-engineered building construction plan is also structured into three primary phases, though the activities scheduled in each of the three phases—design, fabrication, and installation—differ. The initial design phase encompasses critical tasks such as site preparation, finalising the design specifications, and obtaining the requisite approvals.

The design phase is the first phase of overall PEB construction and is extremely critical to the overall outcome of the PEB building. It is followed by the fabrication phase, which focuses on manufacturing of pre-engineered structures as well as construction of substructures that not only enhance cost efficiency but also accelerate project timelines significantly. Hence, this simultaneous approach contributes to substantial savings in terms of both time and resources. Finally, the concluding phase of pre-engineered building construction involves the transport of individual building components to the designated construction site, where the final structure is installed with precision.

Design plan of pre-engineered construction



Source: Crisil Intelligence

4.2 Advantages of PEBs over traditional construction

1. Better quality control

Traditional construction methods rely heavily on skilled workers for onsite assembly and intricate tasks, the current shortage of such labour poses challenges to timely and efficient project completion.

Hence, pre-engineered construction offers a viable solution as a majority of the construction is done in controlled factory environments, reducing the need for onsite labour. Moreover, companies can achieve economies of scale through improved manufacturing processes, further boosting growth of the pre-engineered construction industry, enabling faster component production, and ensuring greater accuracy and consistency in final structures.

2. More sustainable

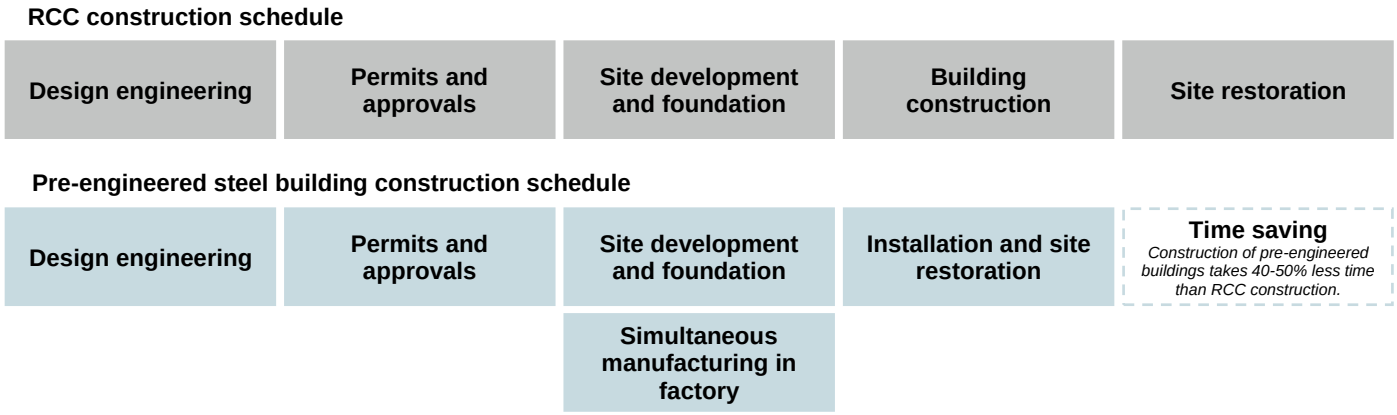
As considerable parts of the structures are built offsite in the case of pre-engineered construction, it causes less disturbance to the construction site's surroundings. Furthermore, factories and manufacturing plants enable standardisation of processes and streamlining of procedures, which help reduce wastage and the carbon footprint that directly impact the environment. Additionally, as discussed, pre-engineered building components can be recycled, as steel is the major raw material of PEB. This allows optimized use of raw materials and minimises construction waste.

This optimized use of raw materials helps in decreasing the overall carbon footprint of compared to traditional conventional construction methods. Additionally, energy optimizing solutions like HVAC (Heating, ventilation, and air conditioning), insultation, etc. which can further reduce the overall carbon footprint of the building.

3. Faster construction timelines

Pre-engineered construction accelerates project timelines without compromising on deliverable quality. As it involves components being first manufactured in factories/manufacturing plants, this method enables simultaneous preparation of the foundation at the construction site, which helps in accelerating project timelines. According to industry sources, construction of pre-engineered buildings takes 40-50% less time than RCC construction.

Construction schedule: RCC vs pre-engineered buildings



Source: Crisil Intelligence

4. Cost optimisation

Use of PEBs in construction enables cost optimisation by decreasing overhead site costs, including labour costs. Furthermore, as pre-engineered structures are manufactured within factories/manufacturing plants, they enable standardisation of processes, which ensures good quality of structures. Additionally, they also prevent project delays stemming from external factors such as adverse weather.

As per primary research, the cost of a pre-engineered steel building is estimated to be at times 15-35% lower than conventional structures for sheds, warehouses, and depots or at times 20-25% more expensive than a traditionally constructed building depending on the building's design and usage requirements.

4.3 Key selection criteria for pre-engineered building suppliers

Brand	Design capability	Prior experience	Pricing	Manufacturing capacity	Project management expertise	Pan India presence
						

Source: Crisil Intelligence

Brand

Having a reputed brand name is a key success factor for pre-engineered building suppliers as companies prefer brands for ensuring reliability and quality of raw materials. Furthermore, established brands are also known to adhere to industry standards and codes, ensuring that product quality remains consistent.

Additionally, choosing a reputed brand instils confidence in the project's key stakeholders and reduces the risks associated with dealing with lesser-known suppliers in the unorganised sector. Furthermore, established players invest in research and development and modern technology, resulting in better product quality due to more efficient processes. This, in turn, guarantees that clients receive a high level of quality in their pre-engineered projects. Therefore, opting for a well-known brand name is not just a preference but a practical necessity to ensure the success and quality of pre-engineered projects.

Design capability

Companies prefer pre-engineered building suppliers who have established design/architecture teams and design capabilities as these factors directly influence the functionality and the aesthetics of the building. Suppliers with expertise in architectural and structural design can optimise the building's layout, ensuring efficient space utilisation and seamless integration of various components.

Additionally, the importance of an experienced design team becomes more pronounced in pre-engineered building projects compared with traditional construction projects such as RCC as these projects demand greater coordination among various stakeholders and precise planning and execution from the start to ensure seamless integration of pre-engineered components. Hence, the emphasis on design capability remains a crucial factor in the decision-making process for companies engaged in pre-engineered projects.

Prior experience

Even though adoption of pre-engineered buildings is increasing due to inherent benefits such as cost savings and a lower environmental impact, the market is still in a nascent stage in India. Hence, companies prefer pre-engineered building suppliers with a proven track record to ensure their projects are completed on time. Furthermore, having prior experience also helps in gaining confidence of key project stakeholders as more experience translates into better knowledge of building codes, industry regulations and terrain requirements. Additionally, experienced suppliers often have well-established networks with other stakeholders such as erectors to ensure smooth coordination during the project lifecycle.

Pricing

The fragmented structure of the pre-engineered building industry grants customers significant bargaining power. Hence, competitive pricing is imperative for success. However, pre-engineered building suppliers must ensure a balance between affordability and quality, along with a transparent cost structure.

Manufacturing capacity

A robust manufacturing capability ensures timely production and delivery of building components, as the construction industry is frequently dogged by missed project deadlines and cost overruns.

Furthermore, it also enables pre-engineered building suppliers to streamline their processes, optimise their operations and handle multiple projects simultaneously. Additionally, the ability to handle larger volumes of pre-engineered buildings provides them more bargaining power with suppliers of raw materials, thereby optimising costs.

Project management expertise

It is a pivotal factor in the evaluation of pre-engineered building suppliers as the construction industry is usually riddled by long project timelines. Hence, project management expertise becomes extremely important to ensure timely completion and avoid costs overrun as it helps in the adherence to timelines, managing budget constraints, and maintaining high-quality standards.

For key players, the selection criteria for a PEB supplier is a stringent process, meticulously designed to ensure adherence to safety standards and ultimate quality of the structure and ensure project timelines. The stringent criteria for selecting a PEB supplier is further compounded by the significant switching costs and technical difficulties that prospective clients face, which makes it difficult for customers to contemplate transitioning to an alternative supplier.

Pan India presence

A pan India presence helps in enhancing credibility for PEB suppliers. PEB suppliers with pan India presence usually have extensive logistics network which contributes to efficiently reducing transport costs and time. Moreover, the presence of regional offices allows for prompt, on-site support, ensuring the swift resolution of any issues or bottlenecks. Thereby, facilitating successful completion of projects

4.4 Critical factors in the pre-engineered building industry

Success factor	Description
 **Quality material**	• The use of quality raw materials ensures structural integrity, compliance with relevant codes and standards, proper safety of pre-engineered buildings and a higher life span of buildings • Furthermore, it positively influences reputation and helps gain the confidence of potential clients
 **Research and development**	• Specialised design expertise plays a pivotal role in ensuring both functionality and aesthetics of pre-engineered buildings. • Investing in research and development enables pre-engineered building suppliers to provide better quality products to their clients and gain competitive advantage. Furthermore, suppliers could ensure pre-engineered structures are customised according to the terrain, enabling them to expand their product portfolio and gain potential clientele.
 **Standardisation**	• Establishing standardised processes and specifications is a critical factor for the industry as they ensure consistency and quality across pre-engineered building structures. Having standardised products also decreases the chances of structural failures and collapse of these structures during erection • Overall, standardisation streamlines the manufacturing process, reduces the chances of mishaps during the erection process, thereby enabling suppliers to deliver reliable, cost-effective and high-quality solutions consistently
 **Technology**	• Pre-engineered building suppliers can leverage technology through use of proper design software and new construction technologies such as 3D printing to optimise their design process as well as accelerate their manufacturing process. Utilising the latest technological innovations related to construction not only helps pre-engineered building players in saving costs and time, but also helps them gain competitive advantage • As technology continues to advance, access and knowledge of the latest technologies/software will emerge as a key differentiator in the PEB industry, companies equipped with cutting-edge technologies such as advanced robotics, artificial intelligence, and digital fabrication techniques will gain a competitive edge in terms of efficiency, quality, and time • For example, integration of technologies such as CNC machines, robotic welding, and 3D modelling software could increase the precision and pace of the fabrication process without compromising on quality. Consequently, investment in training and development to enhance technological capabilities will be crucial for firms seeking to maintain their market leadership and meet the growing demands for sophisticated PEB solutions
 **Location of Manufacturing plants**	• As individual components of PEBs are manufactured in factories and then transported to the construction site, location of manufacturing plants plays an important role in ensuring optimised transportation costs. • Additionally, presence of manufacturing plants at diverse strategic locations also enables economic and efficient delivery of PEB components to the construction sites.
 **Experience of handling complex projects**	• Prior experience of handing complex projects is paramount for success in the pre-engineered building industry as it provides invaluable insights on streamlining operations and optimising resource allocation, thereby facilitating smooth project execution. Additionally, having prior experience of handling complex projects for high ticket clients also provides credibility to pre-engineered building players
 **Project management and global safety practices**	• Efficient project management, along with compliance to safety measures, is a prerequisite for success of the pre-engineered building industry. While effective project management ensures efficient planning, budget control, and quality assurance, adherence to safety measures includes strict compliance to codes, training programmes for workers, provision of safety equipment, regular audit of work practices at sites as well as promoting awareness on security norms among all key stakeholders

Success factor	Description
	• Hence, the synergy between efficient project management and stringent safety compliance is a critical factor for the pre-engineered building industry
Qualified sales and marketing team	• Qualified sales and marketing team is essential for success in the PEB industry due to the technical nature of the industry. Deep technical knowledge and industry experience of sales and marketing team ensures effective communication of PEB benefits and its alignment with the clients' overall construction requirement. • Additionally, effective marketing strategies and brand positioning also helps companies in educating potential clients and capturing market share.

Source: Crisil Intelligence

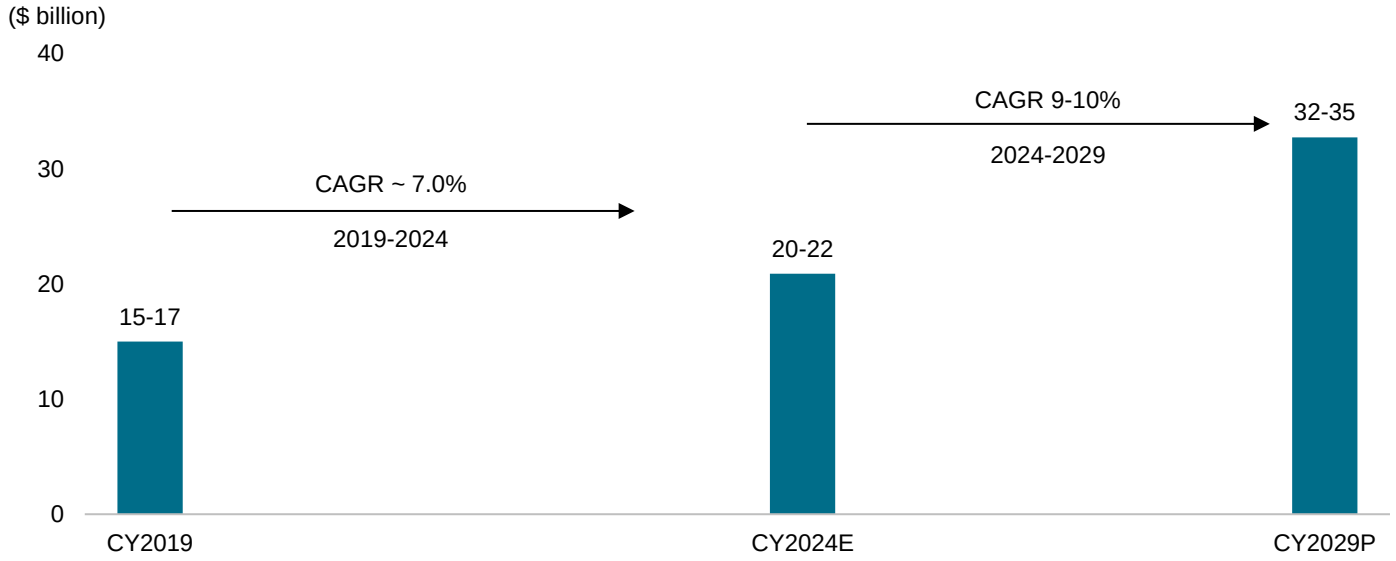
4.5 Overview of global pre-engineered buildings industry

Global PEB market to reach $32-35 billion by 2029

The global pre-engineered buildings market was valued at $20-22 billion in CY2024, compared with $15-17 billion in 2019, thereby registering a CAGR of ~7%.

The market is expected to clock a CAGR of 9-10% over the medium term and is projected to be valued at $32-35 billion by CY2029. This growth could be attributed to rising construction spends, increasing awareness about modern off-site construction techniques, as well as rising demand for green buildings globally.

Global pre-engineered buildings market



Note:
E: Estimated, P: Projected
Source: Allied Market Research, Crisil Intelligence

Infrastructure segment to continue to hold prominent share

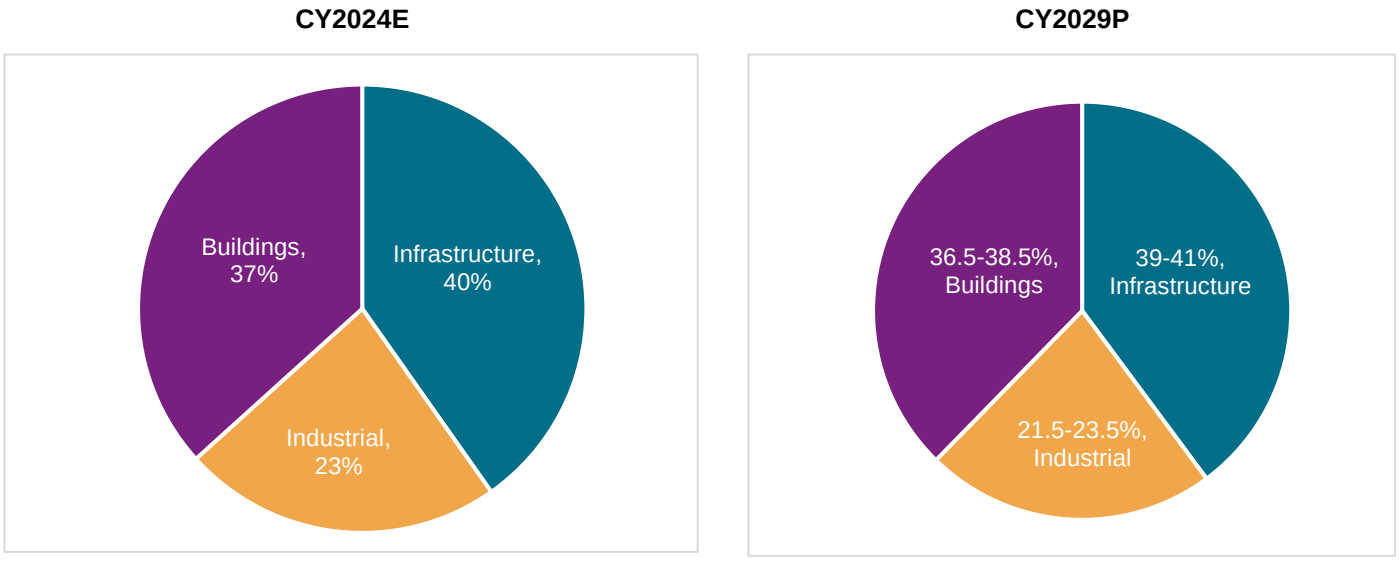
In 2024, the infrastructure segment accounted for the largest share of the global pre-engineered buildings market (40%), followed by buildings (37%) and industrial (23%). Increasing investments in public infrastructure, growing urbanisation and rising awareness of benefits of pre-engineered construction vis-à-vis the traditional onsite model have contributed to this high share of the infrastructure segment.

The infrastructure segment — mainstay of the global pre-engineered buildings market — is expected to drive demand for pre-engineered buildings. Within the segment, railways and warehouses form a major share, whereas in the industrial segment, manufacturing plants drive the majority of spend. The growing adoption of PEBs in these sectors is driven by their advantages, such as larger clean span spaces, the durable nature of PEBs, faster construction timelines and cost optimisation.

In the buildings segment, institutional buildings such as hospitals, schools and college campuses drive the major demand. PEB penetration in this sector is driven by faster construction timelines, the durable nature of PEBs and optimised cost savings.

Going forward, the infrastructure segment is expected to continue holding the major share of the overall PEB industry (39-41%), followed by buildings (36.5-38.5%) and industrial (21.5-23.5%) in 2029. Overall, increasing awareness of the benefits of PEB construction, combined with the growing emphasis on infrastructure development, is expected to drive demand for PEBs going forward.

PEB market by end-use industry



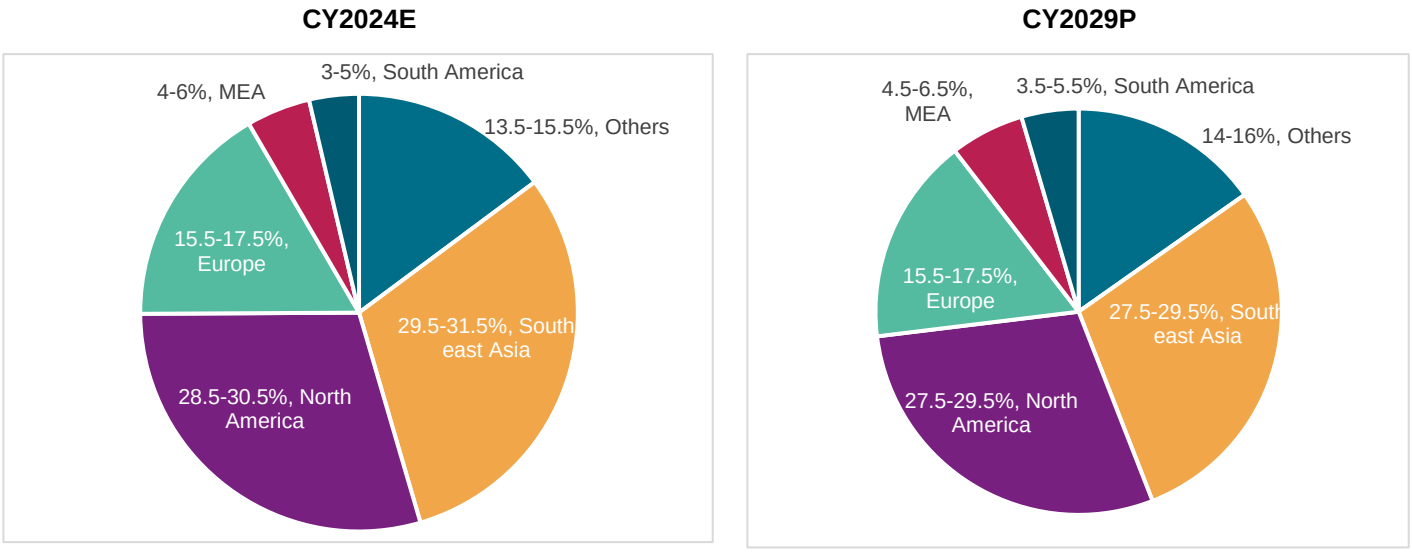
Notes:
1. Infrastructure segment includes warehouses, railways and other related infrastructure
2. Buildings segment includes institutional infrastructure, and residential and commercial buildings, including sports and recreation
3. Industrial segment includes manufacturing plants and other related structures
E: Estimated, P: Projected
Source: Allied Market Research, Crisil Intelligence

Southeast Asia held largest market share in 2024 in global PEB industry

In 2024, Southeast Asia accounted for the largest share of the pre-engineered buildings market (29.5-31.5%), closely followed by North America (28.5-30.5%) and Europe (15.5-17.5%). Key factors contributing to the growth of PEBs in Southeast Asia are rapid industrialisation and urbanisation and increasing adoption of advanced construction practices. Additionally, the tourism and e-commerce sectors are expected to boost demand for commercial and industrial structures such as warehouses, restaurants and hotels, which will facilitate the growth of pre-engineered buildings in the region. Major factors contributing to the growth of the pre-engineered buildings market in North America and Europe are the booming e-commerce and construction sectors and increasing awareness of non-conventional construction methods such as PEB.

Furthermore, growing demand from the infrastructure and industrial sectors, coupled with the rising adoption of construction technologies such as PEB, is expected to facilitate the growth of the pre-engineered buildings market in the Middle East and Africa (MEA) and South America. The share of MEA and South America in the overall PEB industry is estimated to increase to 4.5-6.5% and 3.5-5.5%, respectively, by 2029.

Share of key geographies in global PEB market



Notes:
E: Estimated, P: Projected
Source: Allied Market Research, Crisil Intelligence

Overall, growing investments in infrastructure construction by governments, coupled with increasing awareness of PEB and its benefits in construction, are expected to positively impact the global PEB market.

For instance, the Indian government has launched initiatives such as Smart Cities and PM Gati Shakti to develop urban infrastructure. Similarly, the Vietnamese government has launched policies aimed at enhancing infrastructure development to improve overall logistics. These government initiatives are expected to boost demand for PEB structures, facilitating further market growth.

Key government schemes

Region	Country/Region	Schemes	Description
Asia	ASEAN	ASEAN Infrastructure Fund	• The ASEAN Infrastructure Fund is a dedicated fund established by the ASEAN member nations and ADB to address the ASEAN region's infrastructure development needs. • The fund provides loans to finance infrastructure investment projects in the transport, energy, water and sanitation, environment and rural development, and social infrastructure sectors. Examples include renewable energy plants, roads or highways, and transmission and power grid development.
	Central and Southeast Asia	Sustainable Infrastructure Programme in Asia (SIPA)	• SIPA aims to support countries in Central and Southeast Asia transition towards energy, transport and industry systems aligned with the Paris Agreement and Sustainable Development Goals. • SIPA provides countries with capacity development and policy advice at different stages of the infrastructure investment cycle including long-term strategic planning, project-level evaluation,

Region	Country/Region	Schemes	Description
			aligning national policy frameworks for energy, transport and industry, green finance and investment, etc.
	India	NIP, PLI, PM Gati Shakti, Smart Cities	• The Government of India has launched multiple schemes, such as NIP, PLI and PM Gati Shakti, to improve the overall infrastructure landscape in India.
	Vietnam	Information and Communication (IC) Infrastructure Plan (2021-30)	• Under this plan, the Government of Vietnam aims to develop the overall information infrastructure of the country, including high-speed internet, green data centres and specialised IT parks. • Additionally, the government has launched multiple infrastructure schemes, such as Road Network Plan, to ensure focused investments and focus on the overall infrastructure of the country.
MEA	Kingdom of Saudi Arabia (KSA)	National Infrastructure Fund	• The fund focuses on encouraging partnership with the private sector through a package of valuable products and innovative solutions that will have an impact on deepening the infrastructure financing markets in KSA. • It targets to inject more than SAR 570 billion to boost GDP growth, triple the share of non-oil GDP to SAR 605 billion, and create job opportunities in KSA by 2030.
	United Arab Emirates	Dubai Industrial Strategy 2030, Abu Dhabi Economic Vision 2030, Plan Abu Dabi 2030	• Government of UAE has launched multiple schemes like Dubai Industrial Strategy 2030 to improve the overall infrastructure landscape and economic prospects of the company, including reducing reliance on oil economy. • Additionally, Abu Dhabi Centre for Projects and Infrastructure announces launch of projects worth AED 66bn across emirate in 2024. These projects will span various sectors, including housing and quality of life, education and human capital, tourism, and natural resources.
North America	US	Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grant Program	• The purpose of the CRISI Program is to invest in a wide range of projects within the US to improve railroad safety, efficiency and reliability. This program invests in railroad infrastructure projects that improve safety, support economic vitality (including through small businesses), increase capacity and supply-chain resilience, etc.
	Canada	Canada Infrastructure Program	• Through the Investing in Canada Infrastructure Program, the federal government is investing more than $33 billion in public infrastructure projects across the country. • Investments in infrastructure are being made through targeted four funding streams of Public Transit stream, Green Infrastructure stream, Community, Culture and Recreation Infrastructure stream, Rural and Northern Communities Infrastructure stream
Europe	Europe	Trans-European transport network (TEN-T), Connecting Europe Facilty (CEF)	• The CEF Transport programme is the key EU funding instrument for the development of high performing, sustainable and interconnected Trans-European transport networks, with a focus on the nine Core Network Corridors. It also co-finances projects that enhance multimodality, improve infrastructure and advance innovation and new technologies. • Under the CEF programme, EUR 25.6 billion is available for grants from the EU's 2021-2027 budget to co-fund Trans-European Transport Network (TEN-T) projects in the EU Member States.
	Germany	The 2030 Federal Transport Infrastructure Plan (FTIP)	• Federal Government of Germany launched FTIP with the aim of achieving structural maintenance of the existing networks and

Region	Country/Region	Schemes	Description
			removal of bottlenecks on the major transport arteries and at important transport hubs. • Of the plan's total level of funding of about € 269.6 billion, about € 141.6 billion will be invested in the structural maintenance of the existing networks in the period until 2030 alone. Around € 98.3 billion are earmarked for upgrading and new construction projects.
South America	South America	Routes for Integration	• Routes for Integration" initiative aims to reduce distances, improve logistics, facilitate connections, and increase productivity. Constructions will include infoways, hydroways, roadways, railways, ports, airports, and electricity transmission lines. • The program will benefit from around R$ 50 billion (US$ 10 billion) from development banks to build a network of routes for South American integration and development.
	Columbia	Intermodal Transportation Master Plan (PMTI)	• In 2015, an infrastructure initiative to connect Colombia through multimodal transportation projects, commonly called the Intermodal Transportation Master Plan (PMTI) was launched. • The initiative encompassed 100 road projects, 52 highway projects, five railway projects, eight fluvial projects, 31 airport projects, and various dredging projects.
	Argentina	-	• In the short term, Argentina's administration is reportedly focused on small-scale infrastructure projects –featuring opportunities for local companies. • Public works priority areas include social housing, ports, roads, rail, and waterworks. Top government priority projects include the construction of pipelines for hydrocarbon transport, railway modernization, and expansion of existing power transmission lines, as well as mining sector-related logistics infrastructure.

Note: The above list is only indicative and not exhaustive
Source: Government websites, Crisil Intelligence

PEB market in USA

PEBs are being utilized in the construction sector across USA, a key region within North America that held a significant share of 28.5-30.5% as of CY2024 in global PEB market. In the USA, PEBs are being employed in variety of construction, including shopping malls, warehouses, factories, airport hangers, commercial buildings, hospitals, etc. This widespread use of PEB across multiple end use segments underscores the growing importance of PEBs in the overall construction landscape of the USA.

PEB market in USA is expected to grow due to increasing acceptance of non-conventional construction methods like PEBs, growing infrastructure spends by the government and expansion of end use industries like warehouses and storage.

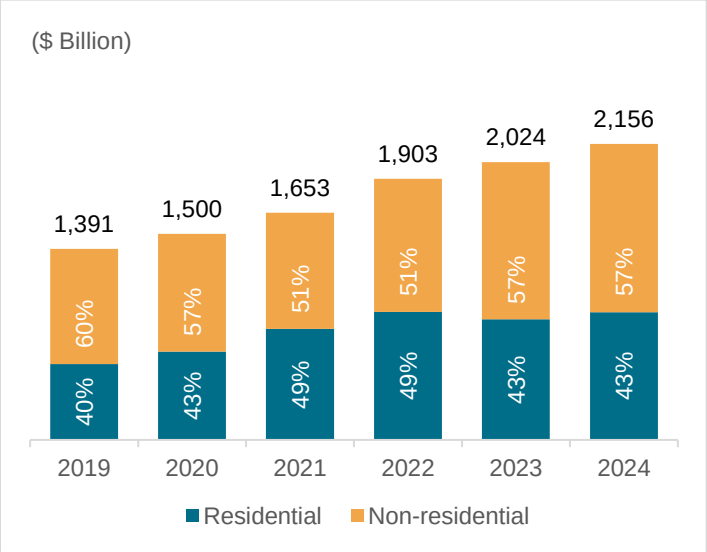
Furthermore, there has been an uptick in overall construction spends of USA as well, which has been a major growth driver of PEB. As per United States (US) Census Bureau, total construction spends stood at $ 2,156 billion in 2024 compared to $ 1,391 billion in 2019, thereby registering a CAGR of ~9%. Within overall construction spends, share of non-residential segment stood at 57%, while the reminder was with residential segment at 43%.

Additionally, as per US Census Bureau, the spends in the manufacturing sector has grown from $ 81 billion in 2019 to $233 billion in 2024, thereby registering an impressive CAGR of ~24% and outperforming the overall construction spends. Consequently, share of manufacturing sector in non- residential construction spends has increased from ~10% in 2019 to

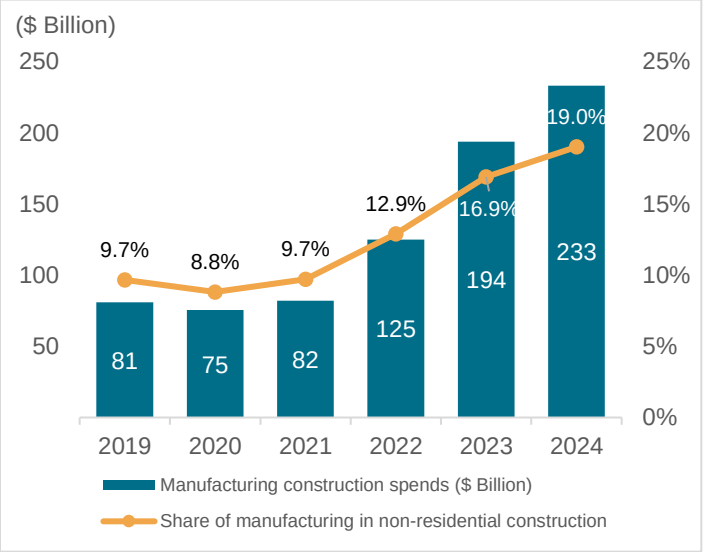
~19% in 2024. This surge highlights significant construction investments in the industrial segment, which is a prominent end use segment within overall construction sector of PEB.

Overall, PEB segment in USA is expected to grow on account of growing demand from manufacturing and residential segment, increasing government spends on infrastructure segments, and surging acceptance of PEBs by the key stakeholders.

Construction spends- USA ($ Billion)



Manufacturing construction spends- USA ($ Billion)



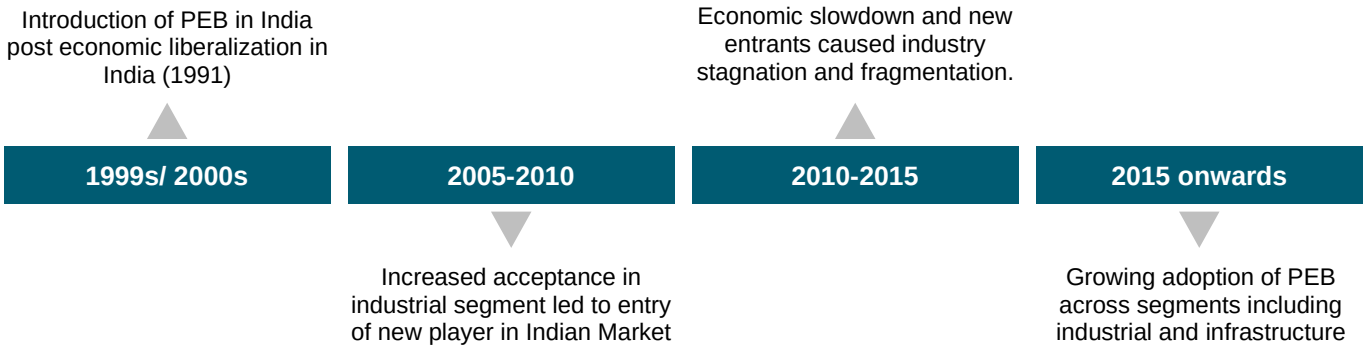
Source: US Census Bureau, Crisil Intelligence

4.6 Overview of pre-engineered buildings market in India

Evolution of pre-engineered structure market in India

Pre-engineered buildings were introduced in India during the late-1990s/2000s with the onset of India's economic growth post liberalisation in 1991. However, the acceptance among consumer verticals began in early-2000 with good growth during 2005-2010. Pre-engineered buildings started gaining prominence following a strong fixed capital formation in India and increased adoption by customers. This period of high growth saw new players enter the fray. With the slowdown of India's economic growth, the Indian pre-engineered buildings industry stagnated between 2010 and 2015. Post that, the industry saw good adoption but suffered some slowdown as capex declined during the pandemic, leading to a drop in revenue in fiscal 2021.

Evolution of PEB in India



Source: Crisil Intelligence

Overview of construction costs of pre-engineered structures

As per primary research, the cost of a pre-engineered building is estimated to be at times 15-35% lower than conventional structures for sheds, warehouses and depots, or at times 20-25% higher than a traditionally constructed building, depending on the building's design and usage requirements. However, the higher upfront cost of pre-engineered buildings is offset by faster construction times, flexibility to expand these buildings, lower maintenance costs, better durability and higher salvage value, among others, which ultimately results in cost savings over the entire lifespan of the building. Further, pre-engineered buildings not only accelerate the overall construction process but also save labour costs and enable quicker occupancy/commencement of operations, leading to potential revenue generation at an earlier stage.

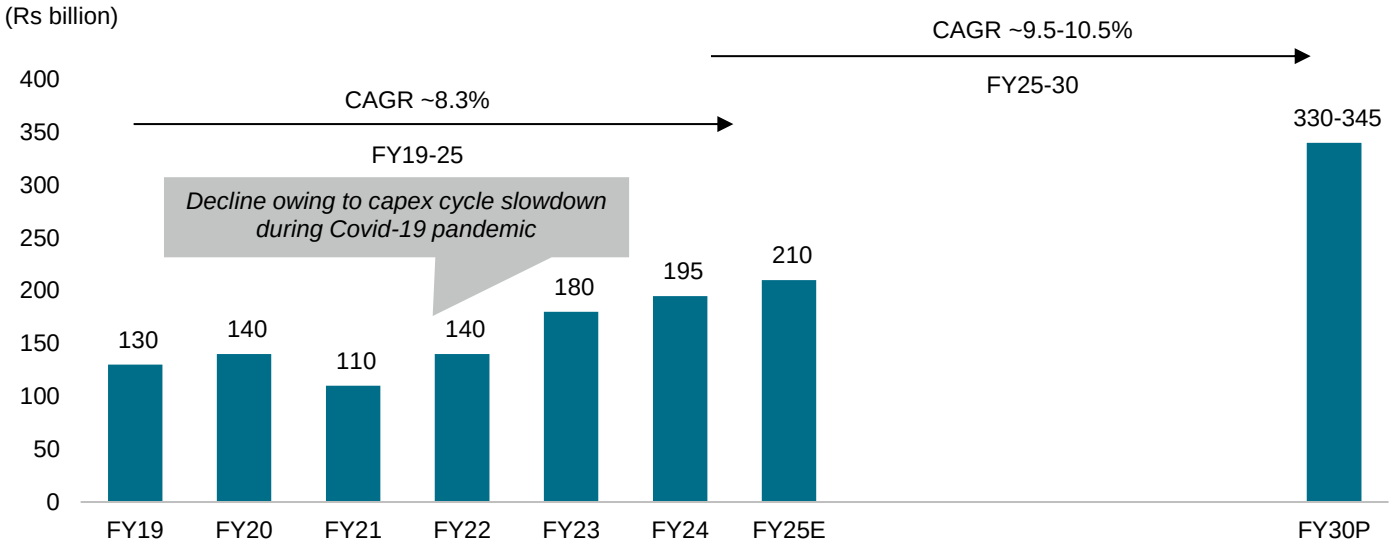
Additionally, due to the flexibility to shift these structures to other locations, pre-engineered structures help reduce potential capex costs, enabling organisations to adapt to changing operational needs without the financial burden of constructing new buildings.

PEB market in India to log 9.5-10.5% CAGR between fiscals 2025 and 2030

The industry expanded at a CAGR of ~8.3% over fiscals 2019 and 2025, growing from Rs 130 billion in 2019 to Rs 210 billion in fiscal 2025, driven by increased construction investments and growing awareness of PEB and its advantages.

The medium-term outlook is optimistic, with the industry expected to clock a CAGR of 9.5-10.5% between fiscals 2025 and 2030 to Rs 330-345 billion, supported by investments in the industrial and infrastructure sectors, such as warehouses and logistics as well as expressways (wayside amenities and toll plazas).

Pre-engineered steel buildings market in India



E: Estimated; P: Projected
Source: Crisil Intelligence

Large, organised players grow at faster clip than overall pre-engineered steel building industry

Within the overall industry, top seven players have grown at a faster growth rate as compared to the rest of the industry. This higher growth of the top players can be attributed to higher reliability and capability, high quality raw materials used, good track record for execution and capability to provide innovative and effective solutions to customers.

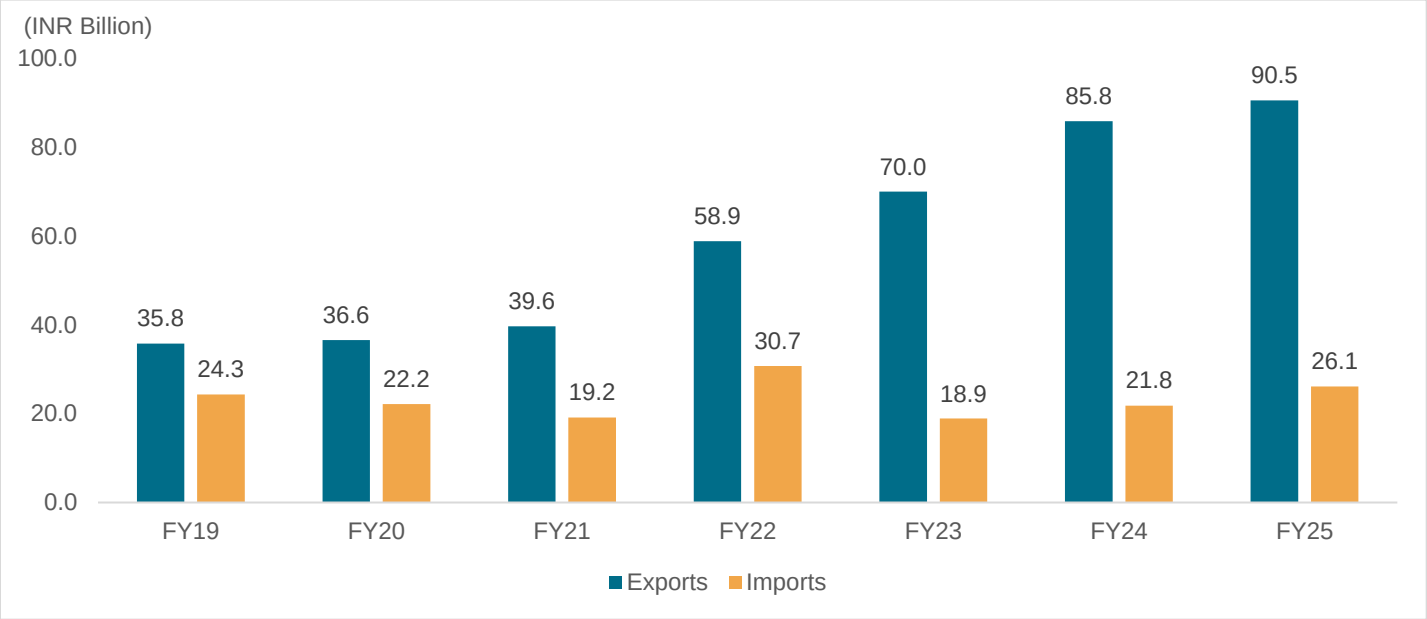
Industry players	Estimated revenue FY20 (Rs billion)	Estimated revenue FY24 (Rs billion)	CAGR FY20-FY24 (%)
Top seven players	70	100	9.3%

Note: Top seven players considered for the above table are as follows (not in any particular sequence): Kirby Building Systems & Structures India Pvt Ltd, Interarch Building Products Ltd, M&B Engineering Ltd, EPack Prefab Technologies Limited, Everest Industries Ltd, Pennar Industries Ltd, and Zamil Steel Buildings India Pvt Ltd
For estimated CAGR calculation of top players, Kirby Building Systems & Structures India Pvt Ltd CY2019 revenue is considered for revenue calculations of FY20, and Kirby Building Systems & Structures India Pvt Ltd CY2023 revenue is considered for revenue calculations of FY24
Kindly note that overall revenue from operations of these players is considered which may include revenue from non-PEB segments as well
Source: Annual reports, Crisil Intelligence

PEB exports registered a CAGR of ~17% between fiscals 2019-2025

Exports of PEB increased to INR 90.5 billion in fiscal 2025 from INR 35.8 billion in fiscal 2019, implying a CAGR of ~17% between fiscals 2019-25. Compared to exports, imports registered a CAGR of ~1% during the period. This growing difference between the imports and exports of PEB from India indicates increasing domestic manufacturing/production of PEBs and global demand for PEBs from India, thereby leading to a positive trade balance.

PEB imports and exports — India



Notes: Following HSN codes are considered for the purpose of the chart above: 94069090, 73089090 and 73089010
Source: Ministry of Commerce and Industry, Crisil Intelligence

USA, UAE, and Saudi Arab were the major export location of PEB in fiscal 2025

In fiscal 2025, USA was the top export location of PEB from India with export value of INR 50.4 billion, making it the largest export market of PEB from India. USA was followed by UAE and Saudi Arab, with the export value of INR 3.5 billion and INR 2.5 billion respectively. Collectively, these countries (top three) contributed to ~62% of the total PEB exports from India in fiscal 2025.

Major export destination of PEB products from India- top 10 countries (fiscal 2025- in INR billion)

Region	Export value (INR billion)
USA	50.4
UAE	3.5
Saudi Arab	2.5
U.K.	2.4
Australia	1.7
Tanzania Rep	1.5
Nepal	1.4
Bhutan	1.3
Qatar	1.2
Spain	1.0

Notes: Following HSN codes are considered for the purpose of the chart above: 94069090, 73089090 and 73089010. The above chart only represents top 10 countries where PEB products from India are exported, share of other countries stood at ~26% (~INR 24 billion)
Source: Ministry of Commerce and Industry, Crisil Intelligence

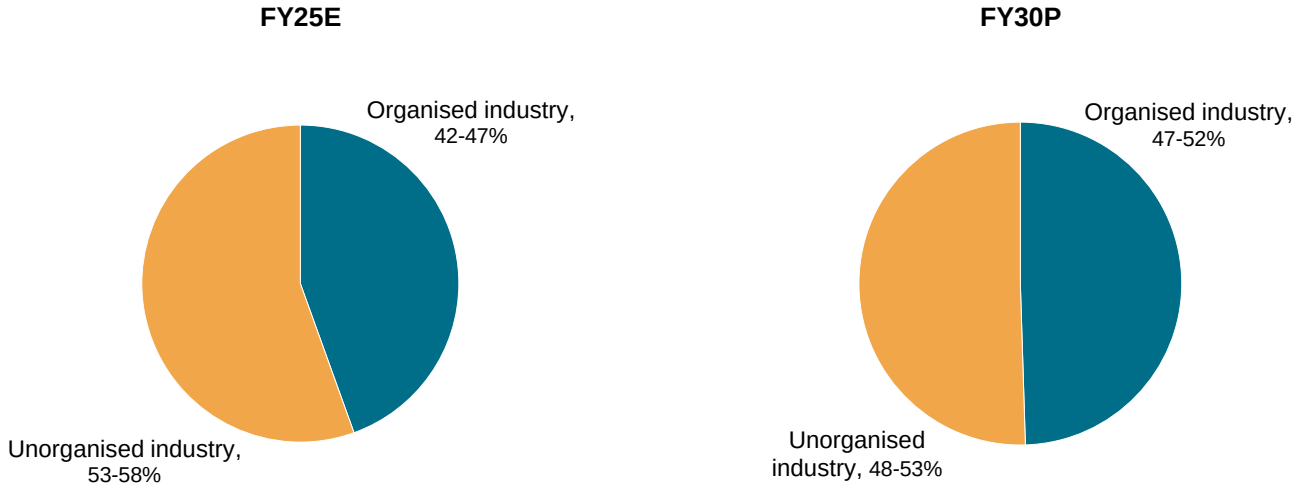
Increasing trend of orders of PEBs to Indian players

Increasing exports of PEB from India between fiscals 2019-2025, highlights an increasing trend of outsourcing to Indian players due to competitive pricing, manufacturing capabilities and adherence to quality standards. This trend of increasing exports highlights rising prominence of Indian PEB players in global markets, especially in countries like USA, thereby providing Indian players more opportunities in international markets.

Pre-engineered buildings market remains competitive with large unorganised vertical; organised sector remains superior to unorganised one

As of fiscal 2025, the organised industry held a 42-47% revenue share in the overall industry. The remainder is the fragmented unorganised industry, which accounts for 53-58% of the overall market, as high capital investment is not required for entering the market. However, the organised sector has an edge over the unorganised sector in terms of a reliable track record, maximised supply chain capabilities, and quality engineering services and products, due to which there has been a growing shift towards the organised sector. This shift is also expected to augment the revenue of players in the organised market. Hence, moving forward, the share of the organised industry is expected to improve to 47-52%, with the unorganised industry forming the remainder 48-53%.

Share of organised and unorganised sectors in PEB



Notes:
E: Estimated, P: Projected
Source: Crisil Intelligence

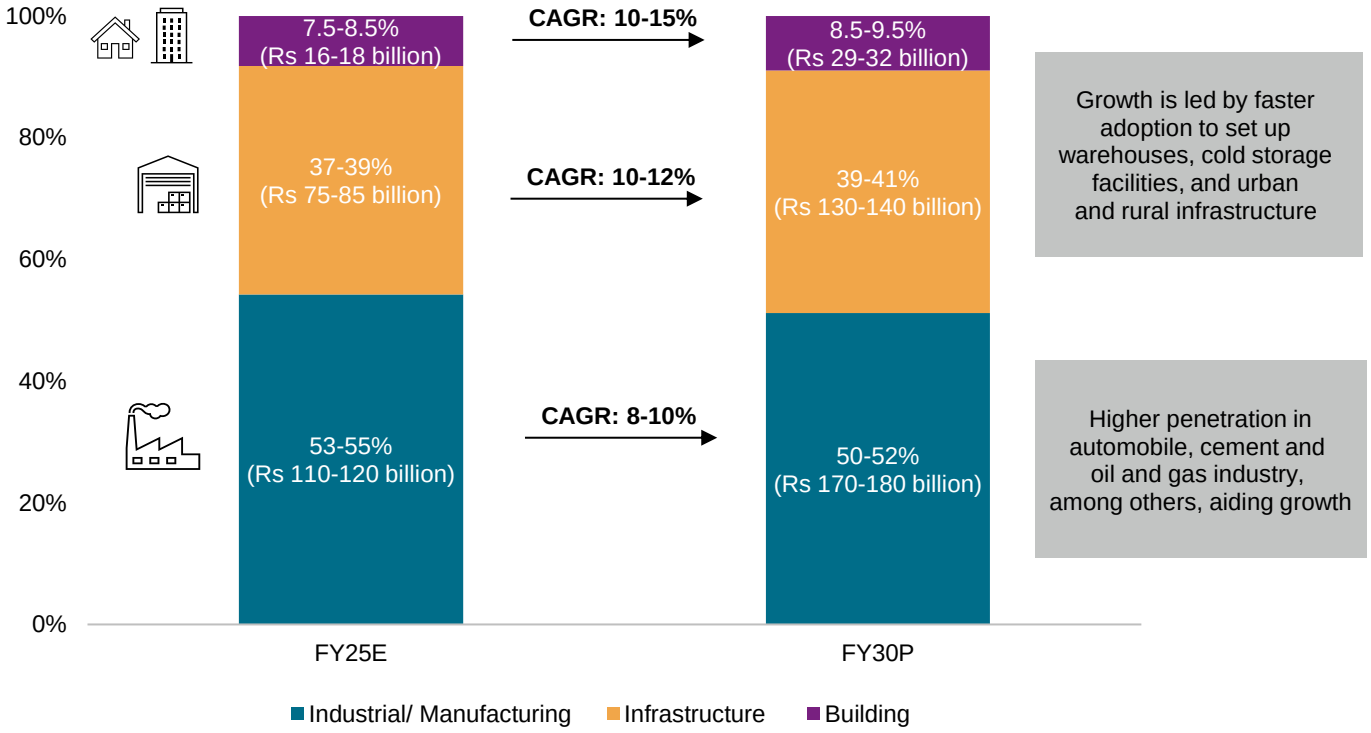
Share of infrastructure in the pre-engineered steel building market to increase

The pre-engineered steel building market in India can be divided into three broad end-use sectors: industrial/ manufacturing, infrastructure, and building (residential, commercial and non-commercial). The industrial sector, which is estimated to hold the largest market share of 53-55% in FY25, is expected to account for 50-52% of the market by FY30. The high industrial sector's share in the pre-engineered steel buildings market is led by higher penetration in the automobile, cement, and oil and gas markets, among others.

The infrastructure sector is estimated to increase its share to 39-41% by FY30 from an estimated 37-39% in FY25. Pre-engineered steel buildings in the sector include warehouses, cold storage facilities, data centres, power plants, aircraft hangers and railway yards. PEB warehouses are also gaining prominence post GST implementation.

The buildings sector share in the pre-engineered steel buildings market, which was low at 7.5-8.5% in FY30 is estimated to remain range-bound at 8-9% in FY30.

Market segmentation by end-use sectors



Note:
E: Estimated; P: Projected
Source: Crisil Intelligence

SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis

Strengths	Weaknesses
• Growing acceptance of PEBs in the construction sector due to faster construction times and reduced dependence on onsite labour • Availability of improved and advanced machinery and technologies • Increasing access to international markets as substantiated by rising exports of PEBs from India • Rise in government-led innovative construction projects like Light house projects under the ambit of PMAY-U • Lauch of policies like Domestically Manufactured Iron & Steel Products (DMI&SP) and PLI scheme for specialty steel, which is expected to positively impact the availability and quality of steel as a raw material, supporting the PEB industry	• As Steel is the major raw material for PEB construction and a good conductor of heat, it reduces the thermal comfort of the building and the overall fire resistance of the building • Steel being one of the major raw materials for PEB construction, can make entire PEB structure susceptible to corrosion if not properly maintained • High presence of unorganized segment combined with lack of differentiated offering may result in price pressure. • Limited suppliers of high-grade steel, makes the industry susceptible to supply chain issues • Future expansions of PEB become difficult if such expansions are not properly thought out from the start of the project
Opportunities	**Threats**
• As of fiscal 2025, the share of PEB in the building, industrial and infrastructure sector was estimated at 0-1%, 13-15% and at 6-8% respectively. Overall share of PEB in construction was only around 3-5% as of fiscal 2025. This low share of pre-engineered construction in overall construction indicates high growth potential • Growing popularity of sustainable buildings may help the sector- PEB is a more sustainable alternative to conventional RCC buildings • Shift from RCC to PEB construction combined with low share of PEB in overall construction • Rising construction spends, especially in infrastructure segment, to boast the demand of PEBs • Low penetration of PEBs in building segments combined with increasing urbanisation to improve demand of PEBs in building segments • Increased industrial capex and planned capacity expansion by the companies to boost demand of PEBs • Growing demand from warehouses and cold storage due to increase in the penetration of ecommerce in India expected to help the domestic PEB industry	• Traditional RCC construction holds the dominant market share (95-97%), posing strong competition • Failure to gain widespread acceptance due to limited awareness, knowledge gap, and misconceptions can limit the growth • Lack of skilled labours including fabricators and designers may results in knowledge and experience gap, which may lead to operational inefficiencies • Increasing geopolitical uncertainties may adversely affect steel prices, which is the prominent raw material of PEB • Standardisation of PEB components often results in modular sizes and shapes, limiting the freedom to create highly unique or unconventional designs • Some parts of PEB structures may require significant replacement or maintenance from time to time, especially during the end of the lifespan of PEB structures

Source: Crisil Intelligence

Porter's five forces analysis

Porter's five forces	Description
 **Threat of new entrants: High**	• The threat of new entrants in the pre-engineered construction industry is high due to its moderate capital-intensive nature, as it does not require substantial investments in terms of manufacturing facilities/factories, specialised equipment and skilled labour. • However, high-value clients prefer credible manufacturers of pre-engineered structures with a proven track record, which further makes it difficult for new entrants to capture the market. That said, lack of stringent regulatory policies and a high-capacity utilisation ratio make the industry more attractive to new entrants.
 **Power of customers: High**	• The industry's fragmented nature, coupled with lack of undifferentiated products and services, provides high bargaining power to customers. In the case of large projects, the presence of a limited number of big-ticket suppliers, such as contractors and construction developers, reduces the bargaining power of buyers as vendor choice becomes limited. Tier 1 service providers compete on quality and pricing. • Overall, the highly fragmentated nature of the pre-engineered structure industry, coupled with inability to provide product differentiation, provides high negotiation power to customers, thereby negatively impacting revenue of players in the pre-engineered buildings market.
 **Power of suppliers: High**	• Supplier power is high as there are few large and credible suppliers of raw materials and components, allowing them to influence the industry. SAIL, Tata Steel and JSW hold 40-45% of the steel production market. Large pre-engineering companies that have established long-term relationships with these suppliers have an advantage in negotiations, leading to a more balanced power dynamic.
 **Competitive rivalry: High**	• The industry exhibits high competitiveness, driven by fragmentation (55-60% share held by unorganised players) and a limited number of big-ticket clients. Furthermore, due to the increasing demand for standardised pre-engineered structures, the scope of product differentiation becomes limited, which puts additional price pressure.
 **Threat of substitutes: Low**	• The threat of substitutes is low. One of its major alternatives is traditional on-site built construction. However, the advantages of pre-fabrication, such as cost savings, faster construction times and more eco-friendly nature, are positively impacting its demand. Traditional construction still holds a major share in overall construction.

Source: Crisil Intelligence

Policy and regulatory framework

There is no existing regulatory or policy framework particularly for pre-engineered buildings in India. However, there are various codes, which are discussed below, for the use of steel in construction. The pre-engineered construction industry in India adheres to guidelines and quality standards set by authorities such as the International Organization for Standardization (ISO), Bureau of Indian Standards (BIS), Building Materials and Technology Promotion Council (BMTPC), and Ministry of Housing and Urban Affairs (MoHUA).

The National Building Code (NBC) is designed by BIS, which is responsible for setting guidelines for construction activities, including the use of prefabricated/ pre-engineered components. Civil Engineering Division (CED) Committee number 2 to CED Committee number 59 of BIS are related to construction. Furthermore, CEDs such as CED 32, CED 51 and CED 46 are related to prefabricated/ pre-engineered construction. Other standards include IS-800 (Indian Standard - General Construction in Steel - Code of Practice), IS-875-PART- I to V (Loads and Combinations), and IS-1893 Criteria for Earthquake Resistant Design of Structure (R-5). Model Building Bye-Laws, 2016, published by Town and Country Planning Organisation, MoHUA, plays a vital role in formulating policies and regulations for the construction industry, offering guidance and support for adopting new technologies. For instance, Sections 6.1.1 and 6.4 of the provisions for

structural safety provide specific details for pre-engineered systems. Moreover, depending on the nature of the project, specialised agencies may be involved in regulating specific aspects of pre-engineered construction for infrastructure projects. For instance, during the pandemic, the Ministry of Health and Family Welfare consulted experts from institutions such as IITs of Delhi, Roorkee and Madras, as well as MIT Pune, regarding suitable options available for pre-engineered structures (panels) in the case of healthcare infrastructure.

ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2017, ISO 14001:2004 and OHSAS 18001:2007 (Southeast Asia) are a few quality standards and guidelines adhered to by the PEB industry in India. These standards cover the design, fabrication and supply of pre-engineered buildings and structural steel works. Other international standards include the Metal Building Manufacturers Association (MBMA), American Institute of Steel Construction (AISC) and American Welding Society (AWS).

Some applicable codes and standards as per Indian standards for PEBs/ steel construction/ prefabricated structures

Code	Description
IS:875-I	Code of practice for design dead loads for buildings and structures
IS:875-II	Code of practice for design imposed loads for buildings and structures
IS:875-III	Code of practice for design loads (other than earthquake) for buildings and structures
IS:1893	Criteria for earthquake resistant design of structures
IS:4326	Code of practice for earthquake resistant design and construction of buildings
IS:800	Code of practice for use of structural steel in general building construction
IS:801	Code of practice for use of cold-formed light gauge steel structure members
IS:811	Specification for cold-formed light gauge structural steel sections
IS:4923-III	Hollow steel sections for structural use – specification
IS:8629	Code of practice for protection of iron and steel structures from atmospheric corrosion
IS:4000	High strength bolts in steel structures
IS:14142	Code of practice for design and construction of floors and roofs with prefabricated brick panel
IS:11447	Code of practice for construction with large panel prefabricates
IS:15917	Building design and erection using mixed / composite construction – code of practice
IS:15916	Building design and erection using prefabricated concrete
IS:14213	Code of practice for construction of walls using precast concrete stone masonry blocks

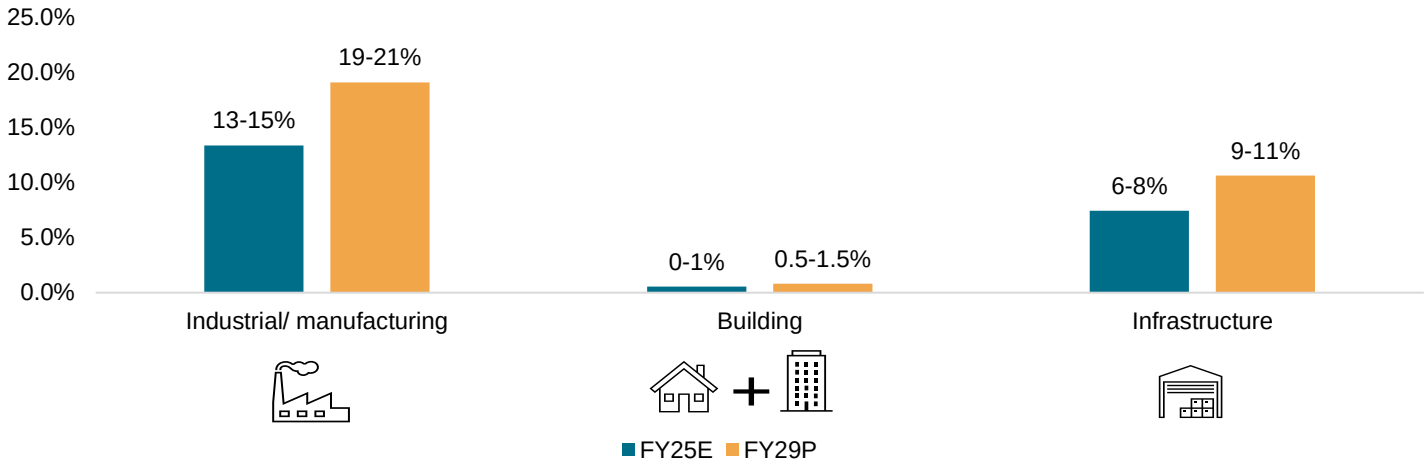
Note: The above list is an indicative and not exhaustive representation of quality standards for PEBs in India
Source: Crisil Intelligence

Key growth drivers

Low penetration of PEB in the building sector

In fiscal 2025, the share of PEB in the building sector was estimated at 0-1%, considerably lower than the penetration of PEB in the industrial sector (13-15%) and infrastructure sector (5-7%). However, growing awareness of benefits of PEB over traditional construction methods, combined with low penetration of PEB in the building sector, provides room for further growth in this sector. Furthermore, growing urbanisation coupled with space and time constraints have fuelled the shift towards vertical construction from horizontal construction. This shift is also expected to increase the demand of PEB in buildings segment, especially in high-rise buildings.

Share of pre-engineered construction in various sectors



Notes:
Infrastructure includes warehouse. Building includes residential, commercial and non-commercial verticals
E: Estimated; P: Projected
Source: Crisil Intelligence

Shift from RCC to PEB

Growing awareness of PEB structures along with their benefits over traditional RCC construction has led to an increase in PEB projects. Use of PEB not only helps in expediting the project timelines but also is more sustainable due to less wastage. As a result, pre-engineered construction structures are garnering greater acceptance over traditional onsite construction practices of erecting entire structures onsite. This positioning is expected to serve as a catalyst for growth of pre-engineered structures in the construction industry.

Increasing popularity of green and sustainable buildings

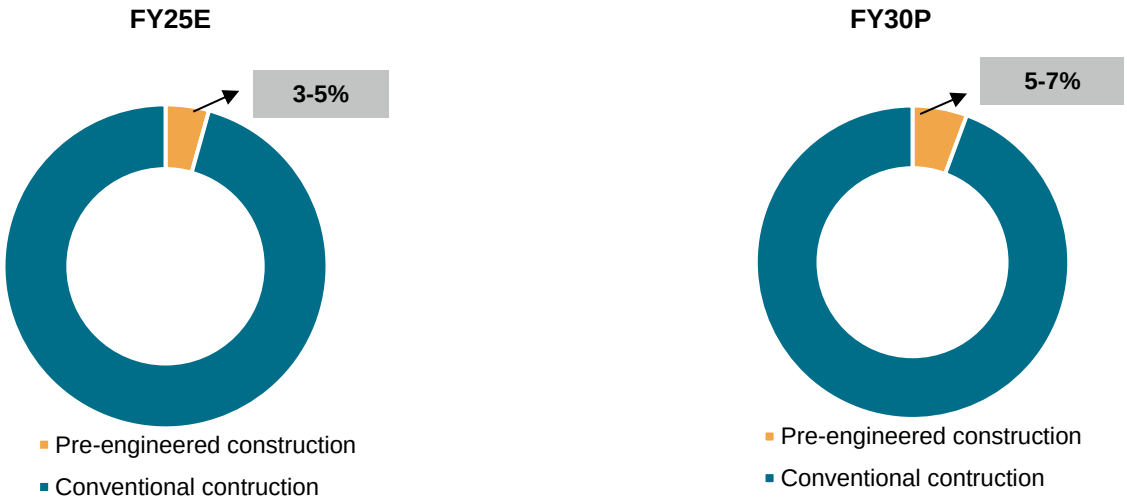
The increasing popularity of green and sustainable buildings among large corporations as well as logistics players is also driving growth of pre-engineered buildings, as streamlined processes minimise material waste and make these buildings more sustainable than traditional buildings. Additionally, steel, which is highly recyclable, is a major component in pre-engineered building construction.

Moreover, use of pre-engineered building structures supports deconstruction and reconstruction, enabling the building components to be reused or recycled at the end of their life cycle. This approach significantly reduces the amount of construction-related waste sent to landfills, leading to a more sustainable construction industry. Overall, the growing shift of logistics players towards green logistics is expected to support the pre-engineered building sector.

Low percentage share of pre-engineered construction in overall construction indicates high growth potential

The pre-engineered construction industry in India, even though gaining acceptance, is still in its infancy. As of FY25, penetration of pre-engineered construction in the overall construction sector is estimated to be around 3-5%. This low share of pre-engineered buildings in India combined with the increasing of awareness of benefits of pre-engineered buildings over RCC, provides a substantial growth potential of pre-engineered buildings in India. This will help in increasing the share of pre-engineered construction in overall construction to 5-7% by FY30.

Share of pre-engineered construction in overall construction



P: Projected; E: Estimated
Source: Crisil Intelligence

Low steel consumption in India

As of calendar year 2024, the country's annual per capita steel consumption stood at 103 kg per annum, compared with the global average of 215 kg. Favourable government policies such as the National Steel Policy aim to increase India's per capita steel consumption and create a technologically advanced and globally competitive steel industry in the country to promote self-sufficiency in steel production as well as economic growth. The National Steel Policy focuses on the following three main aspects:

- Increase consumption of steel through major sectors (segments) of infrastructure, automobile and housing
- Achieve 300 MT of steelmaking capacity by 2030
- Increase per capita steel consumption from around 60 kg in 2017 to 160 kg by 2030

This is expected to aid the pre-engineered building industry by positively impacting the quality of steel available, which is the dominant raw material required for pre-engineered buildings. Additionally, increasing penetration of pre-engineered buildings in infrastructure projects, coupled with the National Steel Policy's aim to boost steel consumption in the infrastructure sector, is expected to positively impact pre-engineered buildings.

Furthermore, the government has implemented the Domestically Manufactured Iron & Steel Products (DMI&SP) policy for promoting 'Made in India' steel for government procurement. Additionally, in 2021, the government approved the Production Linked Incentive (PLI) scheme for specialty steel. The duration of the scheme is five years, from fiscal 2024 to fiscal 2028. With a budgetary outlay of INR 63.2 billion, the scheme is expected to bring in investment of approximately

INR 400.0 billion and capacity addition of 25 MT for speciality steel. These steps will positively impact the availability and quality of steel as a raw material, supporting the PEB industry.

Increased industrial capex and planned capacity expansion to boost PEB sector

Industrial capex averaged INR 4.3 trillion per annum in fiscal 2021-2025E. Investment are expected to reach – INR 7.1 trillion by fiscal 2030, marking an average annual increase of 1.6x, driven by higher capacity utilisation, string corporate balance sheets and the PLI scheme targeting multiple sectors. Over fiscals 2026-2030, the PLI scheme and emerging sector are set to account for a quarter of the country's capex from 12% in fiscal 2021-2025, emphasising the growing importance of these sectors in India’s industrial landscape.

Increased capex in these industries is anticipated to indirectly boost demand for pre-engineered steel structures, especially in large and complex industrial construction projects. Pre-engineered steel construction may be preferred for large and complex industrial projects, depending on the size, structure and construction span of the building, due to its shorter construction spans, engineering efficiency, sustainability and quality advantages.

Increased focus on renewable energy capacity addition

India's installed generation capacity, which stood at 356 GW at the end of fiscal 2019 reached 475 GW in fiscal 2025 on the back of healthy renewable capacity additions (including solar, wind, hybrid, and other renewable sources). In fiscal 2026, renewables are expected to account for 35-40% of the installed capacity, up from 22% in fiscal 2019, whereas coal-based capacity is expected to have tapered to 40-45% over the same period from 55% in fiscal 2019. Moving forward, renewable capacity is expected to surpass the 360 GW mark in fiscal 2030 on the back of strong renewable capacity additions over fiscals 2026-30. By fiscal 2030, RE capacity is expected to account for 45-50% of the installed capacity of 745-755 GW. These capacity additions will require substantial capex in development of needed infrastructure.

Additionally, the launch of National Green Hydrogen Mission on 4th January 2023 with an outlay of Rs. 197 billion up to FY 2029-30 will also positively impact the sector. This mission aims to accelerate the deployment of Green Hydrogen as a clean energy source, will support the development of supply chains that can efficiently transport and distribute hydrogen. This includes the use of pipelines, tankers, intermediate storage facilities, and last leg distribution networks for export as well as domestic consumption. It aims to contribute to India’s goal to become self-reliant through clean energy.

Infrastructure development and investments to support demand for PEB

Infrastructure investments are seen growing faster than the other two sectors due to the government’s push through the NIP, NMP and the Gati Shakti initiatives. Construction investments in this sector are expected to be ~Rs 50-55 trillion between fiscals 2026 and 2030, up from Rs 34 trillion between fiscals 2021 and 2025.

This increased government spending on infrastructure, along with growing awareness of benefits of pre-engineered steel buildings over traditional construction, is expected to boost demand for pre-engineered steel buildings in India.

Increasing construction investments in Indian Railways

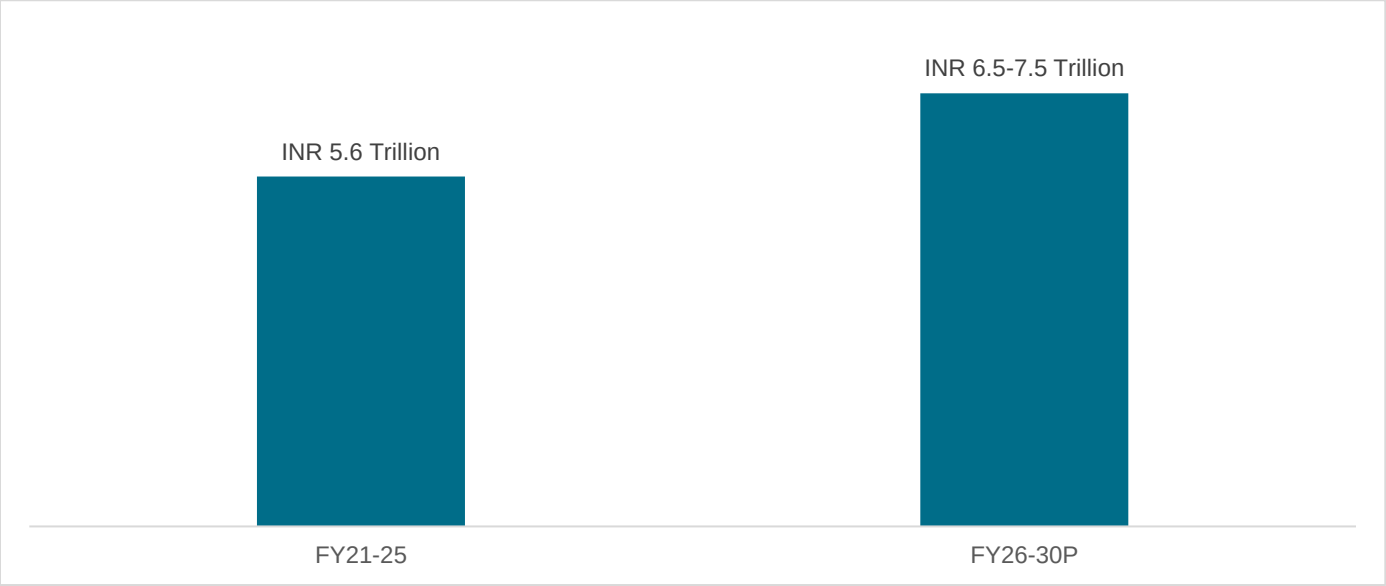
The Indian Railways is the fourth largest rail network globally. The Railways envisions capturing a substantial 40% global rail activity share by 2050. The National Rail Plan (NRP) 2030 expects to bolster capacity to meet future demand, targeting a 45% modal share in freight traffic by 2050.Vision 2024, an NRP initiative, accelerates critical projects, such as electrification, multi-tracking and speed enhancements on key routes.

The government is increasingly focusing on moderation of the Indian Railways through various programmes, including rolling out of Vande Bharat trains, station redevelopment, electrification and dedicated flight corridor projects, boosting investment in this sector.

The Indian railway sector, which is primarily funded by the central government, will receive the same budget allocation in fiscal year 2026 as in fiscal year 2025. However, the funding remains strong at INR 2.7 trillion, as the government continues to focus on modernization and improving safety standards.

Over the fiscals 2026-2030, construction opportunities worth INR 6.5-7.5 trillion are expected in the sector, with several major projects in the pipeline. These include the development of new railway corridors for energy, minerals, cement, port connectivity, and high-traffic routes, with an estimated investment of INR 5 trillion.

Construction spend in railways



P: Projected
Source: Crisil Intelligence

This sustained construction spends on Railways is expected to boast demand of PEBs as PEBs/ prefabricated buildings are finding increasing applications in the railways sector through portable cabins, row housing, storage houses and platform shelters, owing to multiple benefits, including increased strength and shortened project timelines. Furthermore, use of PEB structures can considerably reduce the construction time and post construction maintenance requirements. Additionally, for bigger steel structures, such as workshop sheds and platform shelters, PEB structures are customised based on the site condition and are lighter, compared with conventionally designed steel structures. This reduces the requirement for steel, which saves cost. The post-construction maintenance requirement of PEB structures is lower, compared with the conventional steel structures, decreasing post-construction expenses as well.

Privatisation and greenfield airports to propel airport capex to Rs 600-650 billion in five years

Airport infrastructure in India has been in focus in recent years, as is evident from the increased capital expenditure in greenfield and brownfield projects. The expansion of airports, including the upgradation of infrastructure/ facilities at airports, is a continuous process, which is undertaken by the Airports Authority of India (AAI) or the airport operators concerned, depending on the operational requirements, traffic, demand and commercial feasibility.

In the past few years, the government had supported the capex in airport infrastructure by developing greenfield and brownfield airports. The government had formulated a Greenfield Airports (GFA) Policy, 2008. Under this policy, the government accorded approval for setting up of 21 new greenfield airports. Of these, 12 have been operationalised.

Crisil Intelligence expects investments of Rs 600-650 billion in airport infrastructure between fiscals 2025 and 2029, compared with Rs 790 billion between fiscals 2020 and 2024. The projected investments are almost evenly split between greenfield projects, such as the Jewar airport, Navi Mumbai airport and Bhogapuram airport, as well as brownfield expansions in Bengaluru, Hyderabad, Guwahati and Chennai.

Increasing focus on indigenous manufacturing of aerospace components

Aerospace and Defence industry deals with the manufacturing and supply of aircraft, helicopters, Missiles, Satellites or components for this equipment. The key driving factor for growth in the industry is the Defence Procurement policy (DPP) and increase in budget allocation for capital acquisition of aircraft related equipment.

Indian government aims at increasing the indigenous production by opening the sector for foreign participation and through schemes like Defense procurement policy of 2016, Make in India, etc.

Subsequently, Defence PSUs such as HAL, have been taking initiatives to increase domestic sourcing across various components. Hindustan Aeronautics Limited (HAL) Helicopter Factory, India's largest helicopter manufacturing facility, has been inaugurated in 2023 and produce Light Utility Helicopters (LUHs) initially. The factory will begin with producing around 30 helicopters per year and can be enhanced to 60 and then 90 per year in a phased manner.

Additionally, due to the push towards indigenization through DPP- 2016, several foreign players and Indian manufacturers have announced partnerships like Adani group with Swedish aircraft manufacturer Saab, Tata Advanced Systems (TASL) with Lockheed Martin, Mahindra Defence Systems (MDS) and HAL with Boeing, etc.

Warehouse and cold storage expansion to be major contributors to PEB demand

Due to increasing e-commerce penetration and changing customer preferences, companies are also investing in warehousing and cold storage facilities. Additionally, due to rapid urbanisation and economic growth in developing countries, various companies are seeking faster and more cost-effective ways to construct their warehouses. Pre-engineered buildings are preferred for their cost-effectiveness and speedy construction compared with RCC buildings. They require less manpower and construction time, leading to cost savings. Increased adoption of pre-engineered buildings in warehouse construction will boost overall pre-engineered market growth. Overall, Crisil projects construction investments in the warehousing (agricultural and industrial) and cold storage (single- and multi-commodity) sectors to rise to reach Rs 460-500 billion over the next five years on expectations of increased demand. This increasing construction spends in warehouse segment coupled with growing penetration of PEB in warehousing, is expected to provide a fillip to the overall pre-engineered steel building industry.

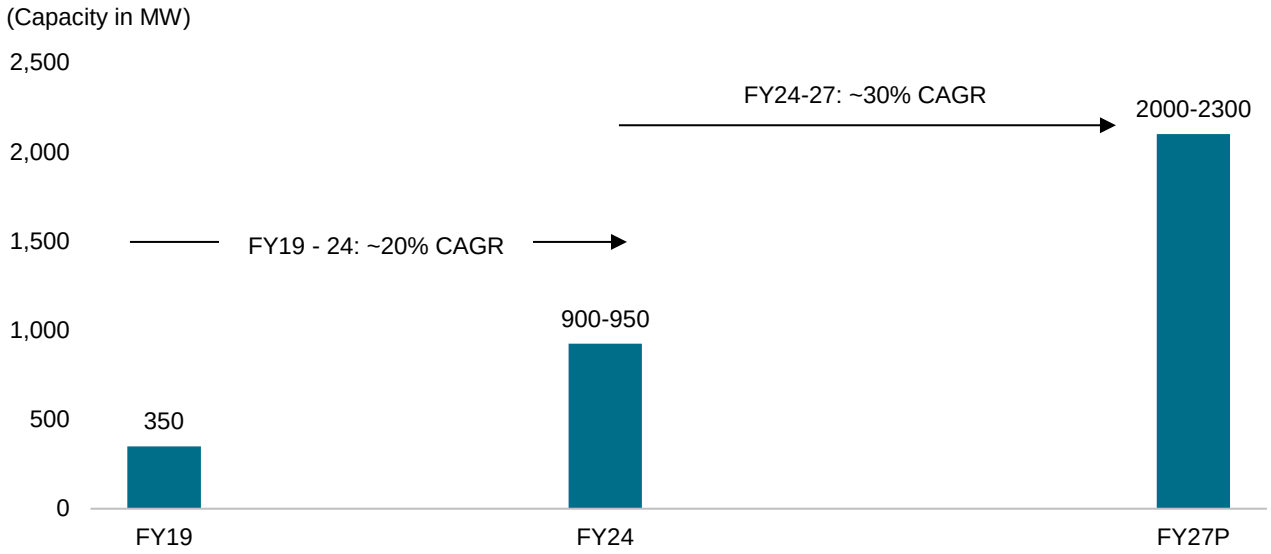
Increasing demand of data centres in India

From fiscal 2019 to fiscal 2024, the Indian data centre industry has seen a growth at CAGR of ~20% in terms of capacity. This growth can be attributed to factors such as growth in internet accessibility, surge in e-commerce adoption, rise in digital adoption, remote working, rise in OTT (over-the-top) consumption, etc.

Additionally, as per the draft Data Centre Policy 2020, data centres to be declared as an Essential Service under The Essential Services Maintenance Act, 1968 (as amended). Furthermore, Data Centre Economic Zones will also be set up for the long-term growth of data centres in India.

These policies combined with the RBI mandate advising all payment system providers to store entire data related to payment systems operated by them in a system only in India is expected to provide impetus to data centre in India, which in turn is expected to boast the demand of pre-engineered steel buildings.

Data centre industry in India (installed capacity)



Note: P: Projected,
"Capacity" refers to the data centre load that is consumed or is dedicated to IT equipment such as servers, storage equipment, communications switches, routers. Power for lighting or cooling the data centre is excluded from IT power. Further, the capacity mentioned in the above chart pertains to third party data centre only.
Source: Industry, company reports, Crisil Intelligence

Rise in government-led innovative construction projects

Policy and regulatory factors play a crucial role in shaping demand, growth and adoption of prefabrication and pre-engineering in the construction sector. For example, government schemes such as PMAY have been instrumental in driving demand and growth of the prefabrication and pre-engineering industry, especially in the housing sector. Light house projects under the ambit of Pradhan Mantri Awas Yojana-Urban (PMAY-U) use distinct technologies to offer affordable and quality housing in an accelerated timeframe.

The increased focus of both central and state governments on providing low-cost housing in the country is expected to boost demand for cold form structures in the future. Additionally, government initiatives such as the light house project are expected to encourage wider adoption of such technologies across India, thereby driving demand for prefabricated and pre-engineered construction structures.

Summary of growth drivers

Sector	Growth drivers
Overall	• Low per capita steel consumption in India along with government schemes like National Steel Policy, which aims to boast domestic steel production is expected to the help the PEB industry which is highly dependent on few steel suppliers. • Approval of specialty steel under Production Linked Incentive (PLI) Scheme with a budgetary outlay of Rs 63.2 billion and capacity addition of 25 MT will positively impact the availability as well as quality of steel as a raw material.
Industrial/ Manufacturing	• Industrial capex averaged INR 4.3 trillion per annum in fiscal 2021-2025E. Investment are expected to reach – INR 7.1 trillion by fiscal 2030, marking an average annual increase of 1.6x, driven by higher capacity utilisation, string corporate balance sheets and the PLI scheme targeting multiple sectors.

Sector	Growth drivers
	• Over fiscals 2026-2030, the PLI scheme and emerging sector are set to account for a quarter of the country's capex from 12% in fiscal 2021-2025, emphasising the growing importance of these sectors in India's industrial landscape. • Based on an analysis of eight key sectors, Crisil Intelligence estimates construction investment in the industrial sector at INR 4-5 trillion over fiscals 2026-30, compared with INR 4 trillion spends in fiscals 2021-25. • Construction spends across industrial investments in fiscal 2026 are seen rising 3-4% driven by expansion in oil and gas and metals segment. This growth is on a high base of FY25 where the sector grew due to deferred investments from FY21 and FY22 and capex investments from PLI scheme picking up • Increasing popularity of green and sustainable buildings, along with the benefits of faster construction time and reduced material wastage is expected to increase adoption of PEB. • Growing penetration of EV vehicles in India led by favourable government initiatives like FAME, reduction of GST will require robust EV infrastructure.
Infrastructure	• Growing demand from warehouses and cold storage due to increase in the penetration of ecommerce in India. Additionally, post implementation of GST as well as shift to hub and spoke models, large PLI players have started investing in PEB warehouses. • Construction investments in this sector are expected to be ~INR 50-55 trillion between fiscals 2026 and 2030, up from INR 34 trillion between fiscals 2021 and 2025. • Increase in the demand of data centres India along with RBI mandate to store payment data locally in India, will boast the demand of pre-engineered steel buildings in India owning to increasing penetration of PEBs in data centres. • Growing focus on renewable energy capacity additions will require substantial capex in this field.
Building	• Low share of pre-engineered steel construction in building construction (~0-1% as of FY25), along with increasing awareness of PEB in India will positively impact the demand of PEB. • Over fiscals 2026-30, the construction spends in this sector is expected to rise to Rs 18-19 trillion from Rs 13 trillion in the period between fiscals 2021 and 2025. • Rise in government-led innovative construction projects like Light house project under the ambit of PMAY- U will provide more awareness of non-conventional construction methods like PEB in India.

Source: Crisil Intelligence

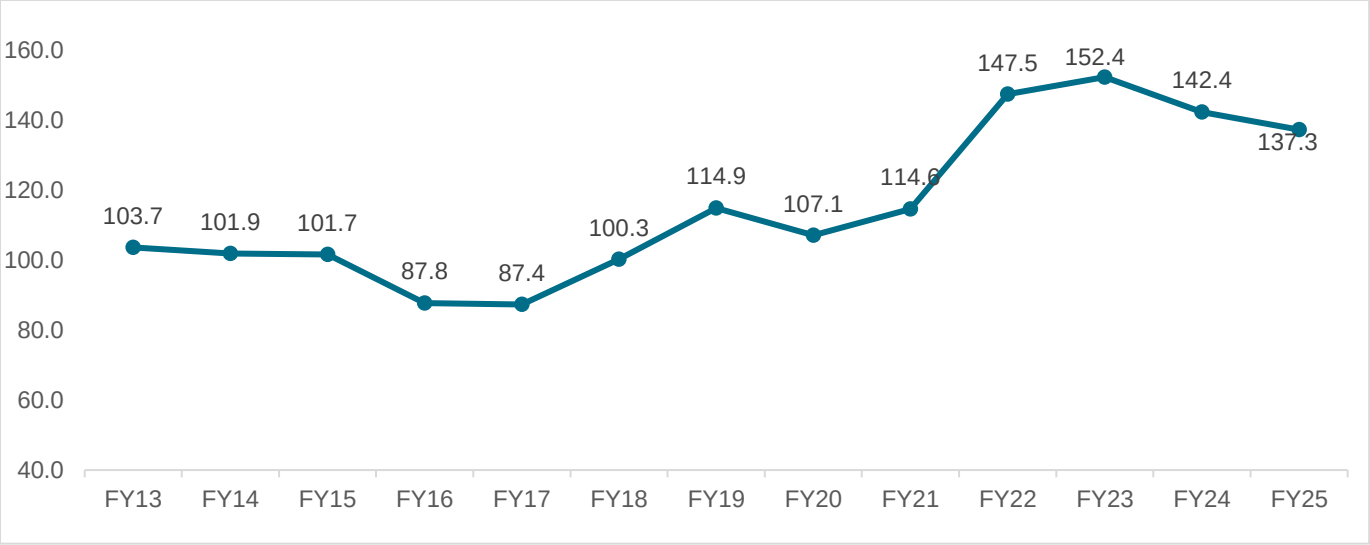
Key challenges

Vulnerability to fluctuations in raw material prices

Prices of raw materials, mainly steel, could affect project costs, profitability and project timelines. According to industry sources, the pre-engineered steel building industry relies heavily on a limited number of high-quality steel suppliers, including Tata Steel, Nippon Steel, ArcelorMittal Nippon Steel India, Steel Authority of India Ltd, Jindal Steel & Power Ltd, etc, for raw materials such as hot-rolled (HR) coils and high-grade S345 MP. The limited base gives these suppliers significant negotiating power, and the dependence on a small pool of suppliers makes the industry susceptible to supply-chain issues.

Due to high dependence on steel, the ability of players to tackle challenges related to input costs and working capital becomes crucial for the industry's success. Additionally, steel prices are also susceptible to global geopolitical events, which further emphasises the need for strategic resource planning.

Trend in mild steel prices –long and flat products



Source: Office of Economic Advisor, Crisil Intelligence

Transportation challenges

As pre-engineered structures are manufactured offsite, transportation of these structures to the construction site involves logistics expenses, which are a function of the distance and the complexity of the transportation process and can significantly impact the overall project cost. Furthermore, these components are susceptible to damage during transportation and handling and may require rework or replacement, which, in turn, could lead to additional costs and project delays.

Hence, increasing distance between the installation site and the manufacturing plant may impact price competitiveness.

Additional safeguards to withstand natural disasters

Construction projects, including pre-engineered structures, must adhere to building standards to ensure they can withstand earthquakes and other seismic events. However, the intensity and frequency of seismic events such as earthquakes depend on the geological setting and may vary based on the location. Hence, pre-engineered structures should be designed after due consideration and study of the seismic classification and history of the construction site.

However, this can complicate their design and manufacturing process and may involve incorporating additional engineering measures and special materials to enhance the structural durability of such prefabricated structures.

Furthermore, even in the event of a fire, certain components of pre-engineered buildings, such as flange braces, sag rods and cross bracing rods, are susceptible to damage. Flange braces and sag rods are particularly prone to snapping, while cross bracing rods may lose their tensile strength, thereby compromising the overall stability of the building. The use of fire-retardant intumescent paint, while highly effective, is often limited due to its prohibitive cost. Consequently, its application is reserved for specialised cases, highlighting the need for alternative methods and materials to safeguard pre-engineered structures against fire-related risks.

Medium capital outlay and fragmented industry

The pre-engineering industry does not require significant upfront capital investments in terms of manufacturing facilities and suitable technology, leading to fragmentation with multiple manufacturers, suppliers and contractors operating independently. Hence, intense competition is impacting margins of players.

Moreover, players in the unorganised industry may compromise on quality standards to ensure price competitiveness, which may weaken the structural security of the building. For instance, a metal building collapsed in 2014 near Nagpur due to structural instability and the intervention of multiple stakeholders — there was a different design engineer, supplier of plates, fabricator of primary frame, and supplier of cold formed sections and sheeting. Multiple erectors tried to erect the pre-engineered structure, but it eventually collapsed. Additionally, according to a study published in International Research Journal of Engineering and Technology (IRJET), most of the pre-engineered structures collapse due to neglect of cross bracing and most of the structures, categorised as impending and deemed failures, are often executed by unorganised fabricators.

Design limitations

Standardisation of pre-engineered components often results in modular sizes and shapes, limiting the freedom to create highly unique or unconventional designs that require non-standard dimensions. Structural constraints must be carefully considered in manufacturing pre-engineered structures to ensure the stability and safety of the structure. This imposes limitations on architects/designers in terms of design that can be structurally feasible. Furthermore, the integration of pre-engineered structures with traditional onsite construction can introduce additional challenges, which can exacerbate in difficult terrains.

Limited knowledge and lack of skilled manpower

The pre-engineered construction industry in India is in its infancy, because of which there is a shortage of skilled personnel with adequate technical knowledge of these structures. Designers play a crucial role in creating designs for the successful implementation and integration of pre-engineered buildings, but not all designers may possess adequate knowledge and experience in modular construction techniques. Despite the growing awareness about pre-engineered structures, traditional construction methods often dominate architectural education and practice. This results in a knowledge gap in understanding the specific requirements of pre-engineering.

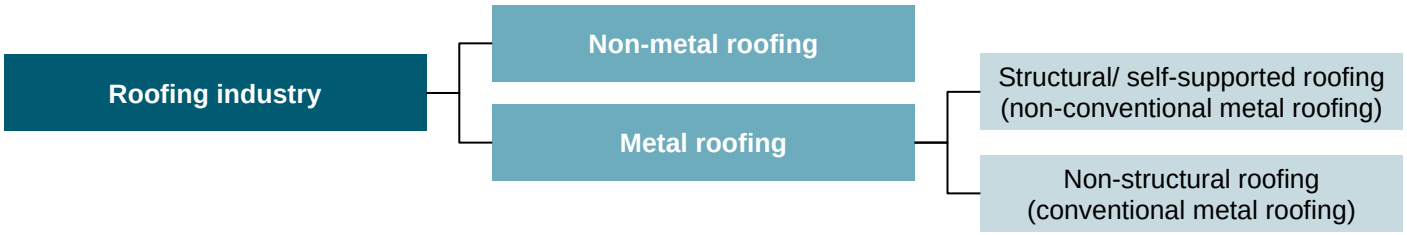
5 Assessment of the self-supported roofing industry

5.1 Overview of self-supported roofing

The roof of a building serves as its topmost structural covering forming an enclosed space to shelter its habitants and protect the enclosed space from rain, heat and wind. A roof also comprises structural elements that support the roof coverings, which are chosen based on several factors, including cost effectiveness, availability, durability and aesthetic appeal, among others.

The roofing industry can be broadly divided into metal and non-metal. Non-metal roofing includes roofing made of materials such as ceramic tiles, Teflon fabric, shingles and wood, among others. The metal roofing comprises roofing made of aluminium, galvalume steel and copper, among others. Metal roofing can be further bifurcated into structural/ self-supported and non-structural.

Classification of the roofing industry



Source: Crisil Intelligence

A self-supported steel roofing system can cover wide spans eliminating supports such as purlins or beams. The span distance that can be achieved depends on various factors including the type of roofing panel utilised, and the safe loads that can be taken by the requirements of the roof. This capability to achieve large spans without any structural and continuous support not only provides additional space, but also reduces the need for extensive support structures, thus offering cost and material saving advantages in construction projects.

On the other hand, conventional metal roofing requires continuous structural support or closely spaced secondary support elements, such as purlins, channels or trusses, which provide crucial reinforcement and stability to the roofing system. By mandating consistent support, conventional metal roofing systems may require more material and labour during installation, compared with their self-supported roofing counterparts.

By mandating structural consistent support on which roofing sheets are resting and fixed, the conventional metal roofing systems may require more materials and labour during installation compared to their self-supported steel roofing counter parts.

Self-supported steel roofing majorly finds its usage in many of industrial and commercial constructions in industries, such as warehousing, railways, cement plants, manufacturing units, food processing units, factories, convention centres, sports complexes, worldwide.

5.2 Key advantages of self-supported roofing

Advantages	Description
Structural stability through arch design	In a self-supported roofing system, stability is guaranteed through an arch design principle eliminating the need for truss, purlins or intermediate supports, thus providing larger internal space.
Versatile clear span options	A self-supported roofing system can offer unobstructed clear spans ranging from nine to ~34 metre.
Maintenance-free roofing panels	In a self-supported roofing system, roofing panels are mechanically seamed (interlocked) and are free from holes, nuts, bolts overlaps and sealants, which ensures minimal maintenance requirements.
Leak-proof roofing solutions	A self-supported roofing system incorporates mechanical sealing techniques for 100% leak-proof roofs, ensuring protection against water ingress and damage. Reliable sealing mechanisms maintain the roofing system's integrity under diverse weather conditions, safeguarding interior spaces effectively.
Efficient execution and installation	A self-supported roofing system focuses on rapid installation and erection of structure, covering areas, such as 1,500 sq m within 12 hours of timeline. This would aid in minimising construction time and labour costs while optimising the overall project timelines for customers.
Aids in enhancing building environment	Eliminates bird nuisance, contributing to cleaner, more hygienic building environment, in addition to enhancing occupant comfort and well-being.
Extended lifespan	Given the structural integrity, usage of high-quality material, such as pre-painted galvalume aids in avoiding corrosion and leaks, increasing the longevity of the roofing system, with a typical lifespan ranging from 35 to 40 years.

Source: Crisil Intelligence

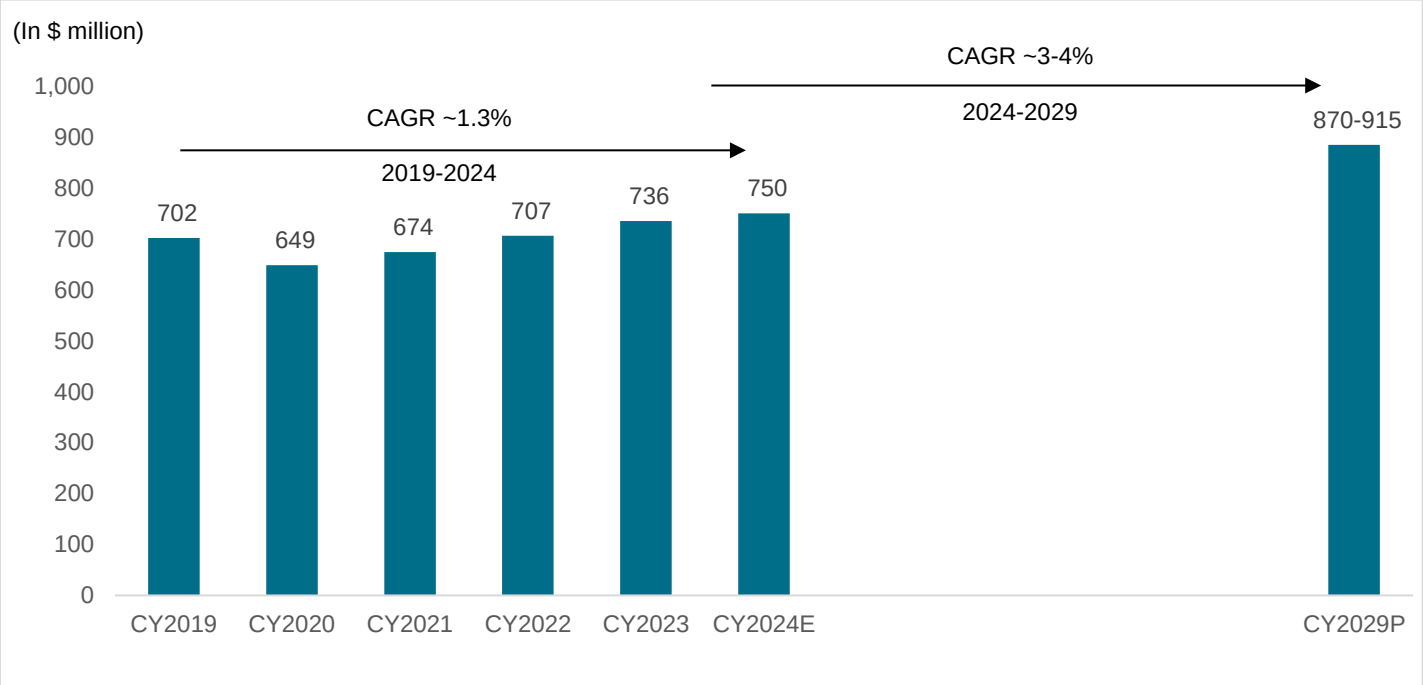
5.3 Overview of self-supported roofing industry

The global self-supported roofing market is expected to log a CAGR of 3-4% between 2023 and 2028

The global self-supported roofing market clocked a CAGR of 1.3% between 2019 and 2024 to reach $ 750 million. This growth can be attributed to increased penetration of non-conventional construction, such as PEBs and awareness of the benefits of self-supported roofing over conventional arrangements. Self-supported roofings are generally made with pre-painted galvalume (PPGL), which provides superior corrosion/ rust-resistance and creates larger enclosed volume, adding thermal comfort of people working under such roofs. These properties make self-supported steel roofing a suitable choice for both infrastructure and industrial structures such as warehouses, factories and railways that are substantially exposed to tough weather conditions, including excessive humidity and high temperatures.

The global self-supported roofing industry is estimated to grow ~3-4% between 2024 and 2029 to reach ~$ 870-915 million by 2029, on the back of increased investments in infrastructure and industrial segments and awareness of the benefits of self-supported roofing over conventional covering.

Global self-supported roofing market

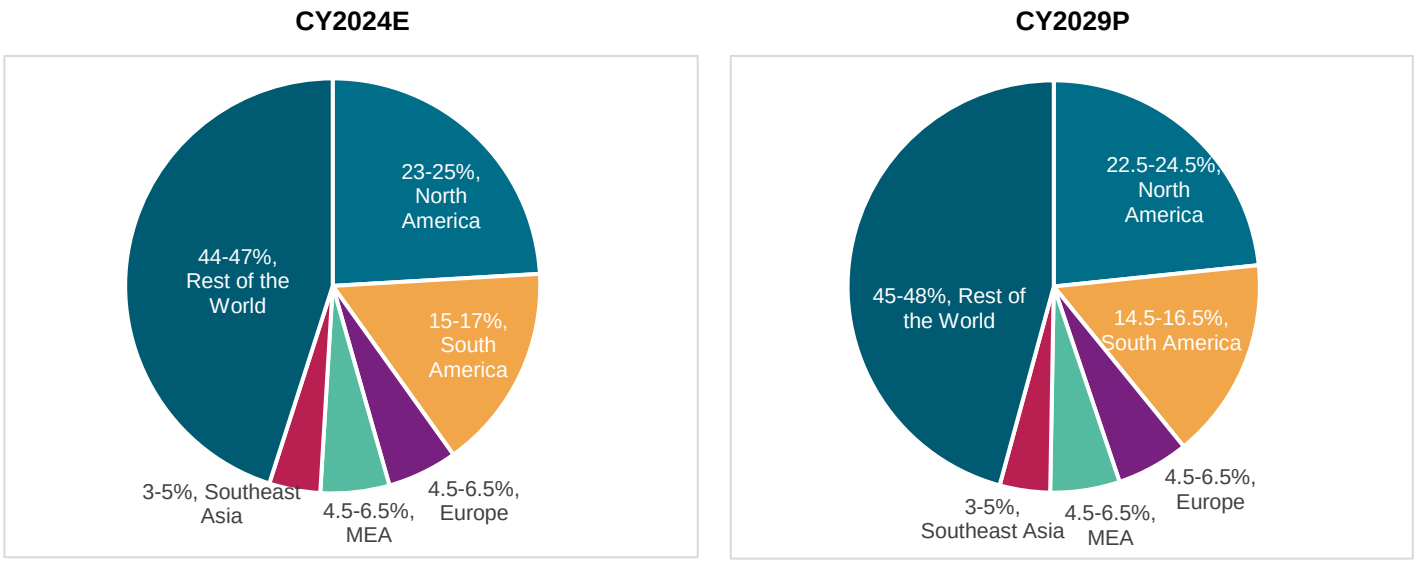


Notes:
E: Estimated, P: Projected
Source: Allied Market Research, Crisil Intelligence

Self-supported roofing also known as trussless roofing, steel arch roof, and steel dome roof is a highly diversified market with; North America, South America, and Europe being the prominent markets for self-supported roofing with the market share of 23-25%, 15-17%, and 4.5-6.5% respectively in 2024. The high market share of advanced economies like USA, etc in this market can be attributed to availability of advanced construction technologies, and acceptability of non-conventional roofing systems like self-supported roofing systems. Additionally, burgeoning ecommerce sector in USA is also expected to increase the demand of industrial warehouses. As per US Census Bureau, retail ecommerce segment in USA has increased its share in total retail from 11% ($ 560 billion) in 2019 to 16% ($ 1,167 billion) in 2024, thereby registering a notable CAGR of ~16% between 2019-2024. This expansion of retail and ecommerce trade in USA is fuelling demand for sophisticated logistics and storage infrastructure, which in term is expected to boast the demand of self-supported roof as these roofs provide clear span which maximize the storage capacity and operational efficiency.

Moving forward, the market share of regions like North America, South America and Europe are estimated to be range bound only at 22.5-24.5%, 14.5-16.5% and 4.5-6.5% respectively by CY2029.

Share of key geographies in global self-supported roofing market



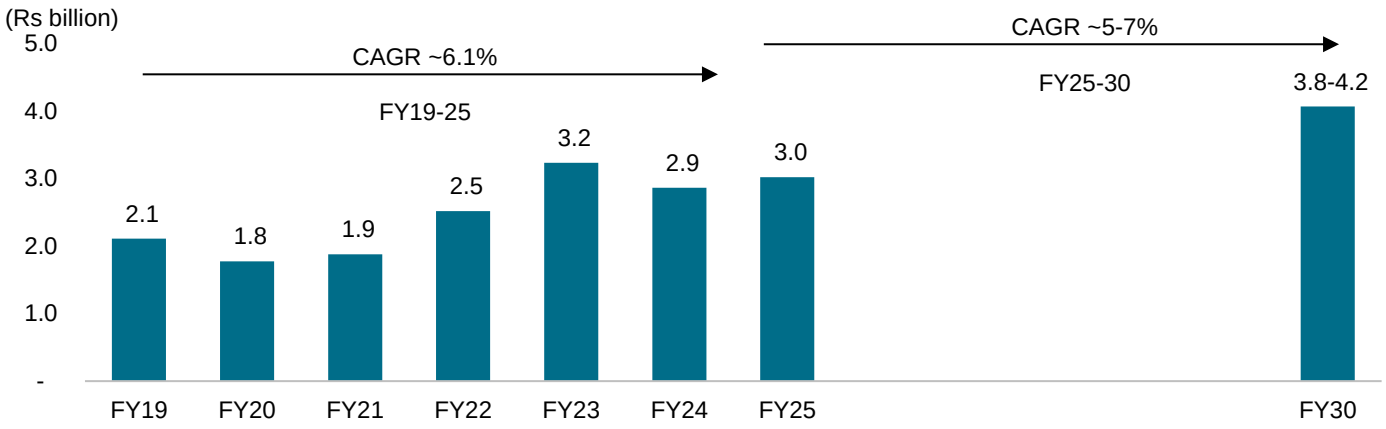
Notes:
E: Estimated, P: Projected
Source: Allied Market Research, Crisil Intelligence

The self-supported roofing market in India grew at a CAGR of 6% between FY19-25

The self-supported steel roofing market in India logged a CAGR of 6.1% between FY19-25 to reach INR 3.0 billion in FY25. This increase in demand can be attributed to growth in infrastructure and industrial segments, which are the major end use segment of self-supported roofing in India, witnessing construction spends of INR 24 trillion and INR 4 trillion, respectively, between FY21-25. Increased investments in the Railways also contributed to the growth as self-supported steel roofing is finding applications at railways stations and sheds, owing to their durability.

Moving forward, the self-supported roofing market in India is projected to moderately grow at a CAGR 5-7% between FY25-30 to reach INR 3.8-4.2 billion by FY30. This growth will be supported by sustained investments in the infrastructure and industrial sectors along with rising awareness of the benefits of self-supported roofing. However, volatility in steel prices and domestic demand will remain key monitorable, given their potential impact on the overall market growth and profitability.

Self-supported steel roofing market in India



Source: Crisil Intelligence

Growth drivers for self-supported roofing industry in India

Growth in industrial warehousing demand

Warehousing plays an active role in various industries, acting as a backbone for storage, logistics and distribution. One of key drivers of the self-supported steel roofing industry in warehousing is the need for large open spaces without internal columns or support. This allows for flexible storage arrangements and seamless movement of goods within the warehouse, optimising utilisation and improving operational efficiency. Furthermore, the expansion of e-commerce and quick commerce has mandated the need for strategically located distribution centres. The COVID-19 pandemic-induced lockdowns provided a thrust to the e-commerce industry in India. The industry witnessed an addition of several first-time buyers, and it is expected many of them would continue their transactions on e-commerce platforms even post-COVID given the convenience these e-commerce platforms provide. In order to improve the convenience offered to their buyers, the e-commerce companies are aiming for quicker deliveries with even services like same-day delivery on offer. In order to possess and enhance their fast delivery capabilities, the e-commerce companies require operational points closer to the city limits. Therefore, it is expected that the e-commerce companies will have an increased need for warehouses near city limits in order to carry out their operations.

A self-supported roof would be advantageous for e-commerce players in the construction of warehouses in prime locations, owing to its low-cost maintenance and faster installation. Thereby resulting in shorter construction timelines. This facilitates efficient last-mile logistics, contributing to the overall efficiency of supply chain operations.

Crisil estimates the growth in demand was around 5-10% with net absorption of 40-45 msf in fiscal 2024, owing to the high base and sharp moderation in the e-commerce segment even though demand from the 3PL segment was robust. However, in fiscal 2025, industrial warehousing demand is estimated to have grown by 19-24%, attributable to the ongoing growth of the 3Pl segment as well as the recent pace of advancement in the manufacturing segment.

Over the long term, the annual demand for Grade A & Grade B warehouses in top 8 Indian cities is expected to grow at a CAGR of 11-16% between fiscals 2025 and 2029. The annual supply is also expected to grow at a similar CAGR of 11-16% in the said period.

This demand will be fuelled by robust 3PL demand from different sectors, such as electronics and white goods, retail and fast-moving consumer goods to optimise the logistics and supply chain of the companies, which makes it a lucrative option for companies in the aforementioned sectors. Additionally, the retail industry also witnessed a marked shift in India since the Covid-19 pandemic. A significantly high proportion of retailers are resorting to omni-channel sales wherein they are pursuing selling of their products on online platforms. Additionally, the retailers are also maintaining higher inventories near city limits to increase the speed of servicing the demand for products and because they have witnessed a reduction in the replenishment cycles. Owing to the trends outlined above, the e-retail industry is expected to continue seeing expansion of fulfilment centres and dark stores. The fulfilment centres will expand near the supply and demand centres, owing to the typical characteristics of the e-retail industry of dynamic order size and low turnaround time.

Government focus on agriculture warehousing

In order to address the shortage of food grain storage capacity in the country, the Government in May 2023, has approved the “World’s Largest Grain Storage Plan in Cooperative Sector”, which is being rolled out as a Pilot Project in different states/UTs of the country.

The Plan entails creation of various agri infrastructure at Primary Agricultural Credit Societies (PACS) level, including setting up decentralized godowns, custom hiring center, processing units, Fair Price Shops, etc. through convergence of various existing schemes of the Government of India (GoI), such as, Agriculture Infrastructure Fund (AIF), Agricultural Marketing Infrastructure Scheme (AMI), Sub Mission on Agricultural Mechanization (SMAM) Pradhan Mantri Formalization

of Micro Food Processing Enterprises Scheme (PMFME), etc. Under these schemes, PACS can avail subsidies and interest subvention benefits for construction of godowns/storage facilities and setting up of other agri infrastructure.

Further, NABARD is also extending financial support to PACS by refinancing them at highly subsidized rates of around 1 percent, after incorporating the benefits of 3% interest subvention under AIF scheme for projects up to Rs. 20 million. Therefore, the plan aims to strengthen the economic condition of PACS by diversifying their business activities and giving them additional sources of revenue thus improving their financial sustainability.

States/ UTs and National level Cooperative Federations, like National Cooperative Consumers Federation (NCCF) and National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED), have identified 1,711 PACS for creation of storage capacity under the Pilot Project. As of December 2023, construction of godown is going in 13 PACS of 13 States/ UTs under the Pilot Project.

This growth in agricultural warehousing further amplifies the need for self-supported roofing solutions. These roofs, free from leaks and bird nuisance, enable to preserve the food quality and reduce the agricultural spoilage. In FY24, the production of key crops was below optimal levels due to poor monsoon caused by the El Nino weather phenomenon, resulting in a YoY demand growth of only 2-3% in agricultural warehousing. However, in FY25, the production of key crops are likely to increase materially due to the low base of the previous year and other factors such as greater acreage and high prices. Furthermore, restrictions on exports are also likely to bode well for domestic agri-warehousing demand. Consequently, the agri-warehousing demand is likely to grow by 3-5% on-year.

Over FY25-29, Crisil expect agricultural warehousing demand to clock 2-4% compound annual growth rate (CAGR), reaching around 0.8 billion sq ft, backed by expectations of normal monsoons and sufficient reservoir levels.

Growth in railway investments

Crisil estimates construction investment in railways to have increased to INR 1.2 trillion in FY25. The rise is post an expected rise of 15% CAGR in construction investments of Railways between FY21-24.

Over the fiscals 2026-2030, construction opportunities worth INR 6.5-7.5 trillion are expected in the sector, with several major projects in the pipeline. These include the development of new railway corridors for energy, minerals, cement, port connectivity, and high-traffic routes, with an estimated investment of INR 5 trillion. In the freight sector, the Eastern Dedicated Freight Corridor (DFC) is fully operational, while only 100 km of the Western DFC remains under construction, expected to be completed by the end of this fiscal year. Additionally, work will soon begin on three new freight corridors – East Coast, East-West, and North-South, covering 4,358 km at an estimated cost of INR 0.8-0.9 trillion.

The government is also focusing on railway safety and station redevelopment. The KAVACH safety system is being installed to reduce accidents, while the Amrit Bharat Station Scheme aims to modernize and upgrade railway stations, creating an additional INR 0.8 trillion investment opportunity. These initiatives highlight the government’s commitment to transforming the railway sector, making it safer, more efficient, and better connected.

These initiatives and investment growth is expected to contribute positively to self-supported roofing demand. Infrastructure projects in railways, including stations, Limited Height Subway (LHS), washing lines, workshops, car sheds, and maintenance facilities, require roofing solutions that are durable, leak-proof and time efficient. As self-supported roofing systems provide multiple benefits including these, these become the preferred choice in multiple investment projects. Hence, the demand for self-supported roofing is estimated to grow further.

Growing demand for new-age roofing systems

As construction practices and technology evolve, acceptance of and demand for new roofing systems, such as self-supported roofing, metal sheets, etc, has been growing.

Self-Supported steel roofing provides structural integrity and durability to the building. Its flexible design optimizes space utilization and architectural design. Furthermore, it also streamlines project timeline by reducing delays, allowing for quicker completions and potential long term cost savings.

As technology advances further, companies will have access to more sophisticated engineering software for better understanding of roof dimensions. This will help ease the technical requirements of non-conventional roofing systems, which will further provide impetus to self-supported roofing systems.

Growing revenue of MSME segment

Micro, small and medium enterprises (MSMEs) segment forms an integral part of economy in terms of its contribution in GDP, employment, exports and lending. Despite hiccups created by pandemic over the last several quarters, recovery across most SME sectors is evident in recent months. In long term, the segment will continue to offer attractive business opportunities for financiers.

The MSME sector's revenue is estimated to have grown by ~5% in fiscal 2025 and is projected to grow by 6-7% on-year in fiscal 2026 led by consumption and healthcare led sectors. Demand for chronic therapies in domestic market coupled with improved exports in regulated and semi-regulated market will benefit the healthcare sector. In the consumption services vertical, increasing enrolments and fee hikes will support growth of coaching classes. While in the consumption industrial vertical, demand from the OEM segment followed by replacement and export markets will aid auto component sector revenue growth.

This growth of MSME sector is anticipated to drive the demand of new infrastructure like warehouses, manufacturing units, commercial spaces, etc. This, in turn is expected to boast the demand for self-supported roofing.

Key challenges of the self-supported roofing industry

Growth drivers	Description
Shortage of qualified workforce	• Self-supported roofs are usually made on site. They are custom-made as per building measurements. Hence, planning, designing and installation requires specialised skills. Shortage of skilled labour can lead to potential delays in project timelines and higher labour cost.
Fluctuating raw material cost	• The cost of primary raw materials such as steel and PPGL can be an issue due to geopolitical concerns and global supply chain disruptions. This would not only delay the project but also lead to cost overruns.
Lower awareness compared to traditional roofing systems	• Due to low awareness of self-supported roofing in India, traditional roofing methods are often preferred due to familiarity, availability of the labour and established practices. Lack of awareness about the benefits of self-supported roofing also leads to reluctance in adoption, limiting the growth of the self-supported roofing industry.
Large unorganized market	• The self-supported roofing industry is fairly unorganized with multiple small players operating in the market. This leads to varied pricing as inconsistent quality, creating difficulties in identifying reliable suppliers with good quality products. • Additionally, the substantial presence of unorganized sector also intensifies competition and exerts pricing pressure.
High entry barriers	• Entry in self-supported roofing market involves significant barriers, including moderate capital requirements, access to advance equipment and specialized technical expertise. • Additionally, large corporates usually prefer players with a strong market presence and proven past performance, creating additional challenges for new entrants to gain foothold in the market.

Source: Crisil Intelligence

6 Assessment of competitive landscape of pre-engineered buildings industry in India

In this section, Crisil has analysed some key players operating in the integrated PEB industry in India. Integrated players provide end-to-end PEB solutions, including design, engineering, fabrication and onsite delivery and installation.

Major steel players such as Steel Authority of India Limited (SAIL), Rashtriya Ispat Nigam (RINL), Tata Steel Limited Group (TSL), ArcelorMittal and Nippon Steel (AM/NS), Jindal South West Group (JSWL) & Jindal Steel & Power Limited (JSPL) are not considered since major business of these steel players comes from manufacturing steel and steel products, including structural steel products. These steel players supply to integrated PEB players.

Moreover, the list of competitive peers considered in this section is not exhaustive but indicative. Only players providing integrated pre-engineered steel building offerings within a comparable revenue range have been considered in this section.

Data has been obtained from publicly available sources, including annual reports available in the public domain/ filed with the Registrar of Companies (RoC), investor presentations of listed players, regulatory filings, rating rationales, and/or company websites and social media pages. Financials in the competitive section have been re-classified by Crisil, based on annual reports available in the public domain/ filed with the RoC and financial filings by the relevant players. Financial ratios used in this report may not match with the reported financial ratios by the players on account of Crisil's standardisation and re-classification.

6.1 Overview of key players

Company name	Year of incorporation	Listed/ Unlisted entity[$$]	Business overview[1]
Bansal Roofing Products Limited	2008	Listed	• Bansal Roofing Products Limited was founded in 2008 and is into manufacturing of PEBs, decking sheets, roofing Sheets and Roofing Accessories such as Colour Coated Roof Sheets, FRP Roof Sheets, and Polycarbonate Sheets, etc.
Everest Industries Limited	1934	Listed	• Everest Industries Ltd is a pre-engineered steel building manufacturer in India and has ~90 years of experience in supporting industrial projects, warehousing infrastructure, multi-storey process buildings, composite structures and pipe racks, among others.
Epack Prefab Technologies Limited	1999	Unlisted[2]	• Epack Prefab Technologies Limited is a group company of EPack and has over 24 years of experience. The company offers multiple products/ services including pre-engineered buildings, prefabricated modular buildings, sandwich insulated panels, light gauge steel frames, roofing and cladding solutions, porta cabins and its accessories, etc.
BirlaNu Ltd (formerly HIL Limited)	1955	Listed	• BirlaNu Ltd (formerly HIL Limited) is a CK Birla Group company. The company has multiple offerings in building material solutions including fiber cement humid cure roofing sheets, autoclaved aerated concrete blocks (fly ash blocks), fiber cement board and panels, plumbing solutions, wall care putty, etc.
Interarch Building Products Limited	1983	Listed	• Interarch Building Products Ltd has 40+ years of experience in pre-engineered steel construction related to design, manufacture, logistics, supply and project execution. It has worked with industry players in project development and construction, providing support to industrial, commercial and infrastructure projects.

Company name	Year of incorporation	Listed/ Unlisted entity[$$]	Business overview[1]
Kirby Building Systems & Structures India Private Limited*	2005	Unlisted	• Kirby Building Systems & Structures India Pvt Ltd is engaged in the business of manufacture and construction of Pre-Engineered Buildings/ Steel Structurals / Industrial Racking and components of iron and steel. It executes projects across multiple industries, including industrial, commercial, agriculture and infrastructure. Kirby is a 100% subsidiary of Kuwait-based Alghanim Industries, which has experience of more than 40 years in PEB industry.
M & B Engineering Limited	1981	Unlisted	• M&B Engineering Ltd is an engineering solutions provider for construction of steel structures in India, engaged in the manufacturing of pre-engineered buildings (PEBs), self-supported steel roofing solutions and structural steel components. • The group provides turnkey solutions for engineering and infrastructure projects. The company deals in pre-engineered buildings, structure steels, steel roofing and components thereof.
Pennar Industries Limited	1975	Listed	• Pennar Industries Ltd has experience of over 48 years in offering multiple products/ services, including PEBs and structural steel buildings across sectors such as commercial and high rises, industrial and distribution facilities, health and education buildings, and stadium and leisure centres, etc.
Zamil Steel Buildings India Private Limited	2003	Unlisted	• Zamil Steel Buildings India Private Limited was incorporated in 2003. The company is engaged in the business of designing, manufacturing, supply of Steel Structural materials, PEBs and parts thereof. Its corporate office is located in Pune. Overall, Zamil Steel has over 45 years of experience in this segment (Zamil Steel Pre-Engineered Buildings Co. Ltd. was established in 1977 in Dammam, Saudi Arabia.)

Notes:
**Data from international website*
$$ Status as of 5th Feb 2025
[1] Details about sector presence of the companies are taken from respective company websites and are not exhaustive.
[2] EPack Prefab Technologies Ltd have filed DRHP on 21st January 2025
Note: This list is indicative and non-exhaustive.
Source: Company websites, annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

PEB related Manufacturing plants and capacity

Company name	Manufacturing plants*	Installed capacity (MT/ annum) *
Bansal Roofing Products Ltd[1]	1	24,000
Everest Industries Ltd[2]	2	72,000
EPack Prefab Technologies Ltd[3]	3	133,924
BirlaNu Limited (formerly HIL Limited)[4]	N.A.	N.A.
Interarch Building Products Ltd[5]	5	161,000
Kirby Building Systems & Structures India Pvt Ltd[6]	3	300,000
M & B Engineering Ltd[7]	2	103,800
Pennar Industries Ltd[8]	2	90,000
Zamil Steel Buildings India Pvt Ltd[9]	1	100,000

N.A.: Not available
The values in the above table are on as reported basis, in line with the notes below and reflects the latest available information
** Related to PEB/structural steel*

1 As per Bansal Roofing Product Limited annual report 2024, it has a manufacturing plant in Savli Taluka of Vadodara district. Additionally, the company has capacity to produce up to 1,500 MT per month of roll forming products and 500 MT per month of pre-engineered buildings (PEB). The above capacity is derived based on 2 shifts of 8 hours each.
2 According to Annual report of Everest Industries Ltd for FY24, it has capacity of 72,000 MT related to PEB. Everest has two manufacturing facilities related to PEB as per its website accessed in June 2025.
3 As per EPack Prefab Technologies Ltd DRHP filings, the companys' pre-engineered steel building capacity comprises of three manufacturing facilities having an aggregate installed capacity of 133,924 MTPA as on 31st December 2024
4 As per BirlaNu Limited (formerly HIL Limited) fiscal 2024 annual report, company has 32 manufacturing facilities (including in Germany and Austria)
5 As per Interarch Building Products Ltd Q4FY25 investor presentation, it had aggregate installed capacity of 161,000 MTPA and 5 manufacturing facilities in Uttarakhand, Andhra Pradesh & Tamil Nadu
6 Kirby Building Systems network produces ~515,000+ MT per annum across 7+ plants globally and 300,000 MT per annum in India as per its website accessed in June 2025
7 M&B Engineering Ltd has two manufacturing facilities at Sanand, Gujarat and Cheyyar, Tamil Nadu for the manufacturing of PEBs and complex structural steel components with a combined installed capacity of 103,800 MTPA as of March 31, 2025 for manufacturing PEBs.
8 Pennar Industries has 13 manufacturing plants as per its Q4 FY25 investor presentation. The company has 2 manufacturing plants related to PEBs in India as per its Q4 FY25 investor presentation. Pennar Industries has manufacturing facility near Hyderabad with a production capacity of 90,000 MT per annum for steel buildings as per its website accessed in June 2025.
9 Zamil Steel operates 12 manufacturing facilities around the world as per its website accessed in June 2025. Zamil Steel manufactures a total 500,000 MT of fabricated steel per annum as per its website accessed in June 2025.
Figure in the table represents capacity of the Ranjangaon, Pune manufacturing plant of the company (Pre-engineered buildings capacity of 80,000 MT per annum + Structural Steel fabrication capacity of 20,000 MT per annum)
Source: Company filings, annual reports available in the public domain/ filed with the RoC, company websites, Crisil Intelligence

- M&B Engineering Ltd is one of India's leading Pre-Engineered Buildings (PEB) players (installed capacity being greater than 100,000 MTPA - M&B Engineering has installed capacity of 103,800 MTPA for PEB structures and 1,800,000 square metres per annum for self-supported roofing solutions as of March 31, 2025)
- M&B Engineering Ltd.'s Sanand Facility is the only PEB manufacturing facility in India with a certification from the American Institute of Steel Construction (AISC), as per AISC website

6.2 Overview of key financial parameters

Vertical overview

Company	Vertical Information	Revenue contribution**
Bansal Roofing Products Ltd*	1. Manufacture of Pre-Engineered Building and Roofing Products.	100%
Everest Industries Ltd[1]	1. Building Products (includes manufacturing and trading of roofing products, boards and panels, other building products and accessories	65%^^
	2. Steel Buildings (consist of manufacture and erection of pre–engineered and smart steel buildings and its accessories)	35%^^
EPack Prefab Technologies Ltd^	1. Pre-engineered and Prefabricated Building Solutions	82%
	2. EPS (Expanded Polystyrene) Packaging	18%
BirlaNu Limited (formerly HIL Limited))[1]	1. Roofing solutions- Manufacturing and distributing Fibre Cement Sheets, Non-asbestos Cement Sheets, Block joining mortars	31%^^
	2. Building Solutions- Manufacturing and distributing Fly Ash Blocks, Boards, Aerocon Panels and Dry-mix	15%^^

Company	Vertical Information	Revenue contribution**
	3. Polymer Solutions- Manufacturing and distributing Pipes & Fittings, Wall Putty and Construction Chemicals	20%^^
	4. Flooring Solutions- Manufacturing and distributing Laminate, Engineered and Resilient Flooring, Skirtings and Wall Panel products	34%^^
	5. Others- Wind Power, Material Handling and Processing Plant and Equipments	0%[2]^^
Interarch Building Products Ltd*	1. Manufacturing, supply, erection and installation of pre-engineered buildings, metal roofing & cladding system and metal false ceilings	100%
Kirby Building Systems & Structures India Pvt Ltd#	1. Manufacture and construction of Pre-Engineered Buildings/ Steel Structurals / Industrial Racking and components of iron and steel. It also provides designing, drafting, and engineering services for construction of Pre-Engineered Buildings/ Steel Structurals/ Industrial Racking and components of iron and steel.	100%
M & B Engineering Limited@	1. Phenix division (product portfolio for the Phenix Division consists of pre-engineered buildings and structural steel. Offerings under PEBs includes main frames, secondary structural components, accessories, etc. Structural steel offerings including H-Type Beams, I-Type Beams, etc.	77%
	2. Proflex division (manufacture and install self-supported steel roofings)	23%
Pennar Industries Ltd [1] [4]	1. Diversified Engineering (railways-wagons, steel, solar module mounting solutions, industrial boilers & heaters, chemicals & fuel additives, solar panels, precission tubes, BIW, hydraulics and auto components.)	52%^^
	2. Custom designed building solutions & auxiliaries (Pre-engineered Buildings, construction equipments and Engineering Services)[3]	48%^^
Zamil Steel Buildings India Pvt Ltd*	1. The Company's activities involve predominantly manufacturing of steel structures and parts thereof, which are considered to be within a single business segment since these are subject to similar risks and returns. Accordingly, steel structures comprise the primary basis of segmental information as set out in these financial statements.	100%

Note:

** These financials are standalone as these companies do not have subsidiaries*

***Revenue contribution is considered as disclosed in the respective company's annual report and have not been reclassified by Crisil*

#Financials for Kirby Building Systems & Structures India are on a calendar year basis (e.g., in the above table, Financial Year 2024 is calendar year 2023, etc)

^^ The numbers are as of FY25 basis Q4FY25 quarterly numbers reported by the companies

^ These are 2024 financial years numbers only

@ Segmental split as of FY25

1 Following formula has been used for calculating revenue contribution: Revenue of the respective segment / Total revenue

2 Revenue contribution of Others- Wind Power, Material Handling and Processing Plant and Equipments for BirlaNu Ltd (formerly HIL Limited) stood at ~0.2% in fiscal 2025

3 Pennar industries' custom designed building solutions & auxiliaries vertical includes revenue from pre-engineered buildings, construction equipments and engineering services.

Source: Company annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

Revenue from operations (fiscal 2022-2025)

Company Name (Rs million)	FY22	FY23	FY24	FY25	CAGR (FY22-24)
Bansal Roofing Products Ltd*	725.9	932.5	1,057.0	966.3	20.7%
Everest Industries Ltd^	13,647.1	16,476.3	15,754.5	17,228.2	7.4%
EPack Prefab Technologies Ltd^	4,501.1	6,567.6	9,049.0	N.A	41.8%
BirlaNu Limited (formerly HIL Limited)^	35,202.4	34,789.6	33,749.7	36,152.3	-2.1%
Interarch Building Products Ltd*	8,349.4	11,239.3	12,933.0	14,538.3	24.5%
Kirby Building Systems & Structures India Pvt Ltd#	17,248.1	23,123.8	23,957.0	N.A	17.9%
M & B Engineering Ltd^	6,882.3	8,804.7	7,950.6	9,885.5	7.5%
Pennar Industries Ltd^	22,657.5	28,946.2	31,305.7	32,265.8	17.5%
Zamil Steel Buildings India Pvt Ltd*	5,307.3	6,227.9	7,617.5	N.A	19.8%

Note:
FY25 numbers are as per Q4FY25 quarterly reports
**on standalone basis*
 # Financials for Kirby Building Systems & Structures India Pvt Ltd are on a calendar year basis (e.g., in the above table, Financial Year 2024 is calendar year 2023, etc)
^Financial numbers of these companies include verticals other than PEB related and are reported at company level, which may not be completely and directly comparable with the financial numbers of other PEB-focused players
Source: Company annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

Operating Profit Before Depn. Interest and Taxes (OPBDIT) (fiscal 2022-2025)

Company Name (Rs million)	FY22	FY23	FY24	FY25	CAGR (FY22-24)
Bansal Roofing Products Ltd*	57.4	69.1	65.7	91.8	6.9%
Everest Industries Ltd^	689.5	675.2	409.6	299.0	-22.9%
EPack Prefab Technologies Ltd^	355.4	515.3	869.9	N.A	56.5%
BirlaNu Limited (formerly HIL Limited)^	3,914.0	2,229.2	1,244.5	585.8	-43.6%
Interarch Building Products Ltd*	328.9	1,063.8	1,130.2	1,362.4	85.4%
Kirby Building Systems & Structures India Pvt Ltd#	1,727.2	2,086.5	2,594.2	N.A	22.6%
M & B Engineering Ltd^	418.3	664.3	796.2	1,263.8	38.0%
Pennar Industries Ltd^	1,713.6	2,211.9	2,729.7	3,107.5	26.2%
Zamil Steel Buildings India Pvt Ltd*@	(96.6)	82.2	262.1	N.A	n.m.

Note:
n.m.: not meaningful
FY25 numbers are as per Q4FY25 quarterly reports
**on standalone basis*
OPBDIT=Profit/ (loss) for the year - Exceptional items, Share of profit/(loss) of equity accounted investees (net of tax), Share of profit/(loss) from joint venture and Other income + (Finance costs, Depreciation and amortisation, and Total income tax expenses)

 # Financials for Kirby Building Systems & Structures India Pvt Ltd are on a calendar year basis (e.g., in the above table, Financial Year 2024 is calendar year 2023, etc)
^Financial numbers of these companies include verticals other than PEB related and are reported at company level, which may not be completely and directly comparable with the financial numbers of other PEB-focused players
Source: Company annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

Profit after tax (PAT) (fiscal 2022-2025)

Company Name (Rs million)	FY22	FY23	FY24	FY25	CAGR (FY22-24)
Bansal Roofing Products Ltd*	39.4	41.7	35.5	55.4	-5.1%
Everest Industries Ltd^	440.9	423.6	180.0	-36.0	-36.1%
EPack Prefab Technologies Ltd^	195.2	239.7	429.6	N.A	48.3%
BirlaNu Limited (formerly HIL Limited)^	2,104.4	971.0	347.9	-329.0	-59.3%
Interarch Building Products Ltd*	171.3	814.6	862.6	1,078.3	124.4%
Kirby Building Systems & Structures India Pvt Ltd#	1,069.1	1,334.9	1,649.9	N.A	24.2%
M & B Engineering Ltd^	163.1	328.9	456.3	770.5	67.3%
Pennar Industries Ltd^	419.1	754.3	983.5	1,194.5	53.2%
Zamil Steel Buildings India Pvt Ltd*	(204.4)	(66.2)	98.9	N.A	n.m.

Note:
n.m.: not meaningful
**on standalone basis*
FY25 numbers are as per Q4FY25 quarterly reports
 # Financials for Kirby Building Systems & Structures India Pvt Ltd are on a calendar year basis (e.g., in the above table, Financial Year 2024 is calendar year 2023, etc)
^Financial numbers of these companies include verticals other than PEB related and are reported at company level, which may not be completely and directly comparable with the financial numbers of other PEB-focused players
Source: Company annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

Key ratios (fiscal 2024)

Company name	OPBDIT %	PAT%	RoCE%$	RoE%$	RoCE% (inc. total net worth)	RoE% (inc. total net worth)	Net Fixed Assets Turnover Ratio
Bansal Roofing Products Ltd*	6.2%	3.4%	16.8%	13.7%	16.8%	12.8%	3.6
Everest Industries Ltd^	2.6%	1.1%	4.0%	3.1%	4.1%	3.0%	3.3
EPack Prefab Technologies Ltd^	9.6%	4.7%	27.5%	29.9%	24.1%	25.4%	3.8
BirlaNu Limited (formerly HIL Limited)^	3.7%	1.0%	2.2%	3.5%	1.9%	2.8%	2.3
Interarch Building Products Ltd*	8.7%	6.6%	26.9%	20.4%	26.0%	19.4%	7.4
Kirby Building Systems & Structures India Pvt Ltd#	10.8%	6.8%	70.2%	46.5%	54.0%	37.8%	11.0
M & B Engineering Ltd^	10.0%	5.6%	21.8%	22.4%	19.2%	19.7%	5.5
Pennar Industries Ltd^	8.7%	3.1%	16.5%	12.0%	15.3%	11.2%	3.4
Zamil Steel Buildings India Pvt Ltd*	3.4%	1.3%	13.6%	9.5%	10.8%	9.0%	10.2

Note:
N.A.- Not Available
**on standalone basis*
 # Financials for Kirby Building Systems & Structures India Pvt Ltd are on a calendar year basis (e.g., in the above table, Financial Year 2024 is calendar year 2023, etc)
^Financial numbers of these companies include verticals other than PEB related and are reported at company level, which may not be completely and directly comparable with the financial numbers of other PEB-focused players
Formulae used in the above table are as follows:
OPBDIT % = OPBDIT / revenue from operations
PAT % = PAT / total income

RoCE[$] (basis tangible equity) = Profit before interest and tax (PBIT) / average of capital employed
Capital employed: Total debt+ Total Deferred Tax Liability+ Total tangible equity
Return on Equity (RoE)[$] (basis tangible equity) = PAT / average tangible net worth
RoE (including total net worth) = Profit/ (loss) for the year (Excluding share of minority in profits)/ Total equity (Excluding non-controlling interest)
Return on Capital Employed (including total net worth)=EBIT/ Capital employed.
Capital employed is calculated as the sum of Total equity (including non-controlling interest), Non-current borrowings and Current borrowings while EBIT is calculated as OPBDIT add Other income, share of profit/(loss) of equity accounted investees (net of tax) and share of profit/(loss) from joint venture less depreciation and amortization
Net Fixed Assets Turnover Ratio = Revenue from operations for the year/ Net Property, plant and equipment, Capital work-in-progress, Goodwill, Intangible assets, Intangible assets under development and Right-to-use assets
Source: Company annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

Key ratios (fiscal 2025)

Company name	OPBDIT %	PAT%	RoCE%[$]	RoE%[$]	RoCE% (inc. total net worth)	RoE% (inc. total net worth)	Net Fixed Assets Turnover Ratio
Bansal Roofing Products Ltd*	9.5%	5.7%	21.7%	18.2%	20.6%	16.7%	3.3
Everest Industries Ltd^	1.7%	-0.2%	0.8%	-0.6%	0.7%	-0.6%	3.0
EPack Prefab Technologies Ltd^	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BirlaNu Limited (formerly HIL Limited)^	1.6%	-0.9%	-3.4%	-3.5%	-3.0%	-2.7%	2.1
Interarch Building Products Ltd*	9.4%	7.3%	23.5%	18.0%	18.9%	14.4%	6.4
Kirby Building Systems & Structures India Pvt Ltd	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
M & B Engineering Ltd^	12.8%	7.7%	26.1%	28.7%	24.8%	25.1%	5.6
Pennar Industries Ltd^	9.6%	3.7%	16.4%	12.8%	15.7%	11.9%	3.3
Zamil Steel Buildings India Pvt Ltd*	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Note:
N.A.- Not Available
**on standalone basis*
FY25 numbers are as per Q4FY25 quarterly reports
^Financial numbers of these companies include verticals other than PEB related and are reported at company level, which may not be completely and directly comparable with the financial numbers of other PEB-focused players
Formulae used in the above table are as follows:
OPBDIT % = OPBDIT / revenue from operations
PAT % = PAT / total income
RoCE[$] (basis tangible equity) = Profit before interest and tax (PBIT) / average of capital employed
Capital employed: Total debt+ Total Deferred Tax Liability+ Total tangible equity
Return on Equity (RoE)[$] (basis tangible equity) = PAT / average tangible net worth
RoE (including total net worth) = Profit/ (loss) for the year (Excluding share of minority in profits)/ Total equity (Excluding non-controlling interest)
Return on Capital Employed (including total net worth)=EBIT/ Capital employed.
Capital employed is calculated as the sum of Total equity (including non-controlling interest), Non-current borrowings and Current borrowings while EBIT is calculated as OPBDIT add Other income, share of profit/(loss) of equity accounted investees (net of tax) and share of profit/(loss) from joint venture less depreciation and amortization
Net Fixed Assets Turnover Ratio = Revenue from operations for the year/ Net Property, plant and equipment, Capital work-in-progress, Goodwill, Intangible assets, Intangible assets under development and Right-to-use assets
Source: Company annual reports available in the public domain/ filed with the RoC, Crisil Intelligence

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