



Confederation of Indian Industry



Affordable Housing in India

December 2024

This report offers a comprehensive evaluation of affordable housing in India, covering policy measures, demand - supply dynamics and an estimation of housing requirement. It also analyses financing opportunities for financial institutions and suggests strong policy measures that can address the existing challenges in affordable housing segment in India.

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Mumbai HO

Knight Frank (India) Pvt. Ltd.
Paville House, Near Twin Towers,
Off. Veer Savarkar Marg, Prabhadevi,
Mumbai 400 025, India
Tel: 022 6745 0101 / 4928 0101;

Bengaluru

Knight Frank (India) Pvt. Ltd.
First floor, Pinnacle Tower,
Embassy One, # 8,
Bellary Road, Ganganagar,
Bengaluru- 560032,
Tel: 080 6818 5600

Pune

Knight Frank (India) Pvt. Ltd.
Unit No.701, Level 7, Pentagon Towers P4,
Magarpatta City, Hadapsar,
Pune 411 013, India
Tel: 020 67491500 / 30188500;

Chennai

Knight Frank (India) Pvt. Ltd.
1st Floor, Centre block, Sunny Side,
8/17, Shafee Mohammed Road,
Nungambakkam, Chennai 600 006, India
Tel: 044 4296 9000

Gurgaon

Knight Frank (India) Pvt. Ltd.
Office Address: 1505-1508, 15th Floor, Tower B,
Signature Towers South City 1,
Gurgaon 122 001, India
Tel: 0124 4782700;

Hyderabad

Knight Frank (India) Pvt. Ltd.
Western Dallas Centre, 5th floor, Office #3,
Hyderabad Knowledge City,
Survey No. 83/1, Raidurg, Serilingampally Mandal,
Ranga Reddy District, Telangana Hyderabad - 500032
Tel: 040 44554141;

Kolkata

Knight Frank (India) Pvt. Ltd.
PS Srijan Corporate Park
Unit Number - 1202A, 12th Floor,
Block - EP & GP, Plot Number - GP 2,
Sector - V, Salt Lake, Kolkata 700 091, India
Tel: 033 66521000

Ahmedabad

Knight Frank (India) Pvt. Ltd.
Unit Nos. 407 & 408, Block 'C', The First,
B/H Keshav Baugh Party Plot,
Vastrapur, Ahmedabad - 380015
Tel: 079 48940259/ 40380259

Foreword



► **Neel Raheja**
Chairman, CII National Committee on Real Estate and
Group President, K Raheja Corp

India's affordable housing sector represents both a pressing challenge and a transformative opportunity. As rapid urbanization reshapes the country, the demand for affordable housing continues to surge, driven by demographic changes and a growing workforce migrating to urban centers. Meeting this demand is critical to fostering sustainable economic growth and ensuring equitable access to housing for all.

While initiatives like the Pradhan Mantri Awas Yojana (PMAY) have made significant progress, persistent gaps in affordability and access remain, particularly for economically weaker sections. Challenges such as rising construction costs, limited loan accessibility, and the need for greater private sector engagement call for innovative strategies and collaborative solutions.

This report examines the evolving affordable housing landscape, offering a comprehensive analysis of its challenges and opportunities. It highlights the potential of leveraging advanced construction technologies, rethinking financing models, and creating policy frameworks that enable greater public-private collaboration. Addressing these factors holistically will be instrumental in bridging the housing deficit and improving quality of life for millions of Indians.

As Chairman of CII National Committee on Real Estate, I hope this report serves as a valuable resource for industry stakeholders, policymakers, and investors to collectively work towards a future where affordable housing is a reality for all.



► **Shishir Baijal**
Chairman and Managing Director - Knight Frank India

Affordable housing has long stood as a cornerstone of sustainable urban development, addressing not just the housing needs of the underprivileged but also contributing to the broader economic and social fabric of our nation. As India undergoes rapid urbanisation—with urban areas expected to host 40% of the population by 2030—the demand for affordable housing is escalating. Addressing this demand calls for a nuanced approach, integrating policy reforms, financial innovations, and active private sector participation.

This report offers an in-depth exploration of India's affordable housing sector, highlighting critical challenges and opportunities. Notably, despite landmark policies like the Pradhan Mantri Awas Yojana (PMAY), the segment faces a shortfall of over 10 million units. Urban affordability is particularly strained, with rising costs outpacing income growth, leaving economically weaker sections with limited access to formal financing. The report underscores how innovative financing mechanisms, such as impact investments and blended finance models, could be pivotal in bridging this gap, unlocking financing opportunities for banks and housing finance companies by 2030.

Beyond the numbers, this report delves into qualitative aspects, offering actionable insights into zoning regulations, incentivizing private developers, and fostering public-private partnerships. It also emphasises the need for sustainable solutions, such as integrating affordable housing projects with transport infrastructure and advanced technologies.

This comprehensive analysis aims to provide a roadmap for stakeholders to collaborate effectively and create meaningful impact in addressing India's housing deficit, while fostering constructive dialogue to accelerate the realization of affordable housing for millions of Indians.



Affordable Housing in India

Strategies for Bridging the Demand - Supply Gap

Affordable housing has been a long-standing challenge worldwide as well as in India. As per various studies, globally 1.6 bn people lack adequate housing and this is estimated to grow to 3 bn by 2030¹. To close this gap, it is estimated that 96,000 new houses in the affordable segment are required to be built every day². Factors such as rapid urbanisation, decline in public housing, lack of state interventions etc are some of the challenges impacting the widening gap in affordable housing segment across the countries. As the most populous country experiencing the fastest pace of urbanisation, India is likely to witness significant demand for affordable housing in the coming years. In the last few years, policy makers in India have taken substantial measures to address the challenges in affordable housing and cater to the housing needs of the urban and rural poor through various interventions. Flagship initiatives such as the Rajiv Awas Yojana (2009), Pradhan Mantri Awas Yojana (2015), Affordable Rental Housing Complexes (ARHCs) etc. are some of key notable interventions.

¹ 4 practical solutions to the world's spiralling housing crisis, World Economic Forum, July 2024

² 4 practical solutions to the world's spiralling housing crisis, World Economic Forum, July 2024

Key policy initiatives supporting affordable housing in India



Policy/Scheme	Description	Target Group	Year of Initiation	Target
Rajiv Awas Yojana (RAY)	Aims to make India slum-free by providing affordable housing and improving slum conditions	Slum Dwellers	2009	Slum-free India
Pradhan Mantri Awas Yojana (PMAY 1.0)			2015	
- Urban (PMAY-U)	Provides interest subsidies on home loans for urban poor	Economically Weaker Sections, Lower & Middle Income Groups	2015	1 crore houses by 2022 (Further extended to 2024)
- Gramin (PMAY-G)	Financial assistance for constructing/upgrading homes in rural areas	Rural Poor	2015	2.94 crore houses by 2022 (Further extended to 2024)
Affordable Rental Housing Complexes (ARHCs)	Converts government-funded vacant houses into rental housing complexes	Urban Migrants and Poor	2020	Provide affordable rental housing for urban migrants/poor
National Urban Rental Housing Policy (NURHP)	Promotes rental housing as a viable option for urban residents	Urban Residents	2021	Increase rental housing stock
Pradhan Mantri Awas Yojana (PMAY) 2.0				3 crore (30 million) houses by 2029
- Urban (PMAY-U)	Provides interest subsidies on home loans for urban poor	Economically Weaker Sections, Lower & Middle Income Groups	2024	1 crore (10 million) houses by 2029
- Gramin (PMAY-G)	Financial assistance for constructing/upgrading homes in rural areas	Rural Poor	2024	2 crore (20 million) houses by 2029

PMAY 1.0 vs PMAY 2.0

Aspect	PMAY 1.0	PMAY 2.0
Launch Year	2015	2024
Housing Target (In mn)	49.5	30
of which, urban	20	10
of which, rural	29.5	20

Schemes

Urban	<ol style="list-style-type: none"> 1. In-situ slum redevelopment (ISSR) 2. Credit linked subsidy scheme (CLSS)* 3. Affordable housing in partnership (AHP) 4. Beneficiary led individual house construction (BLC) 5. Affordable rental housing complex (ARHC)* 	<ol style="list-style-type: none"> 1. Affordable housing in partnership (AHP) 2. Beneficiary led individual house construction (BLC) 3. Affordable rental housing (ARH)* 4. Interest subsidy scheme (ISS)
Rural	Financial assistance for housing	Financial assistance for housing

Beneficiary eligibility criteria

Urban	<ol style="list-style-type: none"> 1. EWS households with annual income upto INR 0.3 mn 2. LIG households with annual income between INR 0.3 - 0.6 mn 3. MIG I households with annual income between INR 0.6 - 1.2 mn 4. MIG II households with annual income between INR 1.2 - 1.8 mn 	<ol style="list-style-type: none"> 1. EWS households with annual income upto INR 0.3 mn 2. LIG households with annual income between INR 0.3 - 0.6 mn 3. MIG households with annual income between INR 0.6 - 0.9 mn
Rural	Rural BPL Households	Rural BPL Households

Unit Size

Urban (sq mt)	EWS: 30 LIG: 60 MIG I: 160 MIG II: 200	EWS: 30 LIG: 60 MIG: 160
Rural (sq mt)	25	25

Financial Assistance

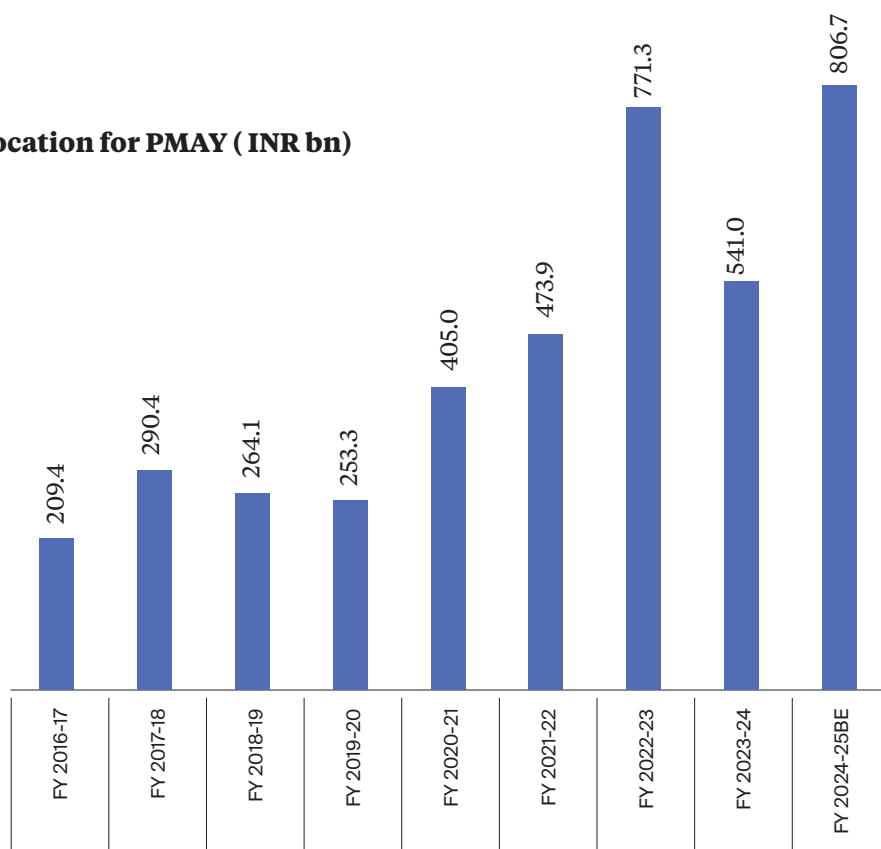
Urban	AHP: Central Assistance of INR 0.15 mn per EWS house BLC: Central Assistance of up to INR 1.5 mn for EWS ISSR: Slum redevelopment grant of 0.1 mn per house	AHP: INR 0.25 mn lakhs combined by central & states BLC: INR 0.25 mn lakhs combined by central & states
Rural	<ol style="list-style-type: none"> 1. INR 0.12 mn in Plains 1. INR 0.13 mn in hilly regions 	<ol style="list-style-type: none"> 1. INR 0.12 mn in Plains 1. INR 0.13 mn in Plains

Interest Rate Subsidy

Urban	EWS: 6.5% LIG: 6.5% MIG I: 4% MIG II: 3%	4% across all the income groups
Rural	3.0%	3.0%

The most recent government scheme has been the introduction of Pradhan Mantri Awas Yojana (PMAY) in 2015 with an objective to facilitate housing needs of the lower and mid income population. The scheme initially envisaged a construction target of 20 mn affordable houses in urban areas and 30 mn houses in rural areas by 2022, implemented through four verticals which include beneficiary led construction/enhancement (BLC), affordable housing in partnership (AHP), in-situ slum redevelopment (ISSR) and credit linked subsidy scheme (CLSS). In August 2022, all verticals of the scheme except the CLSS were extended until December 2024. Owing to the sustained need for affordable housing, PMAY 2.0 was introduced in 2024 with the objective to construct 10 mn affordable houses in urban areas and 20 mn in the rural areas in the next 5 years. While a large part of the scheme under this umbrella was carried forward from the earlier version, PMAY 2.0 reinstated its interest rate subsidy scheme (ISS), earlier known as CLSS, and made a few revisions in its target group. The revision of the policy schemes in PMAY U should potentially enable the central government to use the allocated budget for the marginal sections of the population, primarily the EWS and the LIG income categories.

Central government budgetary allocation for PMAY (INR bn)



Source: Gol, Knight Frank Research



In addition to these flagship programs, policy support measures have also been introduced in recent years such as tax benefits, subsidised GST rates etc as demand and supply side measures for affordable housing in India.. For instance, in March 2019, the GST council implemented a noteworthy reduction in tax rates for the under-construction affordable housing category, bringing it down from 8% to 1%. These measures primarily focus on the consumer, stimulating demand. Complementing these efforts, the central government has also undertaken supply-side initiatives such as tax breaks on profits for the developers.

Key interventions to support affordable housing

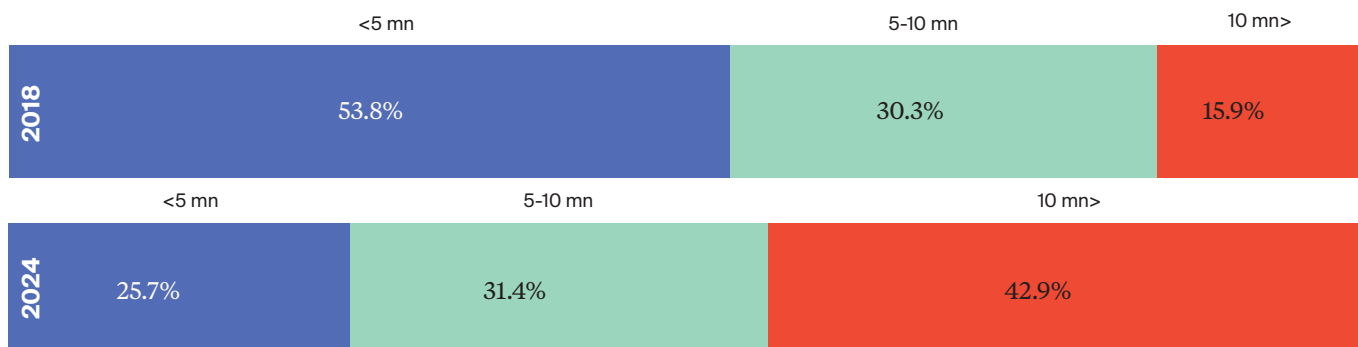
Incentive Type	Details
Tax Benefits	Section 80-IBA: Tax deductions for profits from affordable housing projects approved until March 31, 2022.
	Section 24: Deductions on interest paid on home loans, incentivizing first-time homebuyers.
GST Concessions	GST rate reduced to 1% for 8% earlier from under-construction affordable homes.
Priority Sector Lending (PSL)	Affordable housing projects are included in the Harmonized Master List, making them eligible for priority sector lending rates.
Provision of infrastructure status	Enables benefits such as lower borrowing costs, tax concessions, increased flow of foreign and private capital
Subsidies and Financial Assistance	Affordable Housing Fund (AHF): Established within the National Housing Bank, cost of re-financing is capped at 350 bps over 10-year G sec yield
Public-Private Partnerships (PPP)	Financial subsidies, government land, and cross-subsidies are used to make housing more affordable.
Green Building Incentives	Encouragement for sustainable building practices through incentives for green buildings.

Source: GoI, RBI, Knight Frank Research

However, despite these policy measures, the affordable housing segment in India continues to be challenging. Currently, India's housing market is experiencing an upcycle despite a sharp rise in the interest rates and residential prices. Factors such as growing formalisation of the economy, rising income levels, increasing number of nuclear families, and abundant financing options continue to boost the housing market in India. However, while the mid and the premier housing demand continues to be robust, there has been moderation of sales in the affordable category.

Between 2018 and 2024, there has been a tremendous shift in home sales in India. In 2018, 54% of all residential sales in the top 8 cities of India were concentrated in the affordable category (under INR 5 mn). This share has declined to 26% in 2024 (until September 2024).

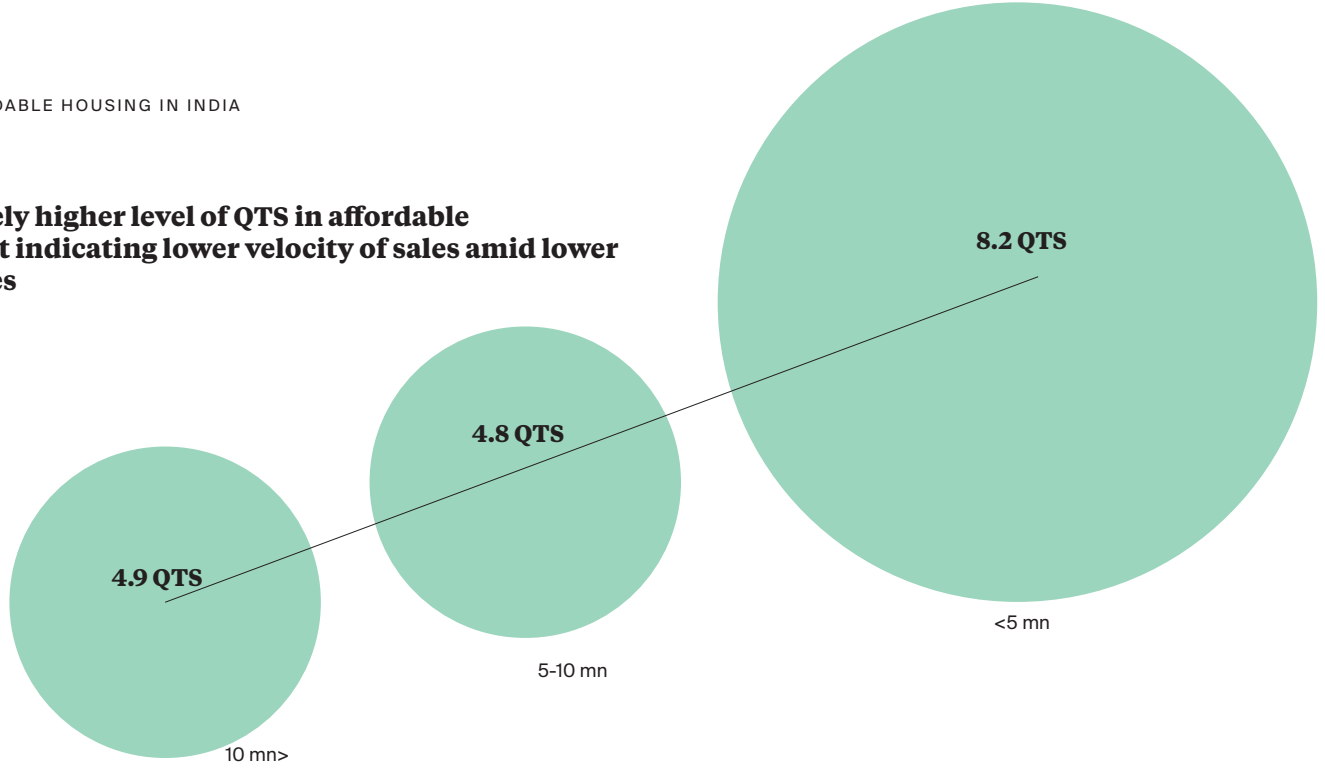
Share of affordable housing sales in total sales



Source: Knight Frank Research;

Note: Sales across top 8 cities in India, 2024 data is until Sep'24, Affordable = <Rs 5 mn, mid-segment = Rs 5-10 mn, premium = >10 mn

Relatively higher level of QTS in affordable segment indicating lower velocity of sales amid lower launches



Source: Knight Frank Research;
 Note: Data for top 8 cities in India, 2024 data is until Sep'24, Affordable = <Rs 5 mn, mid-segment = Rs 5-10 mn, premium = >10 mn

In the subsequent sections, we have assessed the factors impacting the deceleration in the sale of affordable housing in India and identified the key challenges.

Sensitivity of prices and interest rates on housing demand in India

Considering that there has been a moderation in the sales of affordable housing category, we have examined the impact of interest rate and residential prices on the same. To assess the interest rate impact, we have assessed the correlation between the MCLR rate, which is the base lending rate, and home loan disbursal in the country.

Interest rate analysis

Since the onset of the interest rate upcycle in May 2022, the RBI implemented a series of repo rate hikes, summing up to 250 basis points. This increased the repo rate from 4% during the COVID-19 pandemic period to 6.5% currently. Consequently, there has been an immediate pass-through of the repo rate impact on the consumer’s borrowing costs. The Marginal Cost of Funds Based Lending Rate (MCLR), serving as the base lending rate, has risen from 7% during the pandemic to the present 8.95%,³ thereby influencing the borrowing expense for consumers.

Concerning change in interest rates, our assessment reveals an uneven impact of interest rate hikes on housing loan demand. Through our sensitivity analysis, it is apparent that priority sector housing loans demonstrate a higher sensitivity to interest rate hikes when juxtaposed with non-priority housing loans. The table below outlines the correlation assessment between the MCLR rate and housing loan demand in India.

Correlation between interest rate and home loan demand



	All	Priority	Ex Priority	Base lending rate
All	1.00			
Priority	0.17	1.00		
Ex priority	0.54	-0.49	1.00	
Base lending rate	0.31	-0.24	0.67	1.00

Source: RBI, Knight Frank Research
³SBI MCLR rate effective from 15 September 2024

Based on the analysis, it is observed that the correlation between the MCLR rate and priority sector home loans stands at -0.24. While this correlation is modest, its negative sign suggests that an escalation in the interest rate corresponds with a decrease in the demand for priority sector housing loans in India. Thus, it can be inferred that interest rate hikes exert a negative influence on affordable housing in the country.

In addition to interest rates, we have assessed the impact of price rise on the various housing segments. In our analysis, we have calculated the affordability, represented by the EMI/income ratio for the EWS and MIG income groups, regarding interest rate hikes and residential price increases. The analysis reveals an uneven impact on affordability for different income groups.

Impact assessment of interest rate and house price rise on housing affordability

EWS (Annual Income of INR 0.3 mn)			
	Base Case	Interest Rate Impact	Interest Rate + Price Impact
Home value (In INR)	15,00,000	15,00,000	18,75,000
LTV	90%	90%	90%
Loan amount (In INR)	13,50,000	13,50,000	16,87,500
Tenure (in months)	240	240	240
Annual Interest Rate (In %, Base MCLR+ 0.25% premium)	7.25%	9.20%	9.20%
Lending rate (In %, per month)	0.006	0.008	0.008
EMI (In INR)	10,670	12,320	15,401
% change in EMI current vs. Apr 2022		15.5%	44.3%
Income EWS	25000	25000	25000
EMI/INCOME	43%	49%	62%
Above MIG (Annual Income of INR 1.2 mn)			
	Base Case	Interest Rate Impact	Price Impact
Home Value	45,00,000	45,00,000	50,40,000
LTV	80%	80%	80%
Loan Amount (In mn INR)	36,00,000	36,00,000	40,32,000
Tenure (in months)	240	240	240
Annual Interest Rate (% , base MCLR+ 0.25% premium)	7.25%	9.20%	9.20%
Lending rate (In %, per month)	0.006	0.008	0.008
EMI (In INR)	28454	32855	36797
% change in EMI current vs. Apr 2022		15.5%	44.3%
Income MIG	100000	100000	100000
EMI/INCOME	28%	33%	41%

Source: Knight Frank Research,

Note: Assessment excludes interest rate subsidies as they are subject to eligibility under PMAY-U, assuming 12% house price rise for EWS and 17% for MIG

Based on the preceding analysis, it is evident that the EWS group's affordability (EMI/Income ratio) in comparison to the income group above MIG is significantly impacted by the rise in both interest rates and residential prices. During the COVID-19 pandemic, when the lending rates were kept low, the EMI/income ratio for the EWS was 43%. It has now surged to 62%, marking a 19 percentage point increase. This escalation is a consequence of the combined impact of interest rate hikes and price rise. Notably, this ratio exceeds the FOIR limit of 50% established by the banking sector in India, thereby constricting the scope of home loan borrowings for the EWS homebuyers. Besides, this segment finds it challenging to arrange for the increased down payment requirement.

In contrast, the EMI/income ratio of a household above the MIG category with an annual income of INR 1.2 mn, has increased by 13 percentage points, rising from 28% to 41%. And, the affordability as well continues to remain within the FOIR limit established by the banking sector, providing easy access to financing for home purchases.

Thus, to support home purchases for the EWS, it is essential to improve access to finance to the households. This step is vital to address the housing challenges faced by this income group.

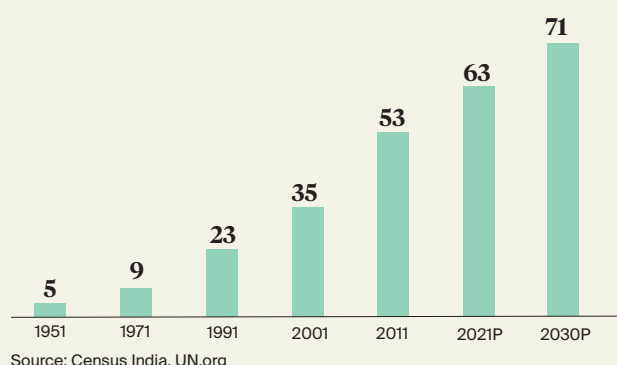


Estimating Affordable Housing Demand by 2030

Currently, India is witnessing one of the fastest paces of urbanisation. Between 2013-23, urban population in India grew by 14% compared to 8.4% globally (Source: World Bank). India is also one of the fastest growing economies, gaining traction across industries. In the coming years, as India strives to achieve its ambitious economic growth targets, there will be a surge in the growth of cities, leading to a rapid pace of urbanization. Currently, 36% of India's population resides in urban areas, and this is expected to increase to 40% by 2030. Urbanization is expected to drive significant migration from rural and semi-rural areas to cities in search of economic opportunities.

A growing population will increase the demand for housing in cities across the income groups. The accelerating pace of urbanization is clearly reflected in the increasing number of cities in India with a population exceeding one million. According to various estimates, India had 23 cities in 1991 with a population of one mn or more. Over the last few years, although there have been policy measures to support demand and infusion of affordable housing in India, the shortage in this category continues to persist. As per our assessment, there is an existing shortage of ~10.1 mn affordable housing units in India.

Cities in India with 1 mn plus population



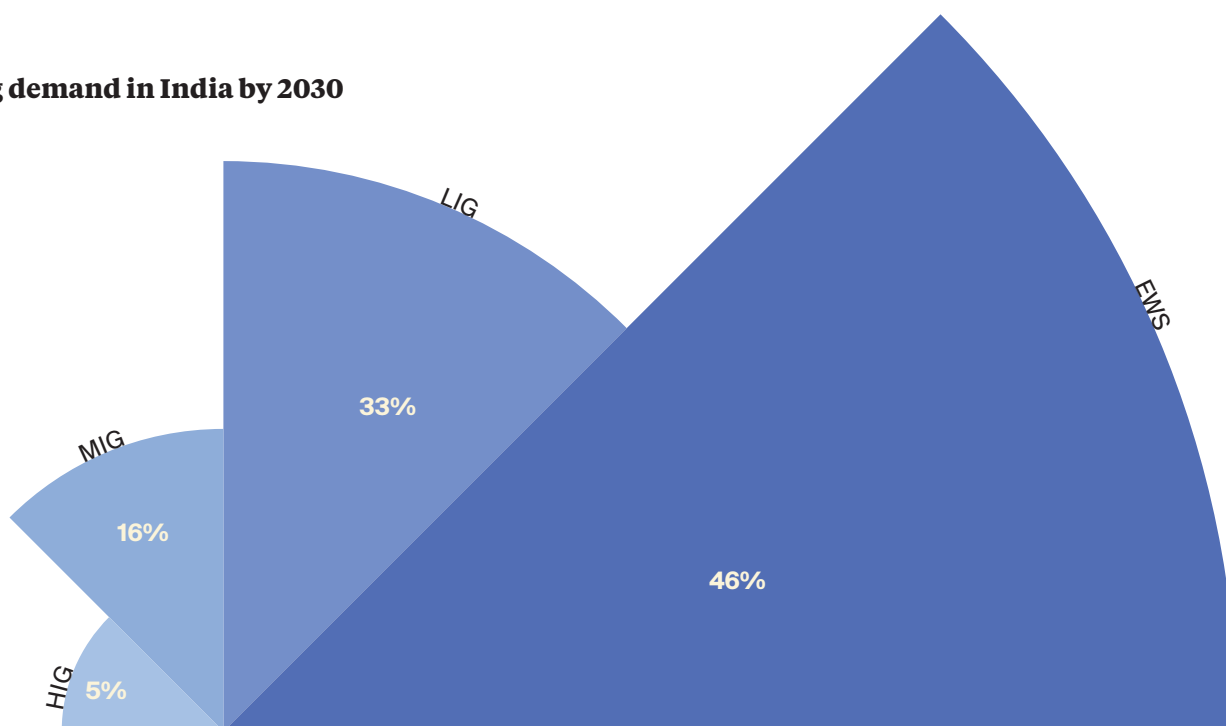
Assessing existing affordable housing shortage

	Shortage as per	Units (In mn)
(i)	11th 5-year plan (2007-12)	24.7
(ii)	Technical Group on Urban Housing, TG-12 (2012-17)	18.8
(iii)	PMAY U - completed (until 7th Oct 2024)	8.7
(iii)-(ii)	Deficit	-10.1

As cities continue to expand and grow, the demand for affordable housing will only widen in the coming years. By 2030, about 71 cities are estimated to have a population of 1 mn and above, of which 8 cities will be mega cities with a population above 10 mn. This underscores the speedy urbanisation in India which will necessitate the infusion of adequate infrastructure, primarily of housing. A lack of adequate housing may lead to the formation of informal housing in the cities.

As per our analysis, led by factors such as urbanisation and employment opportunities, 22.2 mn units of housing will be required in urban centres in India. 95.2% of this demand, which is equivalent to 21.1 mn units, will be concentrated in the affordable housing segment. A predominant share of 45.8% of the demand will be concentrated amongst the EWS households. There is already an existing shortage of 10.1 mn units. Cumulatively, the existing shortage plus upcoming demand for affordable housing segment in India is estimated to be 31.2 mn units by 2030.

Housing demand in India by 2030



Source: Knight Frank Research

Financing Opportunity in the Affordable Housing Segment

The current portfolio of the affordable housing loan market in India is estimated to be INR 13 tn, with Housing Finance Companies (HFCs) constituting INR 6.9 tn and Scheduled Commercial Banks (SCBs) holding a share of INR 6.2 tn⁵. Looking ahead, given the escalating potential demand for affordable housing, the consumer loan market in this category is anticipated to experience significant expansion. Among all three housing categories – affordable, mid, and premium – the reliance on loans is notably high in the affordable housing segment.

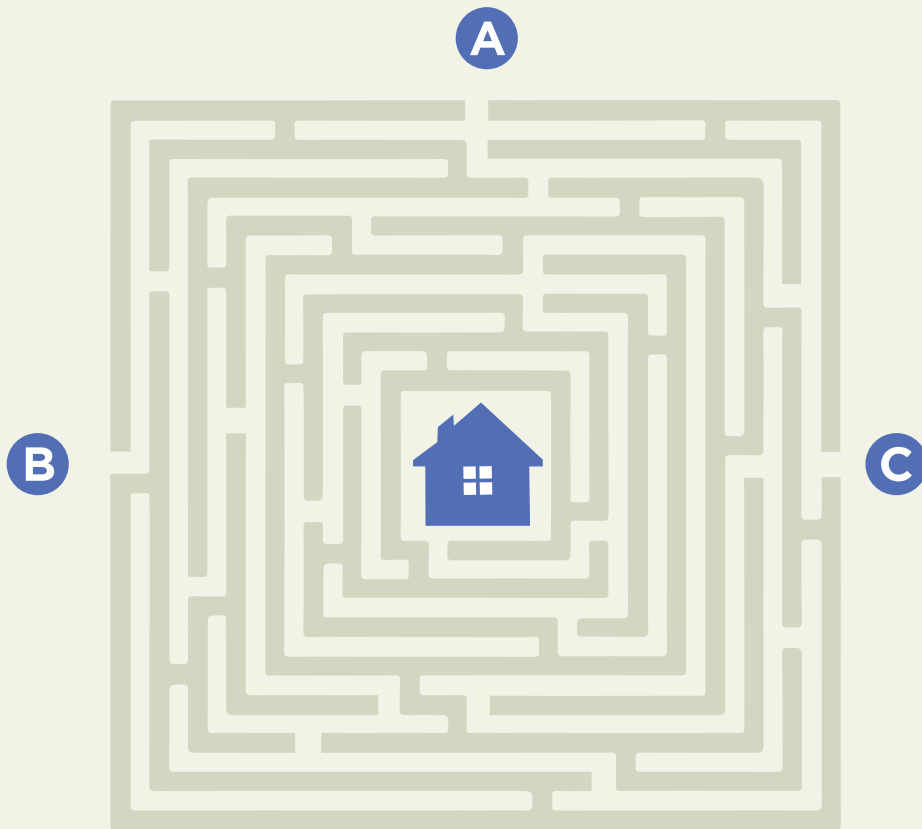
As per Knight Frank Survey, 77% of the households whose annual income is under Rs 1 mn depend on loans for home purchases.

According to our analysis, the cumulative affordable housing shortage in India is projected to reach 31.2 mn by 2030, with the market size estimated at INR 67 tn. Based on an assumption of a 77% loan dependency and Loan-to-Value (LTV) ratios applied at various loan thresholds, the potential financing opportunity for banks and Housing Finance Companies (HFCs) in the affordable housing segment is estimated to be INR 45tn. This represents a substantial increase, being three times more than the existing loan volume in this segment.

Assessment on financing opportunity for banks and HFCs for affordable housing consumer loans

	Total housing shortage	Housing shortage (Ex HIG)	Area	Cost of dwelling	Average cost	Market size	Potential home loan market	Financing Opportunity
	Units in mn	Units in mn	Sq ft	Rs mn	Rs mn	Rs tn	Rs tn *	Rs tn **
EWS	15.0	15.0	150-300	<1.5	1.2	17.4	13.4	11.8
LIG	10.9	10.9	300-600	1.5-3.0	2.3	25.2	19.4	17.2
MIG	5.3	5.3	600-1200	3.0-5.5	4.6	24.6	18.9	14.9
HIG	1.1							
Total	32.3	31.2				67.1	51.6	44.6

Source: Knight Frank Research Estimates, Note: Assumption 1. *77% loan dependency, and **90 & 80% LTVs
⁵NHB



Existing Challenges and Policy Requisites

Demand Side challenges

Mismatch in definition of affordable housing

The Ministry of Housing and Urban Poverty Alleviation (MoHUA) refers to affordable housing as residential units that are reasonably priced for individuals with incomes below the average household income. MoHUA targets economically weaker sections (EWS), low-income groups (LIG) and middle-income groups (MIG). The beneficiary criteria are set as follows:

Segment	Annual household income	Carpet Area (sq m)
Economically weaker section (EWS)	Upto INR 0.3 mn	30
Low Income group (LIG)	INR 0.3 - 0.6 mn	60
Mid income group I (MIG 1)	INR 0.6 - 0.9 mn	160

Source: MoHUA, Knight Frank Research

The Reserve Bank of India (RBI) under its priority sector lending, in defining affordable housing sets a loan eligibility based on the value of the house, differentiating between metro and non-metro cities.

Priority sector housing loan categorisation by the RBI

	Cost of the property (Rs mn)	Loan limit (Rs mn)
Metro	< 4.5	< 3.5
Non-metro	< 3.0	< 2.5

Source: RBI, Knight Frank Research

These definitions provide a base for identifying households that are eligible for the provision of various government benefits under PMAY-U. However, there exists a mismatch in the definition of affordable housing by the policy makers and the existing residential market. The average unit cost in the affordable housing category has significantly increased as compared to the pre-pandemic period of 2019. This has impacted the affordability for home buyers, especially in the EWS section. Since 2019, the residential house prices across all cities have significantly increased. However, it has been a disproportionate increase.

For instance, in MMR, the average launch price of a residential unit with an area of under 30 sq m, which was INR 1.7 mn in 2019, has now increased to INR 2.6 mn, indicating a 55% price growth or a CAGR of 7.6%. However, the average launch price of a residential unit with an area of 60-160 sq m which was INR 2.7 mn, increased to INR 3.4 mn, indicating a 29% price growth or a CAGR of 4.4%. This indicates that there has been an uneven increase in prices with small housing units witnessing a significant surge vis-à-vis larger units. This impacts the affordability of the consumer under the EWS category in comparison to the

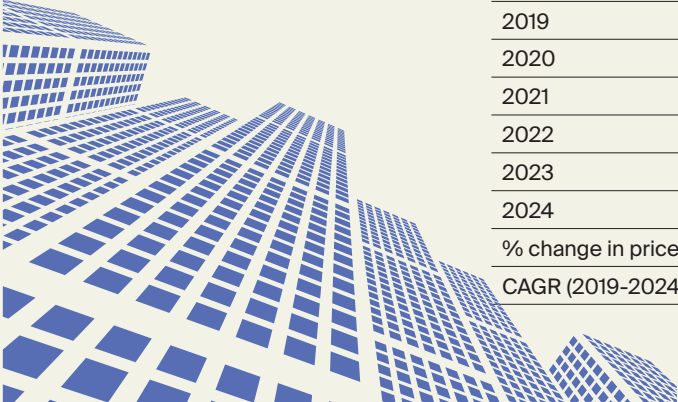
LIG or the MIG category.

Notably, the average price of a 30 sq mn housing unit in Mumbai has increased from INR 4.7 mn in 2019 to INR 7.5 mn in 2024, in addition to significant drop in the developer participation. Thus, indicating uneven affordability in the various limits of the micro market.

In metro cities which have a larger housing demand and EWS population, there is a mismatch in the eligibility criteria and affordability for the consumer. For instance, a household is defined as an EWS if their annual income is below INR 0.3 mn, and the size of their house is under 30 sq m. However, as per our estimates, an EWS household as per this definition, finds it challenging to buy a home in a Tier 1 city such as Mumbai, NCR etc. The house prices have significantly increased in the last few years, especially in the affordable housing segment.

Between 2019-2024, the average launch prices in MMR increased at a CAGR of 8% for residential units below 30 sq m (EWS category) vs 4.4% for a residential unit between 60-160 sq m (MIG). The average price of a house

under 30 sq m in Mumbai is INR 2.6 mn, with a required home loan of INR 2.5 mn. An EWS household with an annual income of under INR 0.3 mn would find it challenging to avail this loan as the EMI requirement is above the FOIR limit set by the banks. This, therefore, calls for a policy revision aligned with the residential markets.



House prices in Mumbai Metropolitan Region (MMR)

Size of the unit (Rs lakh)	<30	<60	<160
2019	17	22	27
2020	19	22	26
2021	19	24	27
2022	28	34	34
2023	28	34	35
2024	26	33	34
% change in prices growth since 2019	55.4%	48.3%	29.2%
CAGR (2019-2024)	7.62%	6.78%	4.36%

Source: Knight Frank Research

Estimating home loan and EMI requirement (Case study: MMR)

Loan and EMI calculation			
	EWS	LIG	MIG
Max annual household Annual Income (Rs)	3,00,000	6,00,000	9,00,000
FOIR	50%	50%	50%
Monthly Income	25,000	50,000	75,000
Monthly eligible EMI	12,500	25,000	37,500
Interest rate (Base lending rate)	8.95%	8.95%	8.95%
EMI per Lakh (20-year tenure)	896.5	896.5	896.5
Home loan eligibility (Rs lakh)	13.94	27.89	41.83
LTV (%)	90%	80%	80%
Average unit price	26.4	33.1	34.3
Home loan required (Rs lakh)	23.8	26.5	27.5
Gap (Rs lakhs)	9.9	-1.4	-14.4

Source: Knight Frank Research

Therefore, to widen the accessibility of benefits of affordable housing schemes, especially for the EWS households it is required that the limit of income levels is increased. Currently, EWS categorisation is limited to INR 0.3 mn per annum, however, the income required to make a home purchase in tier 1 cities of a unit size of 30 sq mt is estimated to be INR 0.6 mn. These revisions can be specific to the geographies with respect to their cost of living.



Income Gap assessment

Household Income Requirement Calculation			
	EWS	LIG	MIG
Average Unit Price (Rs lakhs)	26.4	33.1	34.3
Loan Amount (Rs lakhs)	23.8	26.5	27.5
Tenure (in months)	180	180	180
Lending rate (In %, per month)	0.007	0.007	0.007
EMI (In Rs)	24,064	26,808	27,772
Monthly Income (In Rs)	48,127	53,616	55,545
Annual Income Required (In Rs lakhs)	5.8	6.4	6.7
Existing Income Limit (Rs lakhs)	3.0	6.0	9.0
Gap Estimate (Rs lakhs)	2.8	0.4	-2.3

Source: Knight Frank Research



Revising the affordable housing limit:

In addition to this, there is also a need to revise the RBI definition of affordable housing, which is stated as priority sector lending. Currently, the RBI categorises a home loan as priority sector lending if the value of the unit is under Rs 4.5 mn in metro city and Rs 3.5 mn in non-metro city. However, the average unit price has significantly increased since the last revision by the RBI, which was in 2019. Even with basic adjustment done, with consumer price inflation (CPI), the average house price in metro cities in India has increased from Rs 4.5 mn in 2019 to Rs 5.7 mn currently. Similarly, the average house price in non-metro cities has increased from Rs 3.5 mn in 2019 to Rs 4.4 mn so far in 2024.

The residential prices has significantly moved upwards over the last few years. As stated above, the average price of a under 30 sq mt housing units has increased from INR 4.5 mn in 2019 to INR 7.5 mn in 2024. This is beyond the priority sector lending limit set by the RBI.

This price points vary even amongst the metro cities. For instance, in Bengaluru, the average ticket price of a affordable housing unit has increased from INR 2.7 mn in 2019 to INR 4.0 mn in 2024.

Therefore, it is required that the price and loan thresholds set by the policy makers and the central bank is unique to each city's based on their respective price appreciations. .

Changes in average unit price adjusted to CPI

Unit cost in Rs lakhs (RBI Cap)

	Metro	Non-Metro	Metro	Non-Metro	Metro	Non-Metro	Metro	Non-Metro	Metro	Non-Metro	Metro	Non-Metro
	45.0	35.0	47.1	36.7	49.4	38.4	51.8	40.3	54.2	42.2	56.8	44.2
Years	FY2019		FY2020		FY2021		FY2022		FY2023		FY2024	

Source: RBI, Knight Frank Research

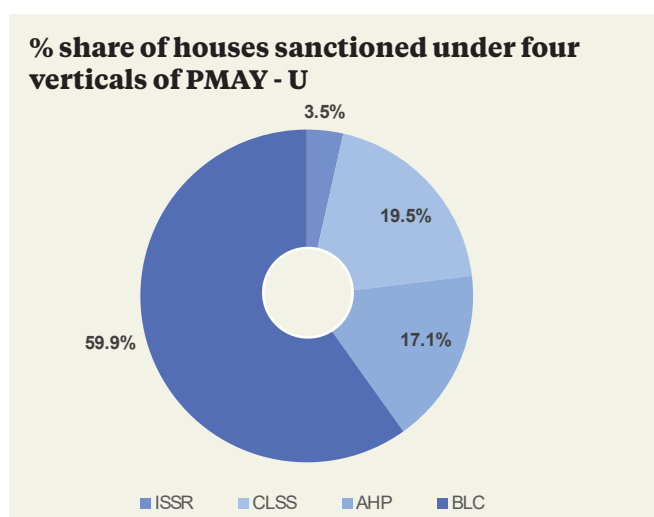
Challenges in accessing formal financing: To narrow the housing gap within the affordable segment and to maximize market potential, it is crucial to address the existing challenges on both the demand and supply sides. The difficulty in accessing formal financing creates bottlenecks for the consumers, especially for households in the economically weaker sections (EWS) and lower-income groups (LIG) that are predominantly employed in the informal sector with limited documentation of their earnings. Consequently, these individuals encounter challenges in obtaining credit from banks and housing finance companies (HFCs). Currently only 16% of all the outstanding home loans are availed by EWS household⁶. A viable solution would involve the introducing of innovative financing models, such as micro-financing to address the housing financing needs of the EWS and LIG population.

Moreover, as witnessed in our analysis, the lower income households are more sensitive to interest rate changes. A continued support through interest rate subsidies is crucial to ease their borrowing cost burden. Under PMAY-U 1.0, the Credit Linked Subsidy Scheme (CLSS) emphasised on providing interest rate subsidies to beneficiaries at a rate of 3-6.5% depending on their income levels. The CLSS existed between April 2015 to December 2022, and during this period, benefitted 2.4 mn out of 12.3 mn PMAY-U beneficiaries, with an estimated subsidy of 0.2 mn per household.

Progress of PMAY - U sub schemes

April 2015 – December 2022	Beneficiaries (In mn)
In situ slum redevelopment (ISSR)	0.4
Credit linked subsidy scheme (CLSS)	2.4
Affordable housing in partnership (AHP)	2.1
Beneficiary led construction (BLC)	7.3
Total	12.3

Source: MoHUA, Knight Frank Research



Source: MoHUA, Knight Frank Research

In PMAY-U 2.0, a similar scheme in the form of Interest Subsidy Scheme (ISS) with a provision of 4% interest subsidy across all income groups. Assuming, the continuation of this policy and 20% beneficiaries, the interest rate subsidy requirement is estimated to be Rs 1.12 tn by 2030. Interest rate subsidies are more essential in larger cities with populations exceeding one million. In these urban areas, land ownership is relatively lower compared to smaller cities, leading to a higher reliance on loans for home purchases.

Estimation of subsidy requirement for CLSS until 2030

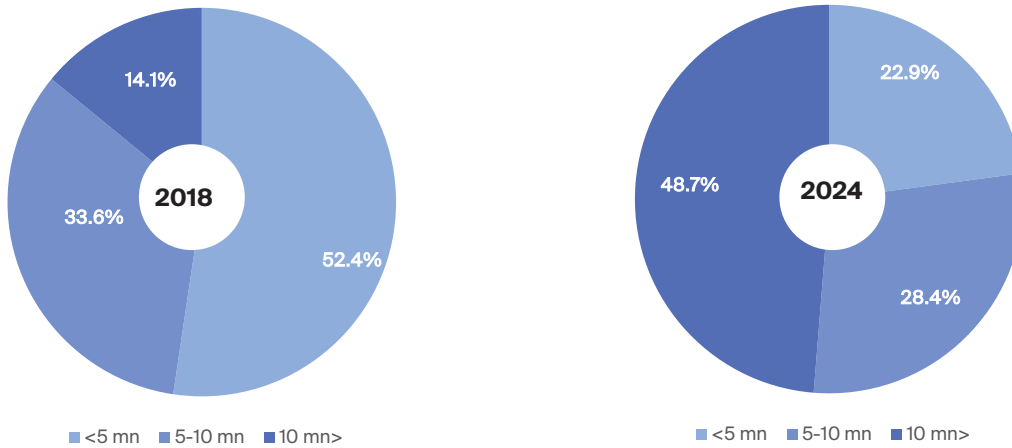
Interest Subsidy Requirement (2024-2030)	
Estimated AH shortage in next 7 years (Units in mn)	31.2
% of CLSS beneficiaries	20%
Potential households under CLSS (Units in mn)	6.24
Maximum Subsidy per household (Rs mn)	0.18
Subsidy required (Rs tn)	1.12

While the sensitivity of the affordable housing category to prices and interest rates has posed demand side challenges, there also exist supply side challenges.

⁶Annual report of select housing finance companies

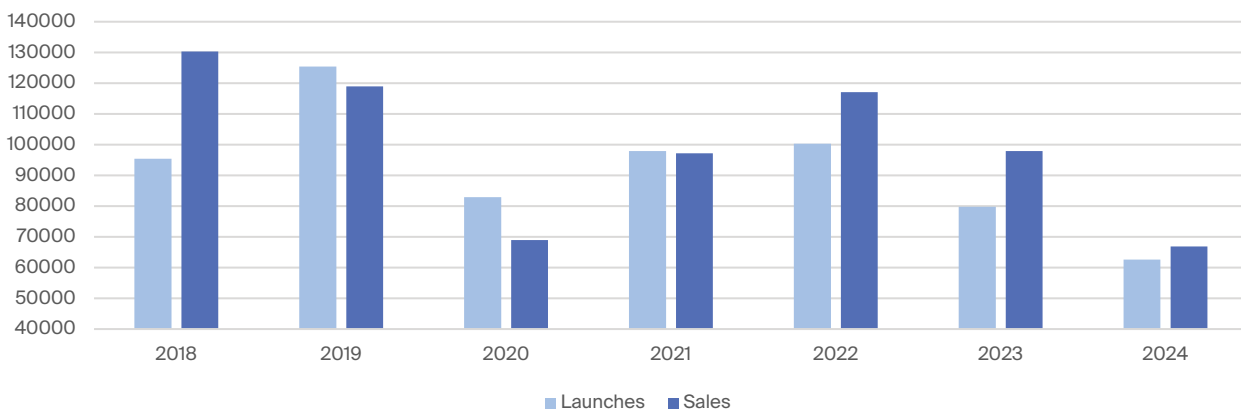
As per the graph below, the share of affordable housing launches has declined from 52.4% in 2020 to 23% in 2024. The receding number of launches in the affordable housing units is primarily attributed to the bottlenecks hindering private participation.

Share of affordable housing launches declined from 52.4% in 2018 to 23% in 2024



Source: Knight Frank Research. Note: Sales and launches across top eight cities in India in 2024. The data is as of September 2024.

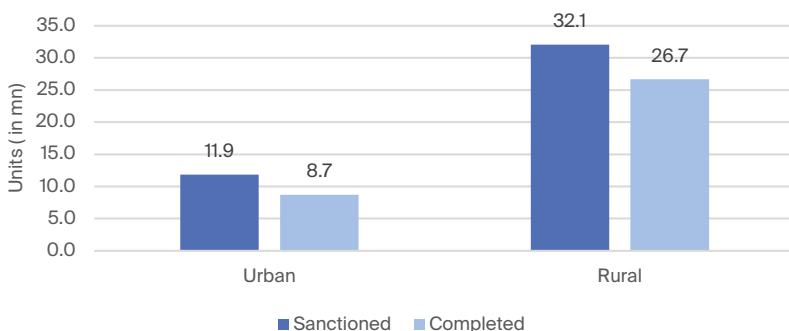
Launches lag sales in the affordable housing category



Source: Knight Frank Research; Note: Sales and launches of units under Rs 5mn across top eight cities in India, 2024 data is as of Sep'24

The lag in supply is also witnessed at the macro level as seen in the variation in houses completed under PMAY in urban vis a vis, rural. As per the data from MoHUA since 2017, while 83% of the houses sanctioned under the PMAY-G (rural) were completed, only 73% of the houses were completed under the PMAY-U (urban). This indicates the lag in the supply of affordable housing in urban area.

Comparison in progress of PMAY in urban vs rural



While there are ample existing challenges restricting the supply infusion of affordable housing in India, we have identified some key challenges limiting private participation in affordable housing segment in India and some policy measures that can mitigate the same.

Source: MoHUA, Knight Frank Research

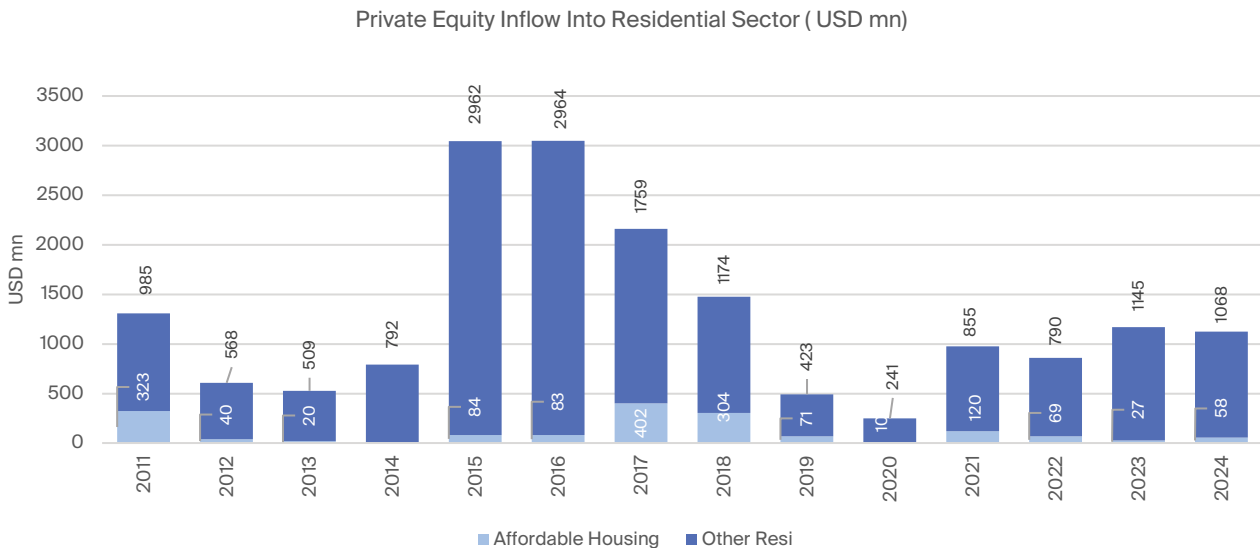
Constraints on Private Participation in Affordable Housing: Causes and Remedial Measures

As witnessed above, the participation of private developers in affordable housing in India has been declining due to financial infeasibility of the projects and lack of adequate incentives. With the decline in private participation, there has been a decline in institutional investments in affordable housing projects in India. To promote affordable housing, the government has made efforts to create an enabling environment and eco-system. In FY 2017, a key provision was made in the form of granting of infrastructure status to affordable housing to provide benefits such as lower borrowing costs, tax concessions and increased inflow of private capital.

However, despite the policies, private participation along with developers and the institutional investments in affordable housing segment in India has remained negligible.

Between 2011-2024 (until September 2024), the capital inflows into affordable housing segment was USD 1.6 bn, which is merely 9.8% of the capital inflow into the overall residential sector or 3.6% of the total inflow into the real estate sector. Primarily, it is the inflow of foreign funds that has been muted. Of the total PE inflow into affordable housing, merely 15% of the PE funds are investments by foreign funds.

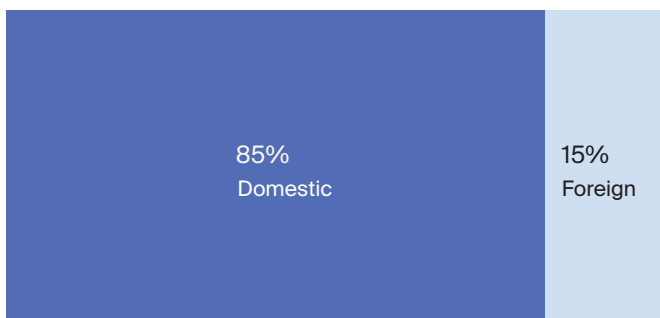
USD 1.6 bn of Capital Inflow into Affordable Housing in India between 2011-24



Source: Venture Intelligence, Knight Frank Research, 2024 data is until Sep'24

Foreign funds accounted for merely 15% of the capital inflow into affordable housing segment between 2019-24

Composition of capital market inflow into affordable housing segment in India, 2019-24 (USD mn)



Source: Venture Intelligence, Knight Frank Research



Why is the private capital inflow limited into affordable housing segment in India?

The inflow of private institutional investments into affordable housing is limited primarily due to the financial unviability of projects which restrict private developers' participation. Additionally, the investment return on this category is limited in comparison to other asset classes. The higher cost, lower profitability, lower returns and associated risks have resulted in limited institutional investor participation in affordable housing in India.

To address this issue, there is a need to increase private real estate developer participation in the affordable housing segment, making it profitable and attractive for institutional participation. This can be achieved through provision of incentives and by enhancing or introducing alternative funding and financing mechanisms for affordable housing projects in India. Some incentives that could make these projects financially viable for private real estate developers include:

1. Tax benefits and subsidies
2. Access to lower -interest loans
3. Provision of land
4. Streamlined regulatory processes
5. Grants and Financial Assistance programs

In the section below, we have discussed some of the key policy support initiatives in detail:

1. Provision of vacant PSU land

The high population density in urban areas has resulted in a substantial demand for urban land, thereby driving up land costs. The lack of availability of affordable land stands as a significant obstacle to creating affordable housing in cities, leading to a shift in development focus towards suburban areas. However, the lack of adequate transport and social infrastructure disincentivises home purchases in the suburbs in the affordable category.

A potential solution lies in repurposing vacant lands owned by various Public Sector Undertakings (PSUs) such as railways, defence etc for affordable housing projects through public-private partnerships. While the vacant PSU lands have the potential for monetisation to raise financial resources, unlocking a portion of it for affordable housing can cater to the equitable social and economic growth of the city. As per our estimates, assuming a national average FSI of 2.5, the land requirement to develop the estimated 31.2 mn affordable housing units in India is estimated to be 1.9 lakh acres. Some PSU entities are actively participating in developing affordable housing on their vacant lands in urban centres. Such initiatives reduce the land cost which is nearly 40-50% of the construction cost, enabling a financially feasible development of affordable housing units. It also attracts buyers, as it reduces transportation costs and provides easy access to social and physical infrastructure.

Case study of CIDCO housing in Navi Mumbai

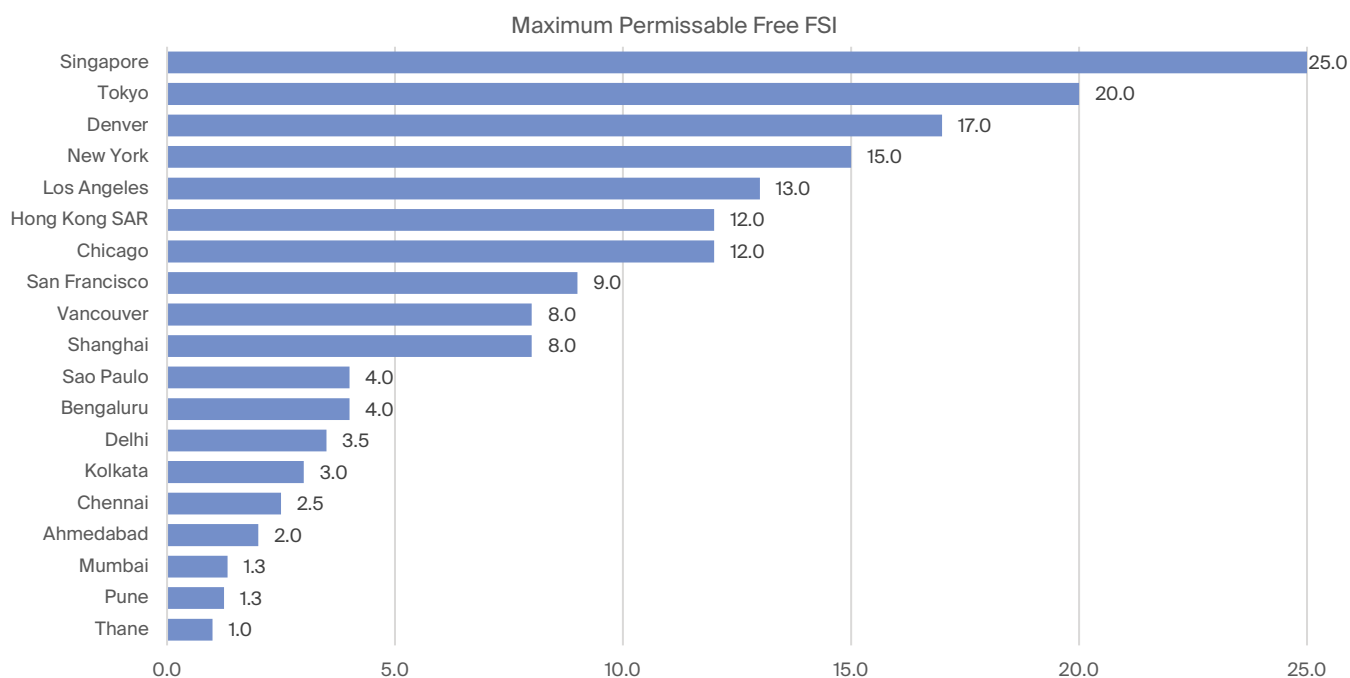
The CIDCO Mass Housing Scheme in Kharghar, Navi Mumbai, launched on October 11, 2024, aims to provide affordable housing for the Economically Weaker Sections (EWS) and Low-Income Groups (LIG). As the project is being developed on the land owned by CIDCO, it significantly reduces the construction cost. The first phase includes 26,000 homes, strategically located near public transport facilities like railway stations, bus stops, and metro stations as part of CIDCO's transit-oriented development strategy. The housing complexes are built using modern construction techniques to ensure durability and cost-effectiveness, and they feature ample community spaces, comprehensive infrastructure, and essential amenities such as water supply, electricity, and sanitation facilities. The scheme's transport connectivity is robust, with Kharghar Railway Station providing direct links to major areas in Navi Mumbai and Mumbai, numerous BEST and NMMT bus routes, and proximity to major roads like the Mumbai-Panvel Expressway. The upcoming Navi Mumbai Metro will further enhance connectivity. The project has received a huge response with around 70,000 applications for the 26,000 homes, indicating high demand for affordable housing. The phased implementation of the project aims to manage this demand effectively. Overall, the CIDCO Mass Housing Scheme in Kharghar is a significant initiative that addresses the housing needs of economically weaker sections and low-income groups, with a strong focus on sustainability and accessibility.

2. Extending Free Floor Area Ratio (FAR)/Floor Space Index (FSI)

The FSI/FAR limits in Indian cities are very restrictive when compared globally. As the population pressure on cities in India continues to increase, limited FAR/FSI leads to an increase in prices. This restricts the home purchasing capacity of households especially in the lower income groups. It also increases the financial cost of an affordable housing project making it unviable for the developer as it impacts their profitability. Any additional FAR/FSI beyond the free permissible limit must be purchased at a considerably higher cost. This consequently raises the construction cost resulting in a rise in selling prices, adding stress to the consumer purchases. Increasing the free/base FSI for the affordable housing development can potentially reduce the overall cost of the dwelling and make it financially conducive for the developer to infuse supply while benefiting the consumer.

As per our assessment, increasing the base or the free FSI by 50% would raise the supply by 50% and reduce the overall cost of construction of a dwelling by 24%.

Maximum permissible free FSI in select cities



Source: IDFC, Knight Frank Research; Note: Values exclude redevelopment projects

Impact assessment of increasing base or free FSI

	Existing	Recommended	% Change
Land price per sq ft (Rs)	6000		
Area (sq ft)	6000		
Plot cost (Rs)	3,60,00,000		
Free FSI (e.g. MCGM)	1.0	1.5	50%
Developmental area (sq ft)	6000	9000	50%
Size of the dwelling (sq ft)	300	300	0%
Units	20	30	50%
Per unit cost estimation			
Total Land cost (In INR)	18,00,000	12,00,000	-33%
Construction cost (Rs 2500 per sq ft)	7,50,000	7,50,000	0%
Total Cost of the dwelling (In INR)	25,50,000	19,50,000	-24%
Cost per sq ft (In INR)	8,500	6,500	-24%

3. Low-cost borrowing:

While provision of vacant lands can significantly reduce the construction cost for the developers, the subsidised borrowings can further increase the profitability and yield of these projects which in turn can attract institutional investments through private participation. Currently, National Housing Bank (NHB) provides low-cost financing via affordable housing fund to Housing Financing Companies (HFCs) for the construction of affordable housing projects. The eligibility to avail these loans, however, is limited to states, central government and public sector agencies. To promote private participation that can influence the inflow of institutional funds, subsidised funding should be provided to private developers as well so that they can independently construct projects on their existing land parcels.

4. Provision of tax incentives

While there exist income tax and GST incentives for home buyers in India, such provisions are limited for private developers. Currently, the 'Affordable Housing Partnership' under PMAY scheme provides 100% tax waiver for the developers on profitability from affordable housing projects for one year. However, owing to increasing costs, profitability for developers in this segment is minimal. Hence, this is not an adequate incentive for developers to participate in the construction of affordable housing projects. There is a broader need for tax incentives which can encourage private developers to participate in affordable housing development. Globally, several countries are providing varied incentives in the form of tax rebates, credits, incentives etc. Incentives such as provision of tax credits in the US has mobilised nearly USD 8 bn of private investments annually in affordable housing.

Select countries providing incentives to developers for affordable housing

Country	Program	Tax Exemption/Rebate Provided
United States	Low-Income Housing Tax Credit (LIHTC)	1) Dollar-to-dollar reduction in federal tax liability for developers. 2) Developers receive nonrefundable and transferable tax credits, which can be 4% or 9% of the eligible development costs which can be sold to banks to raise capital
Canada	Affordable Housing Tax Incentives	100% rebate on the Goods and Services Tax (GST) or the federal portion of the Harmonized Sales Tax (HST) for new purpose-built rental housing
Brazil	Minha Casa Minha Vida (My House My Life)	High subsidies and tax incentives for developers building affordable housing for low-income families

Source: Respective country's government documents. Knight Frank Research

Thus, provision of support and incentives will encourage the private participation into affordable housing sector, as it will improve the profitability and financial viability of the project, which in turn can raise capital from institutional investors.



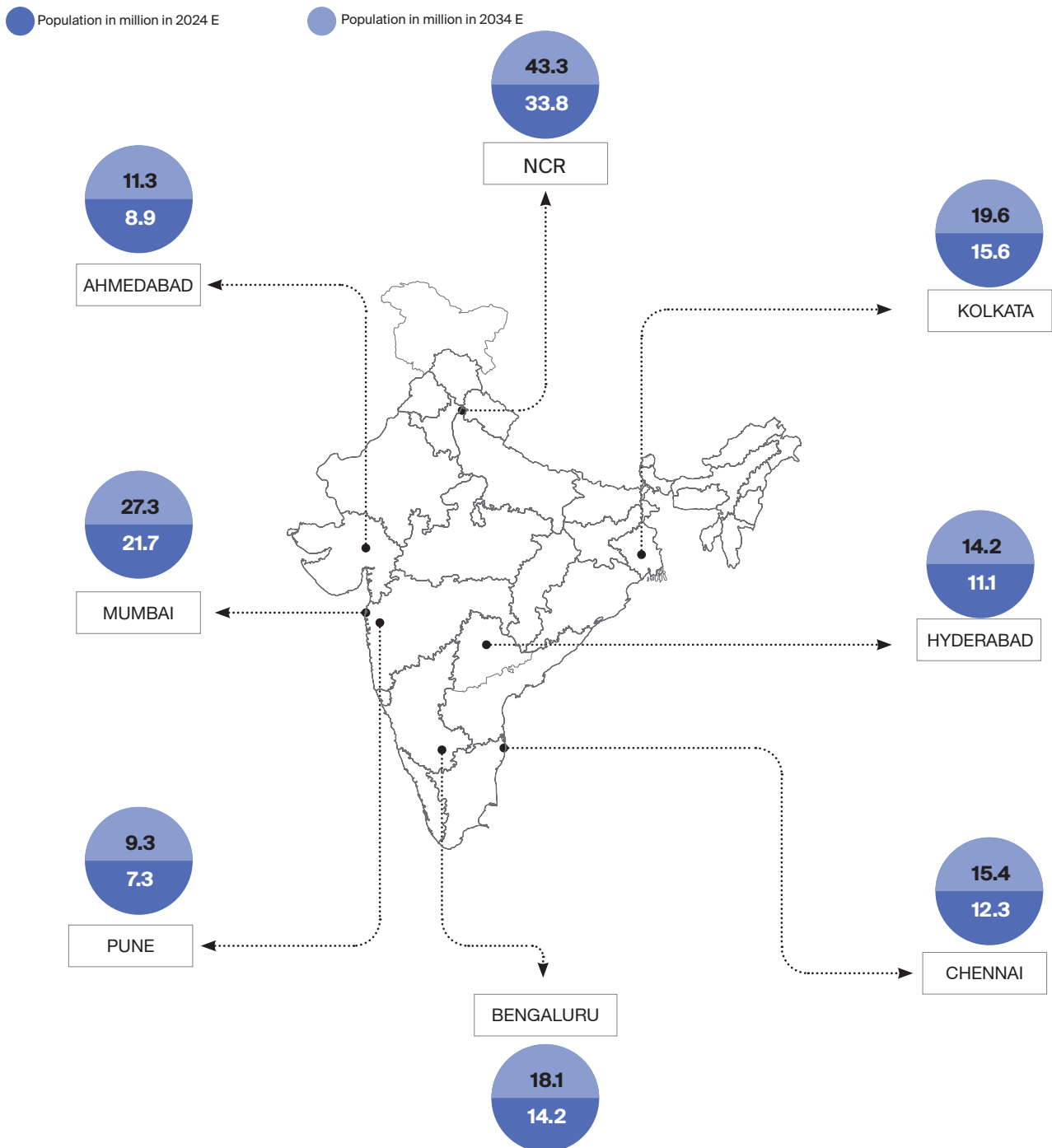
Develop Satellite Cities

In mega cities, the pursuit of affordable housing is significantly hindered by land shortages, which consequently inflate land prices. Furthermore, the severe congestion in India's mega cities exacerbates the challenges of liveability. To mitigate these issues, it is imperative to decongest these urban centres by developing support cities with robust infrastructure. In the last few years, such cities have emerged in the form of satellite towns.

A satellite town, or satellite city, is a self-sufficient smaller town situated on the periphery of a larger metropolitan area, with its economic and social life intricately linked to the larger city. Unlike suburbs, which heavily rely on the main city for employment, satellite towns possess their own industries, educational institutions, and healthcare facilities, rendering them economically independent and self-sustaining. Notable examples of satellite towns in India include Gurugram and Faridabad (Delhi), Navi Mumbai (Mumbai) and Whitefield (Bangalore). However, owing to economic growth and rapid urbanization in the last few years, these satellite towns as well have become congested and have evolved into prime real estate markets.

As urbanization continues to accelerate, there is a pressing need to focus on formation of new satellite towns. Their proximity to the central business districts or commercial centres of mega cities is likely to increase, necessitating enhancements in transit and social infrastructure. Initiatives such as high-quality transport systems and access to social infrastructure like education and healthcare can help curb migration into mega cities. Given that land price in satellite cities is relatively lower compared to mega cities, they present a lucrative market opportunity for private real estate developers to construct affordable housing projects. However, the success of these projects will hinge on factors such as local transport mobility, access to quality physical infrastructure like roads and mass rapid transit systems (MRTS), social infrastructure like hospitals and educational institutions, and supporting economic activities. We have identified some of the emerging satellite towns for mega cities in India. Some of these are already in various stages of development:

Population of top 8 cities in India



New/potential satellite cities supporting for mega cities

Mega City	New Satellite City	Proximity from Mega City CBD
Mumbai	Third Mumbai (Navi Mumbai + Pavel)	53 Kms
	Vasai Virar	54 Kms
Delhi NCR	Manesar	57 Kms
	Sohna	55Kms
	Yamuna Expressway (YEIDA city)	63 Kms
	Meerut	105 Kms
Bengaluru	Hoskote	28 Kms
	Nelamangala	30 Kms
	Devenahalli	43 Kms
Chennai	Sri Perambudur	40 Kms
	Thiruvallur	43 Kms
	Chengalpattu	61 Kms
Hyderabad	Sangareddy	62 Kms
	Vikarabad	78 Kms

Notably, satellite cities such as Meerut, is already emerging as a real estate hotspot due to the development of infrastructure projects such as Delhi-Meerut Regional Rapid Transit System (RRTS), a high-speed rail corridor which aims to reduce travel time between two cities under one hour. Hence, as infrastructure connectivity improves, the land value and the real estate prices as well will increase, which will again make affordable housing projects challenging, repeating the challenges of high land costs. Hence, it is essential that, from early stages of development, the land use planning or the zoning regulations of the new cities are made to focus on affordable housing.

Creating effective zoning regulations for affordable housing in new cities in India involves several key considerations to ensure that housing is accessible, sustainable, and well-integrated into the urban fabric. Some key recommendations include:

- 1. Flexible Floor Area Ratio (FAR):** Allow higher FAR for affordable housing projects to maximize land use and accommodate more units. As assessed in the above section, provision of additional free FAR of 50% reduces the construction cost by 24% and increases supply by 50%, thus caters to both developers and buyers need.
- 2. Inclusionary Zoning:** Implement inclusionary zoning policies that require a certain percentage of land use to be allocated for affordable housing. Currently, cities such as Ahmedabad has 20% inclusionary zoning requires which ensures that portions of new residential projects are allocated for EWS and LIG income households. Similarly, in zoning regulations of Bengaluru Development Authority (BDA), inclusionary zoning is compulsory for residential projects that are developed on land parcels of 40 acres or more, wherein the developers are required to allocate 15% of the total units for EWS and LIG income groups. Similar, regulations are required to be adopted in land use planning of new cities so that there is adequate allocation of the land parcels within the city limits for the longer term to cater to the housing needs of the EWS and LIG income groups.
- 3. Transportation and Infrastructure Integration:** Making affordable housing feasible often requires investments in infrastructure like roads, sewage, and public utilities. Particularly important is the development of large-scale transit oriented infrastructure projects. Various evidence indicates that off take of affordable housing projects which lack physical and social infrastructure is very limited, causing excessive pile up inventories and wastage of development cost. Hence, it is necessary to integrate affordable housing projects adequately with transport and other amenities.





Industrial Workers Housing

While there is a need for adequate focus on urban affordable housing, there is growing support from the policy makers. The housing category requirement that needs to be addressed is Industrial Worker Housing as the industrial and the manufacturing sector is poised to grow. With this in mind, the state and central governments are aggressively focusing on large scale manufacturing. Policy measures like **'Make in India'**, and the emphasis on development of industrial corridors are some of the key initiatives underscoring India's focus on widening manufacturing activities. Large scale manufacturing will generate greater employment opportunities.

As of 2023, the value of India's manufacturing output is USD 491 bn, equivalent to 15% of the total economic output. By 2034, the value of India's manufacturing output is estimated to grow to USD 975 bn, equivalent to 21.3% of the total value of the economic output.

Manufacturing sector/GDP (%)

15.2%

21.3%

Source: MOSPI, Knight Frank Research

2023

2034

As of 2023, 40.5 mn people are employed in the manufacturing sector in India⁹. As the sector is poised to expand, the employee requirement by 2030 in the manufacturing sector is estimated to be 92.5 mn . The large-scale manufacturing sector generally faces the challenge of sourcing employees from one place. As a result, the larger share of employees working in manufacturing sectors are migrants – interstate as well as intra state.

Lack of adequate housing often leads to the construction of informal, unauthorised housing with inadequate living conditions. This is witnessed in large industrial areas in India such as the Okhla industrial area in Delhi, Ambattur industrial area in Chennai, Sanand and Bitlapur industrial area in Ahmedabad etc.

Such unliveable housing conditions pose health hazards as they lack quality water and sanitation facilities, posing risk to long term health and productivity of the employee. There is an urgent need to prioritise provision of housing facilities for the industrial and the factory workers.

A widening employment base is bound to generate a demand for housing in the industrial and manufacturing clusters. The key beneficiaries of industrial housing will be migrant employees. As per various studies, 60-70% of the workers in the manufacturing and industrial areas in India are migrants. This combined employment of migrant workers and contractual employees will generate a demand for housing, especially rental housing.

The provision of housing can be made through family housing units as well as dormitory housing. Since most of the employment in the manufacturing sector in India is contractual in nature, the requirement of dormitory rental housing will cater to their housing needs. As of 2022-23, 41% of all industrial employees in India were contractually employed. This is likely to grow due to factors such as need for flexibility in workforce management, cost consideration etc. Assuming a similar share, the number of contractual employees by 2030 is estimated to be 37 mn.

Provision of housing facilities would also encourage the participation of women employees in the manufacturing sector. Currently, the share of female participation in manufacturing sector in India is ~19%. Going forward, it is poised to increase due to supportive policy measures, growing female labour force participation rate, emergence of all-women factory lines etc.

There is a need to prepare adequate physical and social infrastructure including that of housing to make female

participation in manufacturing sector more conducive. The policy initiatives on industrial worker housing in India is still at a nascent stage. In the FY 2024-25 budgetary announcement, the central government emphasised provision of rental housing for industrial workers through private public partnerships (PPPs). However, a larger emphasis must be placed on it by the states as well. States such as Tamil Nadu, Assam, Gujarat have started to emphasise dormitory style housing accommodation for industrial workers.

In 2023, the State Industries Promotion Corporation of Tamil Nadu (SIPCOT) formed a special purpose vehicle - Tamil Nadu Industrial Housing Private Limited (TNIHPL), and jointly with Tamil Nadu Infrastructure Fund Management Corporation (TNIFMC) it aims to provide affordable and sustainable housing for industrial workers. These facilities are being developed in the PPP model and large industrial states such as Gujarat, Karnataka, Maharashtra, Uttar Pradesh including Tamil Nadu that account for 55% of India's manufacturing industry, should also initiate policies to support the development of affordable housing through provision of adequate housing facilities for industrial workers.

A few industrial housing facilities in Tamilnadu

Industrial Park	Type	Capacity (No. of beds)	Estimated Cost (Rs mn)
Siruseri	Women's Dormitory	807	613.9
Irungattukottai	Men's Dormitory	801	307.6
Shoolagiri	Dormitory for Men and Women	1495	567.2
Gangaikondan	Men's Dormitory	870	398.9
Cheyyar	Men's Dormitory	441	157.7

Source: TNIHPL

Their provision would require attractive incentives from the centre as well as the states which would include provision of land, tax deductions, financial support for construction, and active regulatory frameworks to encourage private developer participation in construction of industrial worker housing in India.

A dedicated effort to improve industrial worker housing can help resolve these issues. The first step to achieve this would be through optimising the utilisation of land through modifications in building bye laws.

Competitive industrial countries such as Vietnam, have actively implemented policies to support the housing needs of the factory/industrial workforce. Vietnam contributes 2.1% to global manufacturing and has about 12 mn people employed in the manufacturing sector. The Vietnamese government aims to construct 1 mn social housing units for low-income earners and industrial park workers by 2030 at a total estimated cost of VND 849.5 tn (~USD 36.1 bn). This funding is expected to come from various sources, including government budgets, social capital, and private investments.

Key policies in Vietnam supporting Industrial Workers Housing

Policy/Regulation	Objective	Incentives/Support	Year of Implementation
Social Housing Policy	Provide affordable housing for low-income groups and industrial workers	(i) Land use fee exemption (ii) Preferential loans (iii) Tax reductions (VAT, Corporate Income Tax)	2021
Housing Law (Article 58)	Encourage development of social housing	(i) Land use levy exemption (ii) Tax reductions (VAT, Enterprise Income Tax)	2023
Draft Law on Housing for Industrial Park Workers	Regulate construction of housing for workers in industrial parks	(i) Defines scope and beneficiaries (ii) Outlines responsibilities (iii) Specifies standards and requirements	2022
Rental Support Policy	Provide financial assistance for industrial workers' housing rentals	Monthly rental support of VND 0.5 mn for workers in enterprises and VND 1 mn for returning workers for three months	2022

Source: Various Vietnam Government Documents, Knight Frank Research

Case Study: Industrial Workers Housing In Vietnam

Binh Duong Province is a key industrial hub in southern Vietnam, attracting an FDI of USD 35 bn as of 2023, from more than 3,400 foreign enterprises. Binh Duong has 33 planned industrial parks, 29 of which have been established and 28 of which are operational. The province's industrial parks have an occupancy rate of over 90.92%, the highest in the country. The industries here include electronics manufacturing (Samsung, Intel, LG etc), textile and garment manufacturing, food processing and packaging, high-tech industries, machinery manufacturing etc. This in turn has generated a massive scale of employment in the region.

Employment Details: As of 2023, the Binh Duong Province has an estimated workforce of around 1.2 to 1.5 mn people, working in its industrial sectors. Around 60-70% of the total workforce in Binh Duong is made up of migrant workers. These workers typically come from rural areas in northern and central Vietnam from provinces such as Bac Giang, Nghe An, Thanh Hoa, and Quang Ngai. This is a significant proportion of the province's labour force, which underscored the need of housing for this group.

Housing Facility Usage by Migrant Workers: Given the large number of migrant workers in Binh Duong and the pressure on housing, the provincial government and private developers have created a range of affordable housing options, including dormitories and low-cost apartment complexes for these workers.

Share of Migrant Workers Using Housing Facilities: It is estimated that approximately 20–30% of migrant workers in Binh Duong live in dedicated housing facilities such as dormitories and low-cost apartments built near industrial zones. This equates to about 140,000 to 210,000 migrant workers using government-supported or private sector-built worker housing units.

Private partnership in housing: Public–private partnerships (PPPs) have been a common model, with private companies responsible for construction and operations, while benefiting from government incentives. Private developers, both Vietnamese and international, have been actively involved in building housing for industrial workers. Becamex Investment and Development Corporation (IDC), a major state-owned enterprise, has been instrumental in developing industrial parks and worker housing in Binh Duong. Becamex’s investment in the Binh Duong New City development is valued at over USD 2 bn, with a portion dedicated to worker housing. Notable private developers such as Vingroup, Lotte Property Development, and SunGroup have developed worker housing projects and mixed-use developments in the region. Since 2015, private developers have invested over USD 500 mn in constructing dormitories and residential units for industrial workers.

Government Support: To encourage private developers to build affordable housing, the local government in Binh Duong has implemented several incentive programs.

- Provision of land at discounted rates or free of charge, offering long-term leases to reduce upfront costs, and granting significant tax exemptions.
- Private developers building affordable housing for workers receive tax breaks such as 50% reduction in Corporate Income Tax (CIT) for the first four years, and a 20% reduction for the next four years.
- VAT exemptions on construction materials and reductions in property taxes and land use taxes for projects designated for worker housing.

Impact of housing on migrant workers: The provision of dedicated worker housing has significantly improved living conditions for migrant labourers. Affordable rents and proximity to work have enhanced productivity and overall well-being. For example, the Becamex IDC industrial park alone has provided over 10,000 dormitory units. These developments have kept rents affordable, ranging from VND 2–4 mn per month (USD 85–170), equivalent to 25–45% of their monthly income¹². The availability of affordable housing has also contributed to job creation, improved purchasing power for local workers, and reduced labour turnover and absenteeism.

By 2025, Binh Duong aims to build 42,000 social housing units at a cost of VND 25 tn (USD 1 bn), and 1,70,000 units by 2030



BECAMEX INDUSTRIAL WORKERS HOUSING PROJECT IN BINH DUONG, VIETNAM

Source: Becamex

The establishment of affordable housing zones or townships, incorporating mixed-use development with essential commercial, retail, and social amenities like schools and medical facilities will provide favourable living conditions for industrial workers in India. When strategically located in economic/industrial corridors, affordable housing townships can meet the housing needs of the migrant working population. While a few such developments already exist, there is a need for increased policy emphasis to encourage and support more such initiatives.

¹²Average monthly income of industrial workers in Binh Duong Province is USD 380. Source: Vietnam Labour Report, 2022



Innovative Finance Mechanisms for Affordable Housing

The growing demand for affordable housing projects in India is bound to generate immense financing and funding opportunities. While the financing demand of the consumer is already estimated in the above sections, there will also be a requirement for the developer or construction finance as adequate financing structure and funding are critical to address the affordable housing shortage and infuse supply.

In general, real estate development is capital intensive. The sector requires upfront deployment and access to continual and stable funding to support their projects through various stages of the development life cycle. Traditionally, developers have relied on loans from banks and NBFCs as the primary source of debt capital.

However, regulatory restrictions limit the banks from lending to this sector, hence, developers have had to rely on NBFCs as the only available source of funding. With the onset of the liquidity crisis perpetuated by the IL&FS, that channel has significantly slowed with a general risk-aversion amongst the lenders. Structurally, loans are not a good fit for project finance due to their characteristic following of a prescriptive waterfall model, wherein the loans are disbursed in different packages at each level of the project development life cycle. Real estate projects in general, require flexibility that takes into account the nuances of challenges around permissions, construction delays, and slow sales off-take. A large number of projects are stuck at the last stages of completion, which impact the loan returnability of developers, leading to a default in repayment. This further inhibits the banks and NBFCs to lend for affordable housing projects in India. There is a need to adapt to innovative financing models which will aid and incentivise the developers for construction of affordable housing projects. Some of them include:

1. Impact Investments:

Impact investing is a strategy designed to generate both financial returns and positive social or environmental outcomes. Unlike traditional investing which focuses solely on financial gain, impact investing addresses societal challenges through investments in sectors such as renewable energy, affordable housing, healthcare, and education. These investments span various asset classes including equities, fixed income, private equity, and venture capital, allowing investors to align their financial goals with their impact objectives.

Both individual and institutional investors such as pension funds, banks, and private investors, engage in impact investing. The methods include microfinance, social impact bonds, green bonds etc. Impact investing in affordable housing specifically addresses the housing affordability crisis while generating financial returns. This type of investment creates or preserves affordable housing units, thereby mitigating challenges of homelessness and enhancing community stability. Affordable housing investments offer stable income streams and the potential for property value appreciation. Such investments are prominent in developed markets. In the US, funds such as IMPACT Community Capital, Enterprise Community Partners, Kimpact etc focus on affordable housing and have successfully catered to the housing needs of the lower income groups. Community Partners, Kimpact etc focus on affordable housing and has successfully catered to the housing needs of the lower income groups.

Case Study: IMPACT Community Capital

Overview:

IMPACT Community Capital exemplifies the successful application of impact investing in the affordable housing sector. Over the past two decades, the organization has demonstrated the dual potential for financial returns and significant social impact through strategic investments in affordable housing.

Investment Strategy:

IMPACT Community Capital primarily invests in housing projects developed with federal Low-Income Housing Tax Credits (LIHTC). These projects are designed to be affordable for individuals and families earning no more than 60% of the area median income (AMI). The organization also leverages additional subsidies from local, state, and federal programs to achieve deeper affordability levels.

Achievements:

- **Scale:** IMPACT Community Capital has financed over 49,000 affordable housing units across 42 states and Washington, D.C.
- **Funding:** In 2021, the organization launched its first IMPACT Mortgage Opportunities fund at \$210 million, which is projected to preserve over 5,000 affordable housing units nationwide.
- **Innovation:** IMPACT pioneered one of the first commercial mortgage-backed securities (CMBS) issuances composed solely of affordable housing mortgages, thereby making this asset class attractive to institutional investors.

Social Impact: The investments made by IMPACT Community Capital have significantly contributed to housing stability for low-income families, ensuring consistent occupancy rates and fostering community well-being. This stability is crucial in addressing broader issues of housing inequality and enhancing the quality of life for residents.

Challenges and Solutions: IMPACT Community Capital faces the inherent complexity of coordinating multiple stakeholders and navigating various regulatory frameworks. However, their extensive experience and robust network have enabled them to develop scalable solutions that attract capital markets and deliver reliable cash flows.

2. Viability Gap Funding to Attract Private Participation

Viability Gap Funding (VGF) is a financial mechanism used by the Government of India to support projects that are economically justified but not financially viable on their own. Provision of infrastructure status to housing enables its access to VGF. Currently, the VGF scheme of the central government provides financial support of up to 30% of the PPP project cost while the state government provides up to 20% of the project cost.

Under the Affordable Rental Housing Complexes (ARHC) scheme, part of the Pradhan Mantri Awas Yojana (PMAY), VGF is used to support the development of rental housing for urban poor and migrant workers. The scheme operates as two models:

Model-1:

Refurbishing existing, vacant government-funded housing complexes to make them available for rent.

Model-2:

Constructing, operating, and maintaining new rental housing complexes on vacant land by public or private entities.

However, as per the Gol data, since the provision of infrastructure status to housing, there has been no provision of VGF for the affordable housing rental sector⁷. In the coming years, the growing need for rental housing in urban centres as well as in industrial clusters will accentuate the need for VGF which can significantly reduce the construction cost and make projects financially viable.

3. Blended finance:

Blended finance is a strategic approach that combines public, private, and philanthropic capital to fund projects that might otherwise be too risky or unprofitable for private investors alone. This method is particularly useful for financing sustainable development projects in emerging and frontier markets. The key aspects of blended finance include risk mitigation, its ability to mobilise a larger volume of capital, and is designed to support United Nations's Sustainable Development Goals (SDGs). As affordable housing and sustainable communities are one of the key objectives of SDGs, blended finance can be a powerful tool to cater to the funding requirement for this objective.

Blended finance is already being used as a tool in raising funds for affordable housing in some of the emerging and frontier markets. Some of its key features include:

- a) An ability to leverage public funds to attract private investment which can strengthen public private partnerships. For example, the Kenya Mortgage Refinance Company (KMRC) uses public funds to guarantee lower interest rates for private lenders, making home ownership more accessible.
- b) It actively manages risks, as blended finance structures often include concessional funding from public or philanthropic sources which can absorb higher risks. This makes it more attractive for private investors to participate in projects that have significant social impact but also higher financial risks.
- c) By combining different types of capital, blended finance can support large-scale long-term projects. This approach is crucial for developing sustainable housing solutions that can meet the needs of growing urban populations.

⁷Department of Economic Affairs, Gol, PPP Database, as on 14 November 2024

Case Study: Nam Long Affordable Housing Project, Vietnam

Project Overview:

In 2018, Nam Long Investment Corporation, a local residential real estate developer in Vietnam, aimed to deliver an average of 5,000 affordable housing units per year over ten years. The project focused on building core infrastructure for the largest affordable housing development undertaken by Nam Long. The total investment in the Nam Long Affordable Housing Project in Vietnam was estimated at VND 10,000 bn (approximately USD 434 mn)

Blended Finance Structure:

(i) Government Support

- Land and Infrastructure: The Vietnamese government facilitated land acquisition and provided infrastructure support, significantly reducing project costs
- Tax Exemptions: Social housing developers, including Nam Long, were exempted from land use tax.
- Low-Interest Loans: The government offered low-interest loans to support the development of affordable housing.

(ii) Development Finance Institutions (DFIs)

GuarantCo: Part of the Private Infrastructure Development Group (PIDG), GuarantCo extended a 100% guarantee for Nam Long's 7-year fixed-rate corporate bond of VND 660 bn (approximately USD 27 mn). This guarantee was crucial in attracting long-term international institutional investors.

(iii) Private Sector Investment

Equity Investment: The International Finance Corporation (IFC) made a USD 7.5 million equity investment to support Nam Long's expansion plans. Prominent private equity players such as Mekong Capital, Goldman Sachs, ASPL etc has invested in this project.

Debt Financing: GuarantCo's guaranteed corporate bond issuance enabled Nam Long to raise VND 660 billion from institutional investors.

(iv) Philanthropic Capital

Grants: Foundations and NGOs provided grants for initial project development costs and technical assistance.

Financing Terms

- Corporate Bond: Issued with a 7-year maturity, backed by GuarantCo's guarantee.
- Equity Investment: Private investors took equity stakes, sharing in the project's profits and risks.
- Grants: Used to cover non-recoverable costs such as feasibility studies and capacity building

Impact

- Affordable Housing: Enabled the construction of thousands of affordable housing units, addressing the housing shortage in Vietnam.
- Economic Development: Created jobs and stimulated local economic growth.
- Sustainable Development Goals (SDGs): Contributed to SDG 11 (Sustainable Cities and Communities) by providing safe and affordable housing.

4. Housing Trust Funds

Housing Trust Funds (HTFs) are publicly financed programs designed to increase the supply of affordable housing, particularly for low and extremely low-income households. These funds are typically managed at the state or local level and can be tailored to address specific community needs. These funds have dedicated revenue sources such as real estate transfer taxes, document recording fees or the other local taxes, ensuring a steady stream of funding. HTFs aim to support a variety of housing activities including new construction, rehabilitation and preservation of affordable housing. Annually, HTFs provide grants to states to produce and preserve affordable housing. 80% of these funds are obligated to be used for rental housing, up to 10% for home ownership, and 10% is set aside for administrative and planning costs. For long term sustenance of the housing facility, all HTF assisted rental housing units are to remain affordable for at least 30 years.

Case Study: Social Housing Fund in Chile

Background: Chile has been actively addressing its affordable housing needs through various initiatives including the establishment of a Social Housing Fund. This fund is part of the larger efforts by the Chilean government to reduce the housing deficit and improve living conditions for low-income families.

Recent Project: One of the significant projects funded by the Social Housing Fund is the Villa Verde Housing Project in Constitución, Chile initiated in 2009. It is an incremental housing project wherein 484 housing units were delivered at a cost of USD 7,500 per unit. Each unit was built as essential living space, and designed to be expanded by the residents as their financial abilities improved.

Key Features:

- **Incremental Housing:** The project uses an innovative approach called ‘incremental housing’, where basic, high-quality housing units are provided, and residents can expand and improve their homes over time as their financial situation allows.
- **Sustainability:** The design incorporates sustainable building practices, including energy-efficient materials and construction methods.
- **Community Focus:** The project emphasizes community development, with shared spaces and facilities that foster social interaction and support.

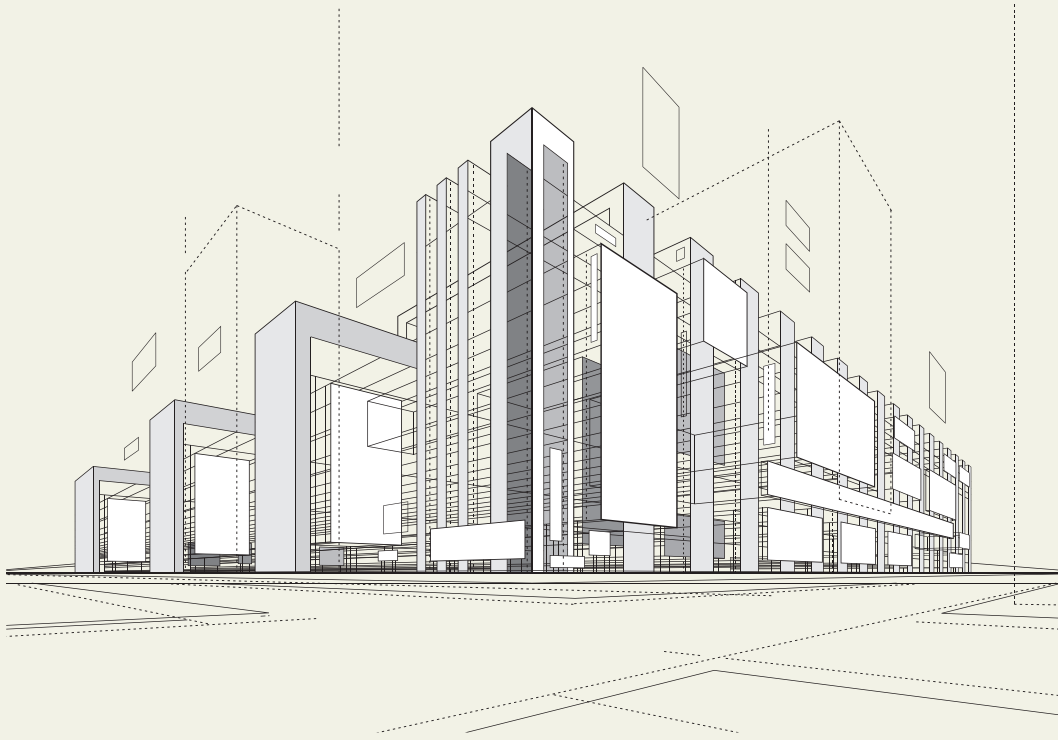
Impact:

- **Affordable Housing:** The project has provided affordable, high-quality housing to hundreds of low-income families, significantly improving their living conditions. As a result of such active interventions, the homelessness rate in Chile has remained low for a prolonged period. In 2023, 0.11% of the total population was homeless, which is very low as compared to the 0.20% of population experience of homelessness in developed countries such as the USA⁸.
- **Economic Empowerment:** By allowing residents to expand their homes incrementally, the project empowers them to invest in their property and improve their economic stability.
- **Community Development:** The shared spaces and community-focused design have strengthened social ties and created a supportive environment for residents.

Source: OECD, Knight Frank Research

In India, to gain private participation in development with investments in affordable housing, such innovative financing mechanisms need to be adopted adequately. While some of the instruments such as impact investing, VGF etc already exist and are supporting sectors such as agriculture, infrastructure etc, these need to be adequately extended to the affordable housing segment as well. Mechanisms such as Housing Trust Funds wherein the funding is through state revenue collections, can be done through Value Capture Financing (VCF). States and the ULBs can pool revenue sourced from real estate activities such as property taxes, land revenue, registration fees etc and deploy it for funding affordable housing projects. Additional provisions such as corporate bond guarantees will help in gaining interest of the private equity investors in the development of affordable housing in India, as these instruments mitigate the financial risks.

⁸ Social Street Registry (RSH), Chile



Role of Technology in Affordable Housing

Technology is playing a crucial role in solving the affordable housing crisis by making the process of construction, financing, and living in affordable homes more efficient, sustainable, and accessible. By leveraging innovations in building techniques, digital platforms, energy management, and data analytics, we can create a more affordable and equitable housing landscape that benefits both low-income residents and the larger community. The challenge remains in ensuring that these technologies are accessible and equitably distributed across regions and populations. Globally, several technologies are being developed and used with an objective to reduce construction cost for developers and utility cost for long term cost saving for consumers, raising funds for the developers, mapping housing units etc.



Some of the prominent technologies which are aiding affordable housing globally include



Cost reduction in construction



Smart Home Technologies for Energy Efficiency



Building Information Modelling (BIM)



Affordable Housing Financing Platforms



Smart Cities and Urban Planning



Digital Housing Platforms for Finding Affordable Homes



Innovative Financing Models



Sustainable and Environmentally Friendly Solutions



Accessibility and Inclusion



Public Policy and Government Programs

1. Cost Reduction in Construction

Modular and Prefabricated Housing: Advances in modular construction and prefabrication techniques allow homes to be built faster and with less waste. These homes are often more affordable because they can be assembled quickly with reduced labour cost and material expenses. Companies like Kattera and others are pioneering this approach.

Example: UK - The Urban Splash modular housing project

Technology: Modular construction techniques.

Impact: The UK company Urban Splash has used modular housing techniques to reduce the time and costs associated with construction. Their modular homes, built in factories and assembled on-site, can be built in as little as 12 weeks—compared to 6-12 months for traditional construction. This has allowed them to offer homes at a lower price point while maintaining quality and design flexibility.

3D Printing: 3D printing technology is being used to create homes or components of homes at a fraction of the cost of traditional building methods. This can drastically lower the price of housing by minimizing labour costs and material waste, while also enabling design flexibility.

Example: USA - ICON's 3D-Printed Homes

Technology: 3D printing for construction.

Impact: ICON, a construction technology company, has partnered with Habitat for Humanity to 3D print affordable homes in Texas. The 3D-printed homes cost as little as USD 4,000 to print. This technology reduces the material and labour costs typically associated with building homes, and the process is faster, printing homes in just a few days. ICON's homes are being used to address the housing crisis by offering affordable, sustainable housing solutions.

Image: Using 3D printing technology, the below home was built in merely 12 hours comprises three bedrooms and two bathrooms



Source: Architectural Digest, Habitat for Humanity

Automation and Robotics: Robotics and automated machinery in construction, such as brick-laying robots or automated concrete pouring, streamline the construction process, reducing the amount of time and labour needed, which translates into cost savings. Technologically advanced countries such as Japan, South Korea etc are using robotic construction technologies which has enabled faster construction of homes. The construction robots market in South Korea generated a revenue of USD 62.8 mn in 2023, and is projected to reach USD 194.7 mn by 2030¹³.

Example: South Korea - Hyundai's Robotic Construction

Technology: Robotics and automated machinery.

Impact: Hyundai Construction has been experimenting with robotic technology for construction, including automated brick-laying and robotic tools for efficient concrete pouring. This has cut costs and time for construction, potentially lowering the cost of homes by reducing labour dependency and speeding up the construction process.

2. Smart Home Technologies for Energy Efficiency

Energy-Efficient Designs: Technology is being used to design homes that use less energy. Smart thermostats, energy-efficient windows, and better insulation techniques can significantly reduce the operating costs of homes. This makes housing more affordable in the long run by lowering utility bills for residents.

Example: Australia - The Housing Industry Association (HIA) Green Smart Homes

Technology: Energy-efficient building designs and smart home systems.

Impact: In Australia, many affordable housing projects are incorporating HIA GreenSmart building techniques, which focus on using energy-efficient materials and designs. This can reduce household running costs by 30%-40%, making housing more affordable in the long term, particularly for low-income families who often struggle with high energy bills.

Renewable Energy Integration: Solar panels and other renewable energy sources are becoming more affordable and are being integrated into affordable housing designs. These technologies help reduce long-term costs for both developers and residents, making homes more sustainable.

¹³Horizon Grand View Research

Example: India - Solar-Powered Affordable Housing by Tata Power

Technology: Solar panels and renewable energy systems.

Impact: Tata Power, in collaboration with various state governments in India such as – Rajasthan, Uttar Pradesh, Kerala, Chattisgarh, Tamilnadu etc has been providing solar rooftop panels for households at an affordable cost. The homes are equipped with solar panels, significantly reducing electricity costs for low-income residents. In some cases, solar systems have reduced energy costs by over 60%-70%, which helps make housing more affordable in the long term by lowering utility bills.

3. Building Information Modelling (BIM)

BIM allows for more accurate planning, design, and construction. It helps reduce waste, improve coordination, and streamline the entire building process. By providing a clear digital representation of a building, it reduces costly errors, rework, and delays, ultimately leading to more affordable housing projects.

Example: Singapore - The Pinnacle@Duxton

Technology: BIM for construction planning.

Impact: In Singapore, the Pinnacle@Duxton was constructed using BIM technology, which allowed for better planning and more efficient use of space and resources. This helped reduce the overall construction costs, while ensuring that the project met high standards of quality and safety. BIM allowed for precise modelling and error reduction, preventing costly delays and wastage during construction.

4. Affordable Housing Financing Platforms

Technologies like crowdfunding and online lending platforms are allowing more people to invest in affordable housing projects. In the US, real estate crowdfunding platforms like Fundrise, EquityMultiple, and RealtyMogul allow investors to pool their money to fund real estate projects. These platforms provide access to a variety of real estate investments including residential, commercial, and mixed-use properties. Investors can choose from different types of investments such as equity investments, where they own a share of the property, or debt investments, where they lend money to the developer in exchange for interest payments. Crowdfunding has opened up real estate investing to a wider audience, including non-accredited investors, with some platforms requiring minimum investments as low as USD 10.

In the US, Fundrise real estate portfolio is over USD 7 bn and has provided funding to developers for construction of about 20,000 housing units.

Blockchain for Transparency: Blockchain technology is being explored for its potential to improve transparency in affordable housing financing and distribution of funds. It can help ensure that funds are used efficiently and that affordable housing projects are executed without fraud or mismanagement.

Example: Honduras - Blockchain for Land Titling

Technology: Blockchain for land registries and transparency.

Impact: In Honduras, blockchain technology is being used to digitize land titles, making it easier for residents in rural areas to obtain official property rights. The system reduces the costs associated with land disputes and ensures greater transparency, which lowers transaction costs for affordable housing projects. By reducing land titling costs, developers can build more affordably in these areas.

5. Smart Cities and Urban Planning

Data-Driven Decision Making: The use of big data and artificial intelligence (AI) in urban planning allows for more efficient allocation of resources. Data on population growth, housing needs, infrastructure, and economic factors can help governments and developers make better decisions about where to build affordable housing and how to prioritize projects.

Example: Spain - Barcelona's Smart City Planning

Technology: Big data and AI for urban planning.

Impact: Barcelona has implemented a smart city framework that uses data analytics to optimize urban planning and resource distribution. The use of sensors and data from various sources (traffic, weather, energy use) helps the city allocate resources more efficiently. This reduces the overall cost of infrastructure, making space available for affordable housing projects in areas that are underserved or experiencing rapid population growth.

Internet of Things (IoT) in Urban Design: IoT technologies can be integrated into urban planning to improve the quality of living in affordable housing developments. Smart sensors can monitor air quality, waste management, and energy usage, contributing to a more sustainable and livable environment.

Example: Abu Dhabi - Masdar City

Technology: IoT for energy and water management.

Impact: Masdar City in Abu Dhabi is a pioneering project for sustainable urban living. It integrates IoT to monitor and manage energy usage, water consumption, and waste. This system reduces operational costs and environmental impacts, which can lead to lower costs for residents. The use of IoT helps maintain the infrastructure at a lower cost while ensuring the city remains eco-friendly and affordable.

6. Digital Housing Platforms for Finding Affordable Homes

Online Rental Platforms: Websites and apps like Zillow, Trulia, or Apartments.com use AI to match renters with available affordable housing. These platforms can help tenants find suitable housing in areas they might not have otherwise considered, and offer insights into affordability based on income, location, and amenities.

Example: India - Housing.com

Technology: AI-powered real estate platform.

Impact: In India, Housing.com is a digital platform that uses AI to match prospective renters with affordable homes. It aggregates data on rental prices, neighbourhood amenities, and availability. By providing a clear picture of market trends, it helps tenants find housing that fits their budget and allows developers to target areas with high demand for affordable homes, reducing vacancies and improving overall affordability.

Social Housing Apps: In some regions, mobile apps are being developed specifically to connect lower-income individuals with subsidized housing options. These apps can provide real-time availability of government-subsidized units and allow residents to apply for housing quickly and efficiently.

Example: USA - HUD's Housing Choice Voucher Program

Technology: Digital platforms for public housing programs.

Impact: The U.S. Department of Housing and Urban Development (HUD) has implemented an online application process for the Housing Choice Voucher Program (also known as Section 8). This has streamlined the process for low-income families to apply for affordable housing, reduced administrative costs for government agencies, and helped ensure that more families are placed in affordable housing more quickly.

7. Innovative Financing Models

Digital Payments and Microfinance: Technology facilitates microfinance and digital payment systems, which

allow lower-income individuals to access financing for homeownership. Mobile money services such as M-Pesa, widely used in parts of Africa, have provided individuals in underserved areas with the ability to make small savings deposits or secure loans for affordable housing.

Rent-to-Own Programs: Tech platforms are emerging to help support rent-to-own programs, where tenants can eventually purchase the home they rent. These platforms can provide transparent financial tracking and predictive analytics, helping tenants understand their financial path to homeownership.

8. Sustainable and Environmentally Friendly Solutions

Green Building Materials: New technologies in sustainable building materials, such as recycled materials, low-carbon cement, and bio-based insulation, are helping developers build affordable homes with a smaller environmental footprint.

Example: Kenya - Green Building Materials for Affordable Housing

Technology: Sustainable building materials.

Impact: In Kenya, developers are increasingly using affordable, eco-friendly materials such as compressed stabilized earth blocks (CSEB), which are made from local soil and are low-cost alternatives to cement. This reduces material costs, lowers the carbon footprint of construction, and results in affordable homes. These homes are also well-insulated, reducing energy costs for residents.

Smart Water Management: Technology can help manage water use more efficiently in affordable housing communities, reducing both environmental impact and utility costs for residents.

Example: South Africa - Smart Water Meters in Affordable Housing

Technology: Smart water management systems.

Impact: In South Africa, the City of Cape Town has integrated smart water meters in new affordable housing projects. These meters help households monitor their water usage, ensuring they don't exceed set limits and reducing wastage. The technology helps control costs for utilities, making it more affordable for residents to maintain their homes.

9. Accessibility and Inclusion

Universal Design: Technology can help create homes that are more accessible to people with disabilities. Features

like voice-controlled smart home devices, automated doors, or customizable lighting and heating systems can make affordable homes more adaptable for a range of physical needs.

Remote Work and Education Solutions: The rise of digital platforms for remote work and learning can make housing more affordable by allowing people to live in lower-cost areas while maintaining access to jobs and education opportunities.

10. Public Policy and Government Programs

Tech-Enabled Affordable Housing Policies:

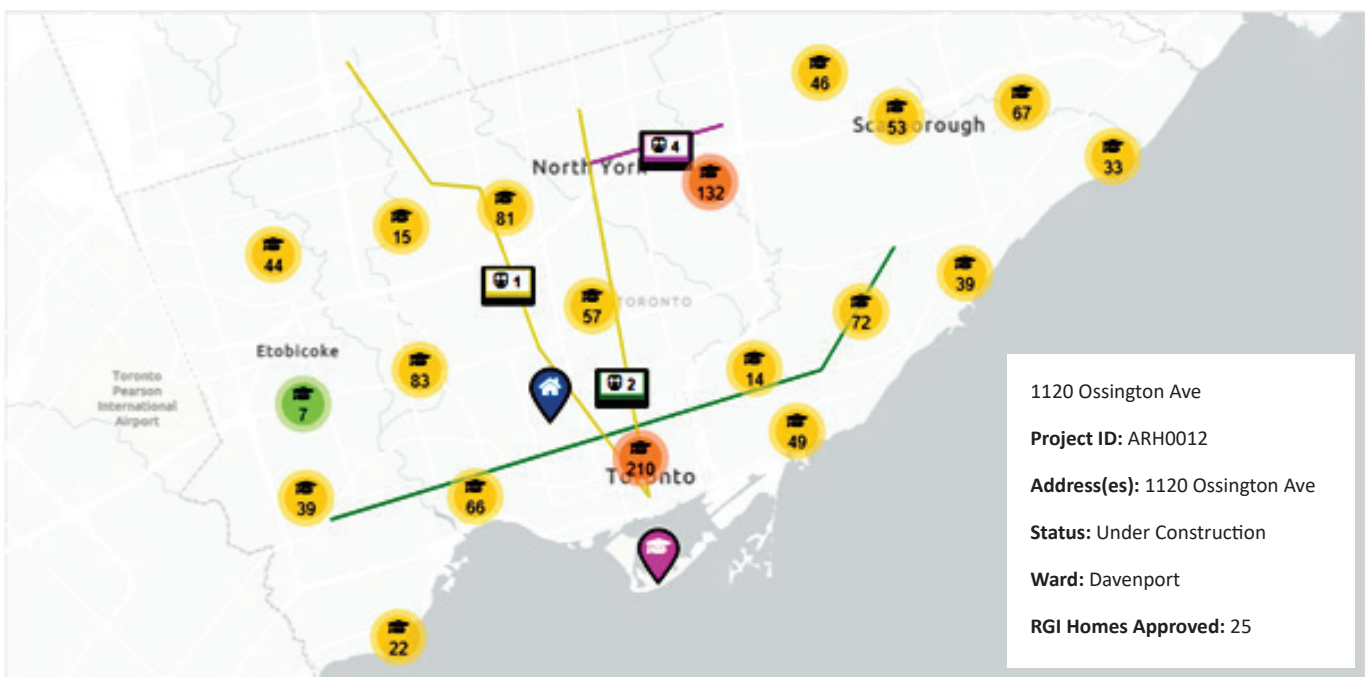
Governments can leverage technology to design more efficient housing policies, track affordability metrics, and optimize the use of land and resources. Platforms that allow for the tracking of housing subsidies, rent control policies, and low-income housing tax credits can lead to more effective affordable housing initiatives. Also, platforms that can map affordable housing units and the supportive physical and social infrastructure will be more effective in reaching consumers as witnessed in countries such as Canada.

Example: Canada - Toronto’s Housing Data Portal

Technology: Data and policy integration platforms.

Impact: Toronto has implemented a Housing Data Portal that uses data from different sectors (public transportation, health services, education) to better plan for affordable housing needs. By integrating data-driven insights, the city can make more cost-effective decisions about where to allocate housing resources, optimize land use, and reduce infrastructure costs, thus lowering the overall cost of affordable housing.

Overview of an under construction affordable rental housing mapped in Davenport, Toronto



Source: Affordable Rental Housing Map by Toronto City Government



Conclusion

In conclusion, the current state of India's housing market reflects an upcycle driven by factors such as the formalization of the economy, rising income levels, increasing number of nuclear families, and ample financing options. Despite a sharp rise in interest rates and residential prices, the mid and premium segments are steering sales, while there is a notable decline in the affordable housing segment. Government interventions, including the Pradhan Mantri Awas Yojana (PMAY) and reduced GST rates for under-construction affordable housing, aim to stimulate demand. However, sensitivity analysis reveals that the affordable housing sector is more susceptible to interest rate hikes and price escalations. Additionally, there are also supply-side bottlenecks hindering the launch of affordable housing units. The lag in supply will likely create a housing gap, which needs to be addressed by resolving the existing challenges. Policy measures such as development of affordable housing in the industrial corridors, increasing the free FSI would adequately address the supply side bottlenecks of developing affordable housing units in the urban centres in India.

Looking ahead, as India pursues ambitious economic growth targets, rapid urbanization is expected to lead to a surge in city growth, exacerbating the projected urban housing shortage, particularly in the affordable segment. Addressing this shortage presents a substantial financing opportunity, potentially generating INR 45 tn for banks and housing finance companies. Nevertheless, to unlock this market potential, it is requisite for the policymakers to introduce robust initiatives to resolve the existing challenges hindering both the demand and supply side of the affordable housing market.





KNIGHT FRANK INDIA PVT LTD

For further information contact

Gulam Zia

Senior Executive Director
Research, Advisory, Infrastructure,
& Valuation
+91 22 6745 0152
gulam.zia@in.knightfrank.com

Vivek Rathi

National Director
Research
+91 22 6745 0119
vivek.rathi@in.knightfrank.com

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Confederation of Indian Industry

CII

For further information contact

Nidhi Verma

Director
Confederation of Indian Industry
+91 98103 42666
nidhi.verma@cii.in

Nikhil Shiromani

Infrastructure Dept.
Confederation of Indian Industry
+91 83758 90407
nikhil.shiromani@cii.in

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.....
Author
Shilpashree Venkatesh
Assistant Vice President - Research
shilpa.shree@in.knightfrank.com

.....
Corporate - Marketing & Public Relations
Piyali Dasgupta - National Director
Corporate - Marketing & Public Relations
piyali.dasgupta@in.knightfrank.com

.....
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