

Microbuses have Mega Demand in Indian cities

Rethinking public transport for all 4,200 cities

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Image: Emotive Lens / CEEW

Executive summary

Fewer than 100 of India's 7,900 urban centres¹ have a formal bus-based city transport undertaking (ASRTU 2023). Most of the small and medium-sized cities² today are served only by informal intermediate public transport (IPT) (Kumar et al. 2026). IPT largely comprises informal shared transport services such as e-rickshaws, shared autos, tempos, and other such passenger vehicles. Most of these vehicles are ageing, contribute to congestion and disproportionate pollution. IPT vehicles are often sub-optimal, with seating capacities of only 2–9 passengers,

in dense urban settings. At the other end of the spectrum, standard buses typically seat 23–45 passengers. This creates a potential market gap for microbus-type vehicles 10- to 22-seater vehicles weighing less than 5,000 kg. These are typically classified as M2 category vehicles under the *Central Motor Vehicles Rules (CMVR), 1989*. These minibuses are potentially more adaptable to the spatial and operational constraints of narrow roads, dense city-core areas, and dispersed areas with lower travel demand.

Japan and South Korea have similar microbuses that operate as government-run services or demand-responsive stage-carriage services, connecting villages, elderly passengers, and tourists with large cities. Microbuses are widely used as flexible and affordable paratransit services, operated by informal private operators in cities across the Global South. In Latin America, 16-seater *peseros* and combi taxis operate as informal microbus services, while South Africa has *dala-dala* buses that typically accommodate up to 20 passengers. Hong Kong, Manila, and Jakarta have semi-formal microbus services with defined routes and fares, using jeepneys (old military jeeps use a public transport) and public light buses (PLBs) that seat 14–18 passengers. These microbuses sometimes account for as high as 60–70 per cent of the total modal share of road-based motorised transport in the city (Dumedah and Eshun 2020).

Learning from the Global South experience, our study aims to test the hypothesis that ‘microbuses can optimally serve the transit needs of top 4,000 small and medium-cities in India’. The policy brief informs city and state governments in planning their future public transit fleets. Our model supports rethinking urban bus transit for small and medium-sized cities, especially for narrow roads and routes with low, dispersed passenger demand.

Study develops a ‘public-transit vehicle-capacity optimisation tool’ (PT V-Co tool) to estimate the use case and market size for microbuses across Indian cities. The tool assesses various modal shift scenarios and planned city transport service levels. The model develops inputs for trip-length distribution, number of routes, and route-level trip demand based on a 2020 CEEW survey of 61 cities (Soman, Kaur and Ganesan 2019) and Census 2011 travel data (OGD Platform India 2011). We also model 2–3 representative cities in each of the five city population categories – small (20,000 – 50,000) medium (50,000 – 3 lakh), large (3–10 lakh), million plus cities (10–40 lakh), and megacity (more than 40 lakh) – to corroborate the model inputs. Thus, the model computes the optimal vehicle capacity (in seats) at the route level, for varied trip lengths covering intra-city and peri-urban areas.

1. Census Town: Urban area with minimum population of 5000, where 75% of the male main working population engaged in non-agricultural pursuits and population density of at least 400 persons per square kilometres

Statutory Town: Urban area with recognised urban local bodies such as municipal corporation, municipality, cantonment board, nagar panchayat etc.

2. Small city: Population with 20,000 - 50,000; Medium city: Population with 50,000 – 3,00,000





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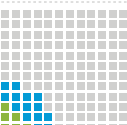
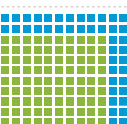
The required number of microbuses and their use cases are calculated using the V-Co tool for each of the five city-size categories. Microbus demand is projected for 2031 based on anticipated urbanisation and the growth in the number of cities.

Key findings

India needs approximately 6.5 lakh microbuses by 2031 to serve top 4,000 cities, with about 3/4th demand concentrated in small and medium-sized cities. Our model and tool-based analysis highlighted the following key insights:

1. **Microbuses are optimal for short to medium length trip like up to 10 km.** They may be more suitable than standard buses for intra-city travel in medium-sized and large cities. Microbuses also remain optimal first- and last-mile vehicles for metro feeder services in metropolitan and megacity areas.
2. **Microbuses are optimal for passenger demand of 140–270 passengers per hour** and at a frequency of one vehicle every four minutes. Smaller battery capacities may be viable, as microbuses serve mid-range routes of up to 10 km. Microbuses could also provide regional *mofussil* (peri urban area) connectivity.
3. **Microbuses offer distinct advantages in hilly areas**, including safe operation on narrow roads, viability on routes with low, dispersed demand, and better power and torque on hilly terrain.
4. **There is lack of microbus type of vehicle options in the Indian market to meet this demand**, unlike in comparable Global South economies. Smaller sized cities are forced to opt for larger buses, potentially burdening them with additional operational losses. As a result, transit networks remain sparse and service frequencies low, while informal IPT absorbs unmet demand, driving private-vehicle use, congestion, and pollution.
5. **Microbuses could help mitigate approximately 2,800 tonnes of particulate matter (PM) pollution annually.** The report presents only the ambitious modal shift scenario -80 per cent of public transport motorised trips shift to microbuses, to maximise environmental and decongestion gains. We estimate gains by optimising vehicle kilometres, reducing private-vehicle use, and introducing cleaner technologies such as electric vehicles (EVs).

Figure ES1. India will require an estimated 6.5 lakh stage-carriage microbuses for urban operations by 2031

City Category	1 unit = 50,000 people Lower limit Upper limit	Projected number of cities in 2031	Microbuses per city	Microbuses per 1000 people	Total number of microbuses in city category	Distribution of microbuses across city category (%)
Small		2,727	70–100	2.7	2,62,000	41
Medium		1,248	150–200	1.3	2,31,000	36
Large		164	380–500	0.7	70,000	11
Million-plus		62	850–970	0.3	40,000	6
Mega		9	4,000–5,200	0.6	42,000	7

Source: Authors' analysis.

Recommendations

To introduce microbuses at scale, we recommend a three-step process based on our study and extensive stakeholder discussions:

Develop a small bus programme for public transit in small and medium-sized cities. A few original equipment manufacturers (OEMs) have developed electric microbus prototypes, presenting an opportunity for governments to aggregate demand and procure 8,000–10,000 microbuses for pilot deployment in 30–50 small cities. Through this approach, they can inform vehicle design, standardisation, and specifications and potentially open up the private market for these vehicles. A programmatic approach would also help address barriers in these nascent markets, including limited technical planning and implementation capacity at the local level, as well as the capital expenditure required to set up depots, terminals, bus stops, charging infrastructure, and rolling stock. Additionally, aggregated public procurements will give OEMs greater confidence to introduce more products in the microbus category.

Ease and rationalise regulations governing microbuses. Current permit regulations classify microbus-like vehicles as 'maxi cabs' or 'minibuses', limiting their use in public transport. Maxi cab permits limits seating capacity and restrict operations to tourism, while bus permits are comparatively costly. Defining microbuses under the Central Motor Vehicles Rules is therefore essential to enable their use as route-based, stage-carriage public transport. Pilot interventions, primarily driven by OEMs and research institutions, are critical to develop electric variants and fleet management practices. State governments must consider planning microbus initiatives to encourage sector formalisation.

Establish a robust institutional set-up to channel investment and finance for the scaled adoption of microbuses. Microbus adoption can be further scaled through two methods:

- State-led institutions, such as state infrastructure development corporations, should leverage green financing to develop microbus-based transit-programs. These, coupled with state-wide demand aggregation, clean energy mandates, and restrictive policies on private-vehicle use, can enhance the feasibility of such endeavours.
- The state may opt to formalize the current informal IPT markets by providing credit guarantees, interest subvention, and scrappage-linked incentives to replace the old and polluting IPT vehicles with standardised, modern microbus models.

As India urbanises at a faster rate, grows economically, and decarbonises while addressing the challenge of air pollution, rethinking microbuses can provide reliable, clean public transport across its top 4,000 cities. Thus,

the union government must conceptualise a *National Small Bus Programme* to aggregate demand across cities and catalyse the market. A national programme can help build local public assets, transit infrastructure, and technical capacity at scale, thereby improving citizens' quality of life. To do this, civil society organisations (CSOs), OEMs, and academics must collaborate to map travel patterns in small and medium-sized cities across urban India, develop suitable transit solutions through pilots, and conduct market and business assessments to inform robust vehicle specifications. Our study is the first step in this direction.

National Small Bus Programme is a must to catalyse the microbus market - aggregating demand, rationalising regulations and easing finance.



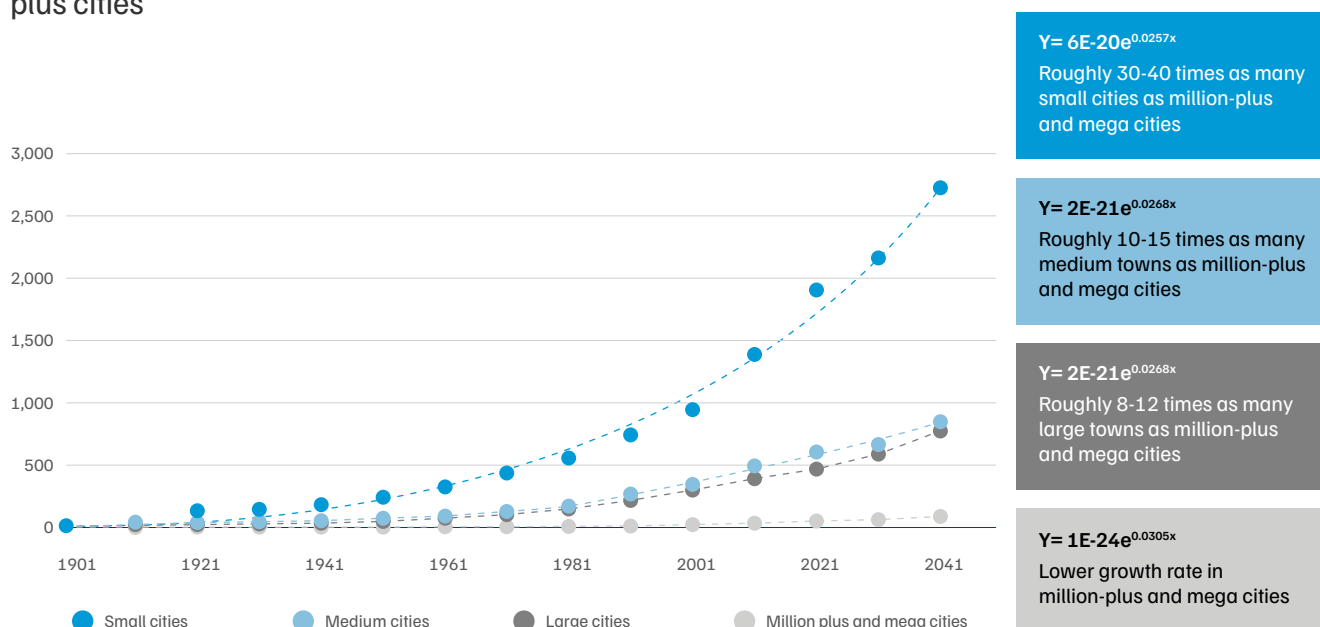
Image: iStock

1. Growing mobility challenges in the smaller cities of India

India is home to about 7,900 cities and towns (OGD Platform India 2011). It has 4,041 statutory towns³ with more than 20,000 people. As their populations grow and economic activities diversify, many villages have been reclassified as census towns. India has 3,894 census towns⁴ with 5,000-20,000 people, which are not covered as part of this study. In India, the share of urban population living in small cities with population of 20,000-50,000 are approximately 11.1 percent and for the medium sized cities population of 50,000- 3,00,000 are responsible for around 28.5 per cent of the urban

population, together approximately 40 per cent of the urban population are living in small and medium sized cities according to census 2011 (OGD Platform India 2011). Figure 1 highlights the exponential increase in the number of cities with populations under 10 lakh between 1901 and 2011 in comparison to million plus cities and mega cities. Notably, nearly 94 per cent of Indian cities have populations of less than 5 lakh (OGD Platform India 2011), highlighting the predominance of smaller urban centres in the country's urban landscape.

Figure 1. Small and medium-sized cities have grown substantially in number relative to million-plus cities



Source: Shaban, Abdul, Karima Kourtit, and Peter Nijkamp. 2020. "India's Urban System: Sustainability and Imbalanced Growth of Cities." *Sustainability* 12 (7): 2941. <https://doi.org/10.3390/su12072941>.

The organic, unplanned urban growth has resulted in a surge in travel demand, coupled with the absence of formal and structured public transport services. A variety of informal shared transport services, commonly referred to as intermediate public transport (IPT), and motorised personal two-wheelers, have emerged across these cities to bridge this gap (Ponodath et al. 2018).

Unfortunately, fewer than 100 cities nationwide have formal public transport systems (ASRTU 2023). The recently launched *Prime Minister e-Bus Sewa Scheme*, championed by the Ministry of Housing and Urban Affairs

(MoHUA), aims to cover 169 cities with populations of (3-40 lakh according to Census 2011+ state capital below 3 lakhs) and deploy 10,000 electric buses by March 2027. However, nearly 3,900 cities estimated for 2031, with population <3 lakhs, will not be covered under the scheme.

Standard bus models available in the Indian market can typically carry 23–60 passengers at a time, depending on the vehicle type, such as luxury or standard buses. Most of these cities lack the hourly passenger demands needed to support a viable standard-bus system.

3. Urban area with recognised urban local bodies such as municipal corporation, municipality, cantonment board, nagar panchayat etc.

4. Urban area with minimum population of 5000, where 75% of the male main working population engaged in nonagricultural pursuits and population density of at least 400 persons per square kilometers.

They also have limited serviceable road networks – Right of Way (RoW > 21 meters) suitable for standard bus operations, in mixed traffic conditions. Small and medium-sized cities in India face significant urban infrastructure limitations, largely due to limited governance capacity and financial resources. Organic urban development, particularly the evolution of old historic cores, has created constrained, narrow road networks that are often unsuitable for standard buses.

The popularity of IPT stems from several inherent advantages: small vehicles can easily navigate narrow, congested roads, fares are relatively lower than those of private vehicles, and passengers experience minimal waiting times (Ponodath et al. 2018).

The widespread reliance on such informal modes also presents challenges. Most of these vehicles have lower build quality, are often overloaded, and contribute to frequent congestion, raising concerns about passenger safety. Accessibility remains a critical issue, as these modes often fail to accommodate the needs of elderly passengers, children, and persons with disabilities (Nichols et al. 2025). They also offer limited comfort and expose passengers to adverse weather conditions. This is especially true for e-rickshaws, which may limit their adoption in southern Indian cities (Joshi et al. 2023). The evolving expectations of commuters, particularly the demand for reduced waiting times and willingness to pay for better services, have significantly reshaped transport choices.

Shared IPT services have become expensive in the absence of market regulation. Our datasets and focus group discussions (FGDs) across selected case cities highlight it.

The Household Consumption Expenditure Survey (HCES) 2022–23 reveals a sharp rise in household expenditure on conveyance. In rural areas, conveyance's share of total consumption expenditure increased from 4.20 per cent in 2011–12 to 7.55 per cent in 2022–23, while monthly per capita spending on it rose 4.75-fold in nominal terms, from roughly INR 60 to INR 285. In urban areas, the share increased from 6.52 to 8.59 per cent, and spending rose 3.24-fold, from roughly INR 171 to INR 555 (MoSPI, 2024).⁵ In parallel, private-vehicle sales increased significantly year on year. Two-wheeler sales rose from 1.59 crore units in FY 2022–23 to 1.80

crore units in FY 2023–24. Similarly, four-wheeler sales increased sharply from 38.9 lakh to 42.2 lakh units over the same period (Mukherjee 2025). This trend underscores a critical trade-off: households are increasingly compelled to choose private vehicles for their flexibility and comfort rather than rely on missing or infrequent bus services. The resulting roadside parking, which occupies 40–56 per cent of road length in cities such as Patna, Puducherry, Madurai, Agra, Bhopal, Amritsar, and Shimla, further reduces traffic speeds and adds to delays (Roychowdhury et al. 2018). Hence, there is a need to explore more sustainable alternatives in these small and medium-sized cities.

Transit planners need to identify the right vehicle for public transportation in small and medium-sized cities – one that can optimally meet passenger demand while addressing service-level expectations. Such an affordable service could help cities address the lack of formal public transport services, manage increasing congestion caused by sub-optimal IPT vehicles, and reduce passenger transport emissions.

Our study tests the hypothesis that microbuses are a missing vehicle segment in the Indian context and have the potential to serve a wide variety of passenger trips across cities. Microbuses are defined in study as vehicles in the M2 category⁶ of MoRTH, with 10-22 seats and a maximum gross vehicle weight (GVW) of 5,000 kg.

We developed a model that estimates the optimal capacity of public transport vehicles when demand and service levels are predefined across a range of city-size categories. We also examine existing microbus-type services in both the Global South and Global North, outline their use cases, and assess the Indian microbus market.

Study analysis conclude that microbuses are an important and viable mode of transit in Indian cities and estimate their potential demand. We collate recommendations for introducing microbuses into the Indian vehicle market, particularly in small and medium-sized cities.

Microbus is the missing vehicle in India's small and medium-sized cities: big enough to replace crowded IPT, small enough for narrow roads.

5. 2011–12-rupee values are derived from published shares and average MPCE; all values at current prices.

6. M2 category vehicle designed to carry passengers that has more than eight seats in addition to the driver's seat (9 or more total seats) and a maximum gross vehicle weight not exceeding 5 tonnes (5,000 kg).

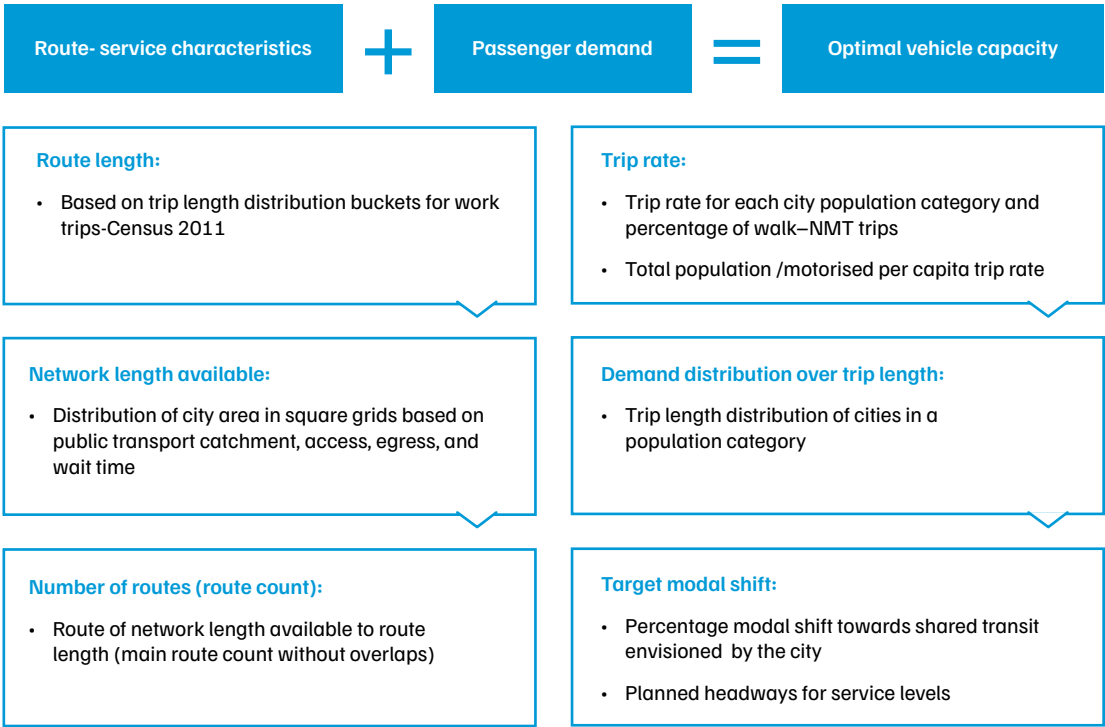
2. Optimal vehicle size for public transport within Indian cities

Public transport capacity is the designed passengers per hour per direction, while being optimised for trip-length distribution and service levels. Service frequency and accessibility are key determinants of the reliability and dependability of these systems. The available road length across the trunk, arterial, and sub-arterial networks in an urban centre determines the level and nature of public transport services that can be deployed in the city (Tiwari and Jain 2023). Lastly, the number of routes operated under a service depends on demand, network layout, and the available serviceable network length.

The serviceable network length is largely determined by road width. Narrow and dense road networks in old-city cores, low-income colonies, urban villages, and hilly areas are often unsuitable for standard buses. This is also the case in India's 4,000 small and medium-sized towns.

However, there are limited tools and models for planning public transport in small and medium-sized cities. Demand in these cities is typically sparse and distributed over longer peak periods. Further, data gaps remain regarding the expectations and perceptions of the current, captive, and potential users of shared vehicles in these cities regarding level of service. Given the narrow roads, limited primary and secondary road networks available for public transport, and dispersed demand, these cities need context-specific solutions that require rethinking urban bus sizes and service planning. Further, intra-city demand must be integrated with regional mobility to ensure adequate connectivity and address regional interdependence.

Figure 2. Route and passenger demand characteristics determine the optimal vehicle capacity



Source: CEEW analysis

To rethink bus services in these cities across different sizes and capacities, we developed a simple ‘public transit vehicle-capacity optimisation’ tool (PT V-Co tool). The model analyses five city population categories to estimate the optimal vehicle capacity

for different potential routes and levels of passenger demand (see Figure 2 and Annexure 1a). We use these five city categories (as shown in Table 1) to compute the aggregate demand generated by urban centres nationwide. The city classification adopted for the study

aligns with two primary groups: (1) cities covered under the *PM e-Bus Sewa Scheme* with a population of more than 3 lakh and (2) the city population classification used by the United Nations Department of Economic and Social Affairs (UN DESA).

The assessment of unserved cities in the CSE 2026 study is based on the 468 Class I cities (population 0.1 - 1 million) identified in Census 2011 (CSE 2026). Our analysis uses a broader city universe of around 4,000

urban centres, allowing the assessment to include a wider range of small, medium and larger cities.

We develop a practical model to compute vehicle capacity based on envisaged scenarios of city-wide modal shares and service levels (headway). Annexure 1 provides the detailed methodology for these calculations.

Table 1. India's urban centres are classified by population size, with small and medium-sized towns forming the largest categories

City category	Class of city category as defined by Census 2011	Population classification	Number of towns in 2011	Projected number of towns in 2030
Census towns	Class IV & Class V	5,000-20,000	3,894	3,900*
Small	Class III	20,000–50,000	1,905	2,727
Medium	Class II and Class I (above 1 lakh)	50,000–3,00,000	911	1,248
Large	Class I (below million-plus cities)	3,00,000–10,00,000	109	164
Million-plus	Class I (million-plus cities)	10,00,000–50,00,000	45	62
Mega City	Class I (multimillion megacities)	>50,00,000	8	9
*Census towns are not covered in this study scope.				

Source: UN DESA (United Nations Department of Economic and Social Affairs). 2025. *World Urbanization Prospects 2025: Summary of Results*. UN DESA/POP/2025/TR/No. 12. United Nations. <https://desapublications.un.org/publications/world-urbanization-prospects-2025-summary-results>; Shaban, Abdul, Karima Kourtiti, and Peter Nijkamp. 2020. "India's Urban System: Sustainability and Imbalanced Growth of Cities." *Sustainability* 12 (7): 2941. <https://doi.org/10.3390/su12072941>.

The model estimates vehicle capacities for different route lengths and passenger demand levels across the five city categories. We also use the Indian Institute of Technology, Delhi (IITD) study (Tiwari and Jain 2023), Census 2011 datasets, and CEEW mobility surveys (Soman et al. 2019) to estimate trip-length distributions across these cities (see Annexure 1b). We assess multiple scenarios for shifts in modal share, as part of our analysis. However, to maximise pollution reduction and support travel demand management, the report highlights only the model findings for an "ideal vision of an 80 per cent public transport modal share amongst motorised trips". *The National Urban Transport Policy*, published by the MoUD in 2006, several comprehensive mobility plans,

development plans, and master plans, including the approved *Delhi Master Plan 2047* (DDA 2026), advocate a high public transport modal share among motorised trips.

The following sections set the context for the typical features, mobility characteristics, and challenges for each city category. We present only a few sample cities for reference, that are used to build model inputs. The key model inputs are the number of routes by route length and the travel demand on each route. Our model estimates the range of optimal vehicle capacities and the number of vehicles required to serve each route.

2.1 Small cities

Number of small cities: 1,905 (OGD Platform India 2011).

Population of small cities: 20,000–49,999 (MoUD 2014).

City characteristics

Typically, these are fast-growing small towns that have evolved from large villages, largely due to their proximity to highways, bazaars, or other towns. These towns serve as tehsil headquarters, host local mandis (market), and provide access to secondary healthcare facilities and educational institutions.

Small towns, particularly new census towns, account for about 30 per cent of India's urban growth (Chakrabarti and Mukherjee 2020). Within these small towns, formal public transport is mostly absent. Public transport is typically limited to intercity state buses and, in a few cases, municipal or private buses (Ahmad and Puppim de Oliveira 2016). Shared autorickshaws, Vikrams (8 seaters auto rickshaws), Tata Magic vehicles (TATA passenger van), and e-rickshaws fill the major public transport supply gaps in these towns (Kumar et al. 2016).

Model findings

The average area of these small cities is 20 sq km, with almost half of them covering less than 10 sq km. The median population density is approximately 3,000 persons per square kilometre. There were about 1,900 cities in this category in 2011, and this number is projected to increase to 2,727 by 2030. Around 75–90 per cent of trips in small cities are less than 5 km. These cities are generally served by 2–3 major trunk roads (>18 m right-of-way [ROW]), along which most commuting and non-commuting destinations are concentrated. Standard buses can serve only these roads.

For the rest of the cities, given its narrow roads, vehicles with a capacity of 10–22 passengers are optimal compared with e-rickshaws and shared autos. These vehicles could also connect these cities with nearby villages and cities within a radius of 15–25 km. Typically, 96–100 such vehicles can meet intra-city demand while also providing connectivity to outer areas.



A tempo-hanseat carries up to 12 passengers and serves as the main shared transport in small cities of Punjab.

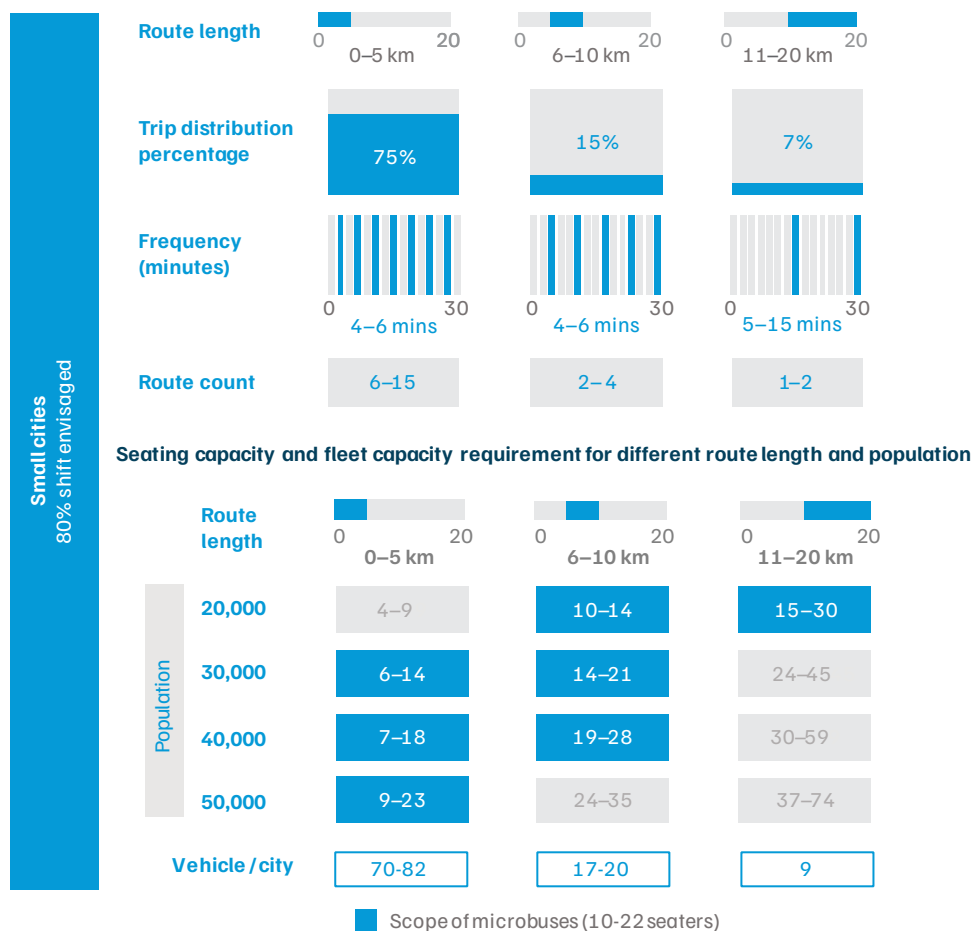
Box 1. Representative case examples of small cities

Case example (a): Adampur, Punjab, depends heavily on IPT modes such as *bhoonds* (local name of private operated shared passenger jeep), tempos, e-rickshaws, and autorickshaws to meet its mobility needs. The overloaded *bhoonds* (Image 1) carry about 9–12 passengers over trip lengths of 5–8 km. Passengers wait up to 25–30 minutes for these services and pay INR 10–30 per trip. Most cities have banned these old and polluting modes.

Case example (b): Rameshwaram, Tamil Nadu, a pilgrimage site, attracts over 7 lakh tourists each month. Intra-city travel comprises autorickshaw, taxi, and car rental services. Buses connect the town to the main bus stand. Most trips cover short distances of 2–3 km. Most peri-urban trips are 10–15 km long, connecting Pamban and Dhanushkodi. Autorickshaws and taxis are common choices for tourists travelling to peri-urban areas (Kumar 2017).

Source: Authors' compilation

Figure 3. 70–100 fleets are required in small cities to successfully operated Microbuses respect to the population, trip number and route length



Source: CEEW analysis

2.2 Medium-sized cities

Number of medium-sized cities: 911 cities (OGD Platform India 2011).

Population of medium sized cities: 50,000–2,99,999 (MoUD 2014).

City characteristics

These cities are typically district headquarters and centres of administrative and judicial activities. They serve as hubs for employment, education, commerce, and healthcare in the district. These cities play a pivotal role in the overall growth of the region.

In most medium-sized cities, city bus systems are either absent or planned. State transport corporations mainly operate inter-city routes, while only a few cities have municipal bus fleets (Roychowdhury et al. 2026). Low-income, casual, and socially disadvantaged groups continue to rely heavily on shared transport, including paratransit and IPT, as well as non-motorised modes. In contrast, higher-income groups are more likely to use motorised two-wheelers (Gadepalli et al. 2020).

Model findings

The 2011 Census identifies about 911 such medium-sized cities while UN DESA estimates that this number will increase to about 1,250 cities by 2030. These towns have an average area of 30 sq km, with most covering less than 45 sq km. They have an average density of 8,500 people per square kilometre and account for up to 25 per cent of urban India.

An optimal microbus-type vehicle with a capacity of 10–22 passengers will primarily serve intra-city trips. A total of 190–230 such vehicles would be suitable to meet short-distance demand (<5 km) in Class I cities with populations of up to 300,000, and both short- and medium-distance demand (5–10 km) in Class II cities with populations of 50,000–100,000.



Image: CEEW

Bhoonds and Vikrams carry about 16–20 passengers in Tarn Taran, Punjab.

Box 2. Representative case examples of medium-sized cities

Case example (c): In Tarn Taran, Punjab, kadukas (local name of private operated shared passenger van) connect the cities with nearby villages within a radius of 10–15 km, carrying about 20 passengers per trip. Passengers wait 20–25 minutes for these locally modified and overloaded *kadukas* and pay high fares of INR 10–30 per trip. About 20–30 such tempos also serve intra-city trips in Tarn Taran (Image 2).

Case example (d): Mehsana, Gujarat. Overloaded autos cater to intra-city travel demand, charging INR 10–15 for trips typically covering 5–8 km. In addition, private standard buses operate to peri-urban areas such as Modhera, Jotana, Gozaria, Visnagar, and Bhandu, charging INR 20–30 for distances of 15–18 km. Gujarat State Road Transport Corporation (GSRTC) buses, private buses, and taxis connect Mehsana with important regional destinations such as Ahmedabad and Gandhinagar.

Source: Authors' compilation

Figure 4. 150–200 fleets are required in medium cities to successfully operated Microbuses respect to the population, trip number and route length



Source: CEEW analysis

2.3 Large cities

Number of large cities: 109 cities (OGD Platform India 2011).

Population of large cities: 3–10 lakh (MoUD 2014).

City characteristics

Large cities are often regional economic hubs and play a central role in administration and education. They drive state and regional growth by creating opportunities in manufacturing, tourism, and commerce. These cities require strong connectivity within the city and with other regional cities that serve as producers, consumers, and trade hubs. Such interdependence fosters a dynamic city-economic region (CER) landscape across these large cities. The *Union Budget 2026–27* emphasises CERs, including investments in transport and other infrastructure, alongside greater financial autonomy (MoF 2026).

Motorisation is steadily increasing in large cities. While rising affordability enables middle-income households to shift to private vehicles, lower-income groups remain dependent on walking, cycling, and low-cost public transport, including paratransit (Ahmad and Puppim de Oliveira 2016). Yet peripheral areas often remain poorly served by these services, resulting in inequitable access. The Prime Minister e-Bus Sewa Scheme aims to introduce electric bus services in 169 large cities with

populations of 3–40 lakh (according to Census 2011+ state capital below 3 lakh) (PIB 2023). Consequently, IPTs continue to play a significant role, but their share is gradually declining as rising incomes and inadequate walking infrastructure push commuters towards privately owned two-wheelers (Goel and Mohan 2020).

Model findings

The 2011 Census shows that 109 towns fall in the large-town category. This number is projected to increase to 164 by 2030 (UN DESA 2025). We estimate the average area of these towns at 68 sq km, with 80 per cent covering less than 125 sq km. The average population density is 9,600 persons per square kilometre. Up to 65 per cent of work trips in these cities are less than 5 km long.

We find that an M2-category vehicle could provide intra-city rapid services in cities with populations exceeding 3 lakh. Our model estimates that approximately 400–450 such microbuses would be required to serve around 40–70 short routes, each up to 5 km long, providing intra-city and/or feeder services across cities in this category.



IPT users in Jalandhar pay higher fares for short trips and travel in overcrowded conditions.

Box 3. Representative case examples of large cities

Case example (e): Jalandhar, Punjab, lacks a public transport system and relies on shared diesel autorickshaws and tempos, as shown in Image 3. Passengers travelling by IPT pay a high fare of INR 20–25 for a 2.5 km journey. Narrow roads within the organic layout make bus operations unviable. The city is rethinking formal public transport using smaller modes, as buses are less attractive due to long waiting times. However, smaller modes may be better suited to connecting the city with Phagwara, Hoshiarpur, and Kapurthala.

Case example (f): Ujjain, Madhya Pradesh, receives a high influx of tourists annually. It is served by around 7,500 shared autorickshaws and Magic vehicles, as it lacks a public transport system. These vehicles often carry 8–10 passengers, well beyond their designed capacity, and charge high fares for short distances.

Source: Authors' compilation

Figure 5. In large cities, microbus fleet requirements are 380–500, vary with population, route length, and service frequency



Source: CEEW analysis

2.4 Million-plus cities

Number of million-plus cities: 45 (OGD Platform India 2011).

Population of Class I towns: 10–50 lakh (MoUD 2014).

City characteristics

Million-plus cities, often state capitals, function as administrative, judicial, cultural, and economic hubs. They have stronger infrastructure capacity and political influence and are home to both residents and migrants. As state headquarters, these cities typically have greater technical expertise, financial resources, and political will to implement large-scale utility infrastructure. Our analysis of Census 2011 data shows that for every 10 lakh increase in city population, public transport's mode share increases by approximately 4 per cent, accompanied by a similar decline in walking and cycling. Both car and public transport shares tend to rise with city size, while the share of non-motorised transport (NMT) steadily decreases (Goel and Mohan 2020). Interestingly, the modal share of paratransit remains 12–20 per cent in most cases. In this context, shared autos, minibuses, Vikrams, Tata Magics, and similar IPT modes play a critical role in addressing public transport supply gaps, particularly along radial corridors and in providing first- and last-mile connectivity (Goel and Tiwari 2016).

Model findings

The 2011 Census reported 45 metropolitan cities with populations of 10–50 lakh across India. This number is projected to increase to 62 by 2030 (UN DESA 2025). The median area of these cities is 175 sq km, with about 80 per cent covering less than 200 sq km. These cities have an average population density of 11,000 people per square kilometre. Most have established formal public transport systems and are enhancing them under national and state schemes to meet rising demand. Over 60 per cent of trips in these cities are less than 5 km long.

Our model shows that M2-category vehicles could serve short intra-city trips (<5 km) and provide feeder services to metro-rail systems in these metropolitan cities. We estimate that 700–800 microbuses per city could serve first- and last-mile trips to congested urban villages, other low-income areas, and old-core city areas with narrower ROW.



Dense urban networks in large cities limit standard city bus services, increasing dependency on Tempos.

Box 4. Representative case examples of million-plus cities

Case example (g): Patna, Bihar, is highly dependent on IPT for daily commuting, which holds a modal share of 36 per cent (Ansari and Sinha 2020). About 25,000 shared autorickshaws carry 5–9 passengers each. The city roads are narrow, with 80 per cent having a ROW of less than 10 m, limiting the provision of standard city bus services. Patna's metro priority corridor has been inaugurated on October 2025, but concern still remain at the first and last mile connectivity.

Case example (h): In Bhopal, Madhya Pradesh, about a quarter of trips are made using various modes, including minibuses (20 per cent) and autos. Magic taxis operate from the city to peri-urban areas and nearby towns such as Bairagarh, Lalghati, Ratibarah, Sehore, Hoshangabad, Bhauri, and Kalapani, covering distances of 10–12 km at fares ranging from INR 20–30 (ESCAP 2018).

Source: Authors' compilation

Figure 6. In million-plus cities, fleet requirements are 850–970, considering 80 percent of the public transport modal share depends on microbuses.



Source: CEEW analysis

2.5 Megacities

Number of megacities: 8 (OGD Platform India 2011).

Population threshold: Class I towns with a population of more than 50 lakh (MoUD 2014).

City characteristics

Megacities are large urban areas or urban agglomerations that may have absorbed several towns and cities, forming a contiguous urban area. These regions are globally prominent, attract significant investment, have extensive infrastructure, and drive the highest economic growth.

Travel cost and distance are the strongest determinants of mode choice for low- and lower-middle-income households. Two-wheelers dominate short- to medium-distance work trips, while buses are preferred for longer journeys. Metro services remain underutilised due to affordability constraints (Ghosh et al. 2023).

NMT and IPT remain essential modes, particularly for low-income households and slum residents, helping bridge the gap between affordability and accessibility (Mahadevia et al. 2023). Affordable and efficient modes that can navigate dense, low-income settlements with narrow lanes and connect residents to transit services are essential.

Model findings

India has eight megacities in this category, as per the 2011 Census, and this number is projected to increase to nine by 2030 (UN DESA 2025). More than 25 per cent of work trips in these cities are over 10 km long (Goel and Mohan 2020). The average area of these cities is 800 sq km, with an average population density of 13,000 persons per sq km. While Delhi and Hyderabad remain the largest urban agglomerations, each covering approximately 1,200 sq km, Mumbai is the most populous city, with a population density of more than 20,000 people per square kilometre.

Our model finds that, in this city category, microbuses would primarily function as rapid intra-city and feeder services for the existing public transport system, serving a large volume of trips of up to 5 km. Approximately 4,000–5,200 such vehicles could adequately cover short-distance and feeder trips in a typical megacity.



Gramin Sewa running on a specified route in New Delhi.

Image: CEEW

Box 5. Representative case examples of megacities

Case example (i): New Delhi, a megacity, has a large urban agglomeration comprising several cities with populations exceeding 30 lakh, as well as a few smaller cities. It has one of the highest rates of personal vehicle penetration in India. Around 6,000 *Gramin Sewa* (Tata Magic) vehicles operate as feeders to the metro and as a shared mode of transport for low-income residents in dense areas with narrow lanes, as shown in Image 5. These affordable services cost just INR 5–15 and operate on more than 100 regulated routes.

Case example (j): Hyderabad, Telangana. The city has a high number of two-wheelers and cars. 1.8 lakh autorickshaws and tempos cater to the city's 18 per cent modal share through shared services (HMDA 2021). Growing congestion, driving stress, and road safety risks necessitate high-quality options for short-distance commutes. The city also has an extensive 70-km-long metro network.

Source: Authors' compilation

Figure 7. In megacities, fleet requirements are 4,000–5,200, considering 80 percent of the public transport modal share depends on microbuses.



Source: CEEW analysis

Summary

Across all five city categories, our model identifies the same gap: a 10- to 22-seat vehicle sits between the IPT modes these cities currently rely on and the standard buses that their road networks cannot accommodate. What changes with city size is the role of the vehicle rather than the vehicle itself. Small and medium-sized towns would need roughly 96–100 and 190–230 such vehicles, respectively, to meet the bulk of intra-city travel demand; large towns would need 400–450, and million-plus cities would need 700–800, mostly on routes under 5 km that have medium but dispersed demands. A typical megacity would need about 4,000–5,200 such vehicles, almost entirely as feeder alongside its existing public transport network and short-trip services especially connecting old city area and urban village areas with narrow roads. .

The need of microbuses are estimated across all city sizes - around 100 in a small town to over 4,000 microbuses in a megacity.

3. Rethinking microbus-based transit in Indian cities

As India's urbanisation continues over the next two decades, most existing cities are likely to become larger, denser, and more congested.

Indian cities are typically characterised by mixed land use, high density, and limited road widths. This require cities to manage increasing travel demands while meeting expectations for an adequate level of service. Thus, indigenous solutions require - rethinking urban buses, formalising the informal IPT markets, and overhauling regional connectivity. As part of this effort,

we challenge the typical standard bus models and postulate that a smaller-capacity vehicle, with 10–22 seats, 'microbus' category vehicles, can potentially serve narrow lanes and low-to-medium dispersed travel demands across cities.

In this chapter, we assess aggregate demand for microbus-type vehicles (MoRTH M2-category vehicles) across city categories for stage-carriage commutes.

Box 6. Definition of microbuses, minibuses, and IPT

The *Collins English Dictionary* defines a microbus as a large van with passenger seats at the back and windows along its sides. Meanwhile, the *Cambridge Dictionary* treats 'microbus' and 'minibus' as synonyms, defining them as small buses with approximately a dozen seats.

- IPT is considered mainly an informal sector comprising e-rickshaws, shared vehicles, cycle rickshaws, and other four-wheeled passenger vehicles with a seating capacity of 2–8 passengers.
- A minibus typically has a seating capacity of 18–27 passengers, including the driver. This category of vehicles is not covered specifically in study scope.

This study defines microbuses as vehicles with a passenger seating capacity of 10–22 seats to establish a clear scope. This scope overlaps partially with mini-buses definition.

3.1 Aggregating microbus demand for commuting in Indian cities

Our model estimates that urban India will need 6.5 lakh stage-carriage microbuses in 2031, operating on fixed routes with designated stops. An estimated 77 per cent of this potential demand is expected to come from small and medium-sized towns. Experts opine that stage-carriage operations constitute only 20 per cent of the total IPT vehicle market. Thus, approximately 32.2 lakh microbuses could potentially serve as contract vehicles for staff transport, school transport, tourism, and other similar private services.

Microbuses could replace several sub-optimal paratransit vehicles on the road and reduce waiting times for transit commuters. They are well suited to passenger demand of 140–270 passengers per hour per direction. Since microbuses appear to be suited to short-to medium-range routes of 2–10 km, electric vehicles with smaller battery capacities may be viable. Our model finds that typical small and medium-sized towns could deploy 70–100 microbuses as formal public transport services to serve intra-city and *mofussil trips*. However, million-plus cities and megacities could use microbuses for short-distance and feeder services.

Table 2. Small and medium-sized cities account for 77 per cent of the Indian microbus market

City category	Projected city numbers (2031)	Required Micro-buses per city	Average number of microbuses per 1,000 people	Total estimated micro-buses in the city category	Distribution of microbuses (%) in the total market
Small	2,727	70–100	2.7	2,62,000	41
Medium	1,248	150–200	1.3	2,31,000	36
Large	164	380–500	0.7	70,000	11
Million plus	62	850–970	0.3	40,000	6
Mega	9	4,000– 5,200	0.6	42,000	6
Total	4,210			6,45,000	100

Source: CEEW analysis

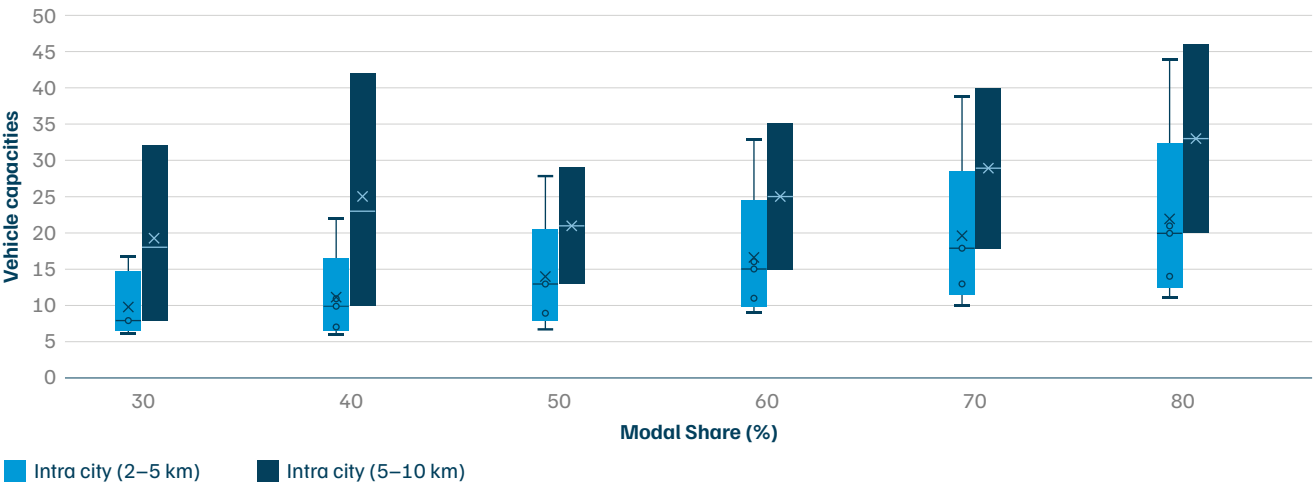
We conduct sensitivity analysis across various modal shift scenarios and find that microbus-like vehicles remain the most optimal option for short-distance (<5 km) to medium-distance (5–10 km) routes across all five city categories.

A similar assessment by CSE estimates a requirement of around 0.67 million standard urban buses (9–12 m) by 2047 across over 400 large and medium-sized cities (population 0.1 - 1 million) (CSE 2026). Its assessment focuses primarily on standard bus deployment, while our analysis considers a wider range of city sizes and vehicle types. In smaller cities, where travel demand and street

conditions may favour smaller vehicles, public transport requirements need to account for vehicle size alongside fleet numbers, headways and route coverage.

Our analysis estimates a requirement of around 0.65 million microbuses by 2031, with 77 per cent expected to serve small and medium towns. This estimate complements the requirement for standard buses on higher-demand corridors and in larger cities, and reflects the potential role of smaller vehicles in extending public transport coverage across smaller urban centres.

Figure 8. Relationship between modal share and vehicle capacity across different trip-distance categories



Source: CEEW analysis

Figure 8 shows that, with up to a 50-55 per cent modal shift, microbuses can effectively serve intra-city trips in the 2–10 km range. At higher modal-shift levels of >60 per cent, microbuses emerge as a more suitable option only for short-distance trips of <5 km, as operating smaller capacity vehicle in higher modal shift scenario will not be financially and operationally efficient. However, this suitability is influenced by the population size of cities and route-wise demand and available transit serviceable network. We further disaggregate these relationships by city population category, as presented in

Table 3. We note the following key insights:

- Microbuses closely match capacity requirements for intra-city (2–10 km) and peri-urban (6–20 km) trips across small, medium, and large cities, particularly up to a 50–60 per cent modal share, when travel demand remains below the capacity threshold of standard buses.
- Even in metropolitan and megacities, microbuses remain relevant for short-distance bus and feeder services that complement bus rapid transit (BRT) and metro systems. This supports a tiered, integrated public transport network.

Table 3. Microbuses can serve all five city categories for intra-city short routes and regional routes for small and medium cities

Demand for optimal vehicles by estimated vehicle capacity (number of seats)					
Modal share (%)	Population (thousand)	Route length (0–5 km)	Route length (5–10 km)	Route length (10–20 km)	Route length (20–40 km)
30	20–50 (S)	4	8	18	15
	50–300 (M)	8	18		
	300–1,000 (L)	6	32		
	1,000–5,000 (XL)	17			
	>5,000 (XL+)	8			
40	20–50 (S)	6	10	24	19
	50–300 (M)	10	23		
	300–1,000 (L)	7	42		
	1,000–5,000 (XL)	22			
	>5,000 (XL+)	11			
50	20–50 (S)	7	13	29	24
	50–300 (M)	13	29		
	300–1,000 (L)	9			
	1,000–5,000 (XL)	28			
	>5,000 (XL+)	13			
60	20–50 (S)	9	15	36	29
	50–300 (M)	15	35		
	300–1,000 (L)	11			
	1,000–5,000 (XL)	33			
	>5,000 (XL+)	16			
70	20–50 (S)	10	18	41	34
	50–300 (M)	18	40		
	300–1,000 (L)	13			
	1,000–5,000 (XL)	39			
	>5,000 (XL+)	18			
80	20–50 (S)	11	20	47	38
	50–300 (M)	20	46		
	300–1,000 (L)	14			
	1,000–5,000 (XL)	44			
	>5,000 (XL+)	21			

■ Scope under microbuses (10-22 seaters)

Source: Authors' compilation

Table 3 shows that passenger vehicle seating capacity requirements increase with both city population and trip type. In smaller cities and lower-demand contexts, several intra-city trips could be effectively served by large IPTs and microbuses. As populations grow, rising demand pushes cities towards higher-capacity modes, with microbuses playing a critical intermediary role between informal IPTs and formal bus systems to meet short- to medium-distance travel needs.

With further urban growth and longer trip lengths, standard buses, BRT, and metro systems become increasingly necessary. The overlap across modes highlights that no single system is universally optimal; rather, the suitability of a mode depends on city population size, trip length, and route demand intensity. This underscores the need for an integrated, tiered public transport strategy in which microbuses complement, rather than replace, higher-capacity systems.

Under the scope of this study, we analyse route lengths of up to 40 km. Annexure 2 presents the sensitivity analysis for route lengths of up to 20 km only.

3.2 How could an optimal electric microbus replace much of the sub-optimal IPT to reduce congestion and emissions?

An optimal electric microbus could replace three-fourths of the approximately 70 lakh ageing and polluting autorickshaws and more than 15 lakh internal combustion engine (ICE) minibuses operating on low-occupancy routes across the country. This could help India abate approximately 3–3.5 crore tonnes of CO₂ by 2031, while also reducing annual tailpipe PM_{2.5} emissions by approximately 2,800 tonnes. This could result in 15–17 crore tonnes of CO₂ mitigation by 2035.

Additionally, as urbanisation accelerates with economic growth, microbuses could contribute to CO₂ abatement and PM emissions reduction by facilitating modal shifts from private four-wheelers and two-wheelers. PM emissions reductions are further augmented because non-exhaust emissions depend on vehicle-kilometre optimisation, achieved by carrying more passengers in fewer vehicles (Maier et al. 2023). Microbus-type vehicles are optimal for feeder services, short intra-city trips, and connectivity in dense urban areas with narrow lanes, as well as for peri-urban connectivity.

Thus, we can conclude that microbuses have the potential to reduce emissions in a three-pronged manner:

1. Enhanced passenger-carrying capacity would reduce total vehicle kilometres.
2. Replacing vehicles nearing the end of their life, which are often highly polluting, with cleaner and more efficient technologies, such as Bharat Stage 6 (BS6)-compliant or electric vehicles, would reduce emissions.
3. Comfortable and attractive services could nudge a modal shift towards shared public transport and away from private vehicles.



Image: iStock

4. Evolving microbus market across the world and India

Microbuses have emerged as an important intermediate public transport mode in both developed and developing countries, responding to gaps in conventional public transport systems. However, their operational characteristics, scale of deployment, and institutional frameworks vary significantly between Global North and Global South contexts. We also review microbus makes and models available in India and worldwide.

Microbuses have been in existence and in use for 75 years. The origins of microbuses can be traced to the Volkswagen Type 2, introduced in 1950, which had a passenger capacity of 16 and was initially used for public transport in small and medium-sized cities. Between 1960 and 2000, several OEMs, including Nissan, Toyota, Fiat, Iveco, and Kia, developed various models of similar vehicles (Remy et al. 2024). Many of these models continue to be produced and used in medium-sized cities, particularly in Japan and Italy.

4.1 Microbus operations in Global North countries

Among developed countries, the largest body of literature comes from Eastern Europe, notably Türkiye and Cyprus, where informal services such as Dolmuş and Marshrutka operate (refer to Table 4). These systems mainly serve commuters travelling from peri-urban areas to city centres, offering affordable and flexible mobility (Biddulph 2023).



'Dolmuş' in Istanbul and Türkiye, running as an integral part of public transport.

Image: timetruck.com

Microbus services in developed countries typically comprise 16- to 21-seater vehicles operating on short urban and peri-urban routes (5–10 km). They account for 5–7 per cent of the modal share in smaller cities and less than 2 per cent in metropolitan areas. Primarily run by private operators, these services also operate under government-run models in countries such as Japan and South Korea. Key challenges include high fares and limited availability. Microbuses primarily serve the elderly, tourists, and individuals seeking faster and more comfortable travel options. They operate on a demand-responsive basis, with fares ranging from 55 – 335 INR (USD 0.6 to USD 3.5), with the minimum fare applying to distances of 0–5 km (Pacheco-Girón 2025). Innovations include GPS tracking, digital payments, and app-based booking. Some services have been formalised through fixed fares and government support, including free tickets for elderly and specially-abled passengers (Kamiya et al. 2010).

4.2 Microbus operations in Global South countries

Microbus systems are most prevalent in developing countries, particularly in Southeast Asia, including Indonesia, the Philippines, and Thailand, as well as in Hong Kong (refer to Table 4). Jeepneys are minibus-type utility vehicles and a popular mode of public transport in the Philippines. Globally, countries such as Indonesia and the Philippines, as well as countries across Latin America and Africa, show a high dependence on microbuses, with around 60–65 per cent of road trips facilitated by them (Dumedah and Eshun 2020).

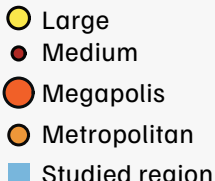
The 16-seater Kombi taxis in South Africa serve approximately 70 per cent of the country's households and facilitate a staggering 15 million commuter trips daily (Leech 2021). *Peseros* or *combis* are the most common form of public transport across Mexico. They carry 60 per cent of passengers in Mexico City. In developing countries, microbuses operate on routes of 18–30 km and dominate urban transport, accounting for 65–70 per cent of road trips in small and medium-sized cities. Fares range from 20-100 INR (USD 0.2 to USD 1) for distances of 0–5 km.



Kombi taxis of South Africa, responsible for 65–70 per cent of road transport.

Image: iStock

Table 4. Case city comparison of microbus usage in the Global South and Global North

Case cities	Microbuses	Characteristics
Africa  Cities Accra, Kampala, Malawi	 Microbuses Dala dala Bus, trotro (minibus taxi)	• 16–20 passengers seating capacity. • USD 0.12/km fare make it affordable. • Trip length, up to 30 km, linking villages and cities . • 65–70% of roads trips made by microbuses (2020). • Launch of eKamva electric minibus by 2025. • Fleet management via flx EV app.
Hong Kong  Cities Kowloon, Hong Kong	 Microbuses Nanny van, Public light bus	• 10–12 (Nanny van), 16–19 (PLB) Passenger seating capacity • USD 0.5 for 0–5 km (Minimum fare) • Trip length, up to 20 km connecting outer periphery and intra city operation • 24 hrs operational services . • Launching pilot of e-PLB with pantograph charging (full charge in 18 mins) and 40-50% subsidized by government
Indonesia Philippines,  Cities Jakarta, Manila	 Microbuses Jeepney	• 12–16 passenger capacity giving service as a semi-Informal vehicle (PUV moderation , 2019) • USD 0.22 for 0–5 km (Minimum fare) and for e-Jeepney USD 0.26 for 0–5 km. (2021) • Vehicle utilisation 127–150 km (2021) • 20% of road trips made by Jeepneys. • Launching public utility vehicle modernization Program and giving 5% down payment (1560 USD subsidy) by government.
Latin America  Cities Lima, Mexico	 Microbuses Prescos, combi taxi	• 9–16 passengers seating capacity. • USD 0.40 for 0–5 Km (Minimum fare) • No predefined routes but operating with in predefined area • 57–60% of roads trips made by microbuses (2019). • Mapaton CDMX - Create an app to share live GPS database with Prescos.
Challenges  Overcrowded  Polluting  Not barrier friendly  No time schedule  Uncomfortable 		

Source: CEEW analysis

4.3 Opportunities for microbuses

Microbuses are mostly operated informally by private operators, with only occasional formal public–private partnerships. Microbuses face challenges such as overcrowding, ageing vehicles, air and noise pollution, a lack of barrier-free design that limits accessibility for elderly and especially abled people, and unreliable schedules. Despite these challenges, they remain crucial for affordable, flexible, and last-mile connectivity, particularly for peri-urban commuters, and operate for 10–24 hours a day. Innovations, primarily driven by private OEMs and research institutions, include pilots for microbus electrification and fleet management applications. Several government initiatives provide subsidies for purchasing and operating these pilot fleets to encourage formalisation and fleet modernisation.

Microbuses remain popular because of their affordability, availability, and ability to navigate narrow, congested roads. Government initiatives such as the Philippines' *Public Utility Vehicle Modernization Program* (PUVMP) provide subsidies to scrap old microbuses and purchase new ones (Agaton et al. 2019). Hong Kong has also demarcated specific routes and fare structures for these services. Technological upgrades and electric mobility pilots are underway globally, supported by various OEMs (Wong et al. 2023). Kathmandu, Nepal, has microbuses with up to 16 seats, accounting for 20 per cent of the public transport fleet (912 of 4,574 vehicles) (ESCAP 2025). The city is now transitioning to EVs under the *Sustainable Electric Transport for Nepal* (SET4NPL). Study mentioned small buses/ microbuses can improve access to suburban rail stations and maintain connectivity on roads narrowed by metro construction, enabling more efficient CTU operations (Badami 2017).

Microbuses in hilly areas offer three distinct advantages: safe operation on narrow roads, viability on routes with medium and dispersed demand, and better power and torque on hilly terrain. Switzerland's PostBus operates a 16-seat microbus variant, which accounts for 13 per cent of its national fleet (PostBus 2025). In Indian hilly cities such as Shimla, Ladakh, and, more recently, Gangtok, microbuses have been considered an optimal solution for navigating narrow roads and sharp curves.

4.4 Microbus market in India

In India, microbus vehicles often overlap with maxi cabs, albeit at a slightly smaller size – typically with a seating capacity of 7–12 and larger vehicles with typically with 22 or more seats, referred to as 'omnibuses', which can accommodate up to 30 passengers (MoRTH 1988). These two categories have separate permit conditions and regulations based on vehicle weight, use case, seating capacity, and specifications.

Maxi cab category- The leading brands registered in the maxi cab category include Tata, Mahindra, Force, and Toyota, among others. These vehicles, typically seating 7–12 passengers, are widely used for commercial passenger transport. Popular models in the market include the Tata Starbus (12-seater bus), Mahindra Cruzio Staff/Stage (12- or 14-seater bus), and SML Isuzu Executive (12- or 13-seater bus), among others (Motorfloor 2025).

Interestingly, annual sales of these vehicles are around 25,000 units, still below the pre-COVID level of 30,000–32,000 units. The market has also seen a substantial shift in the leading brands over the past decade. In 2016, Tata and Mahindra each held around a quarter of the market, whereas in 2024, Tata and Toyota each held around one-third of the market. Other significant OEMs in the Indian microbus landscape include Ashok Leyland, VE Commercial Vehicles, Maruti Suzuki, and Daimler India (MoRTH 2026).

Mini- or omnibus category – Interestingly, over the past 3–4 decades, the share of minibuses has declined drastically, with larger midi and standard buses increasingly replacing them. The minibus market is now comparatively small, with an average of 5,000–6,000 vehicles registered annually. Popular minibus models in India include the Mahindra T16 Tourister Excelo (16- or 21-seater bus), Eicher 10.50C Starline (16-seater bus), SML Isuzu EcoMax LR (19+D bus), and Eicher Starline 2050 D Supermax bus (Motorfloor 2025). These vehicles are also used for tourist and contract carriage services, as well as staff transport, in addition to their popular use as school buses. The price of omni-buses varies substantially based on the brand, features, seating capacity, and dealer location. Force Motors now holds almost half of the annual market sales in 2025.

Larger minibus-like vehicles were popular between 1970 and 2000. Most of these vehicles were manufactured by Mahindra, Tata, and Eicher and had a seating capacity of 13–17 passengers. Since the late 2000s -Indian passenger vehicle market began to evolve towards vans and maxi cabs (7–14 seater vehicles), following the prevalence of models in tempos, three-wheelers, and personal cars categories.

Operators and experts opined that minibuses generate relatively low revenue per seat compared with their costs, which may limit their popularity. Among the omnibus models, the Urbania, a 17+1-seater vehicle, is available in multiple configurations, including an electric variant (Motorfloor 2025).

These smaller-capacity bus kind of vehicles have become increasingly popular for transporting employees to factories and industrial units, as well as schoolchildren. They are also widely used in rural and suburban areas by private operators to provide regional and local transport services informally. Although microbus-like vehicles are used nationwide for various purposes, their role in stage-carriage public transport, remains limited.

4.5 Recent e-microbus and e-minibus market evolution in India

In 2023, Tata launched the electric version of the Magic, with a seating capacity of 10 passengers plus a driver and a range of 140 km per charge at a price lower than the ICE version (91 Trucks 2025). More recently, the Volkswagen ID. Buzz, a seven-seater electric van, was launched in India in 2024. Referred to as a 'microbus', it offers a range of 350 km (Volkswagen 2025).

In 2024, Force Motors showcased an electric e-traveller with a capacity of 14 passengers, plus a driver and five standing passengers. The vehicle is 5.5 m long and has a range of 190 km (Force Motors 2025). At the 2024 Consumer Electronics Show (CES), organised by the Consumer Technology Association (CTA), Kia introduced its Platform Beyond Vehicle (PBV), a modular electric van ecosystem offering five variants with a capacity of up to 14 passengers. These variants can be selected for specific use cases, such as commercial goods delivery and passenger transport. These examples reflect the evolving microbus market in India and underscore key options for adopting microbuses as a mainstream public transport mode in small and medium-sized cities (refer to Figure 9).



Privately operated microbuses carry much of the daily travel in many African cities.

Figure 9. Microbuses have been present in the Indian market since 1950



Source: CEEW analysis

A notable case is Alwar Vahini in Rajasthan, where the city of Alwar successfully formalised the use of Tata Magic vehicles for public transport. This was achieved by offering incentives to purchase new vehicles, scrapping 720 old vehicles, and facilitating processes such as insurance, regional transport office (RTO) registration, route permits, and driver licensing. Implemented under the *Samman aur Seva 2* scheme, the initiative launched a fleet of 58 vehicles and supported infrastructure

upgrades, including 20 modern bus stops, signage, 45 high-mast lights, traffic signals, and 25 CCTV cameras for effective traffic monitoring. Drawing lessons from Alwar's experience and considering the emerging vehicle options in the market, we find that microbuses have strong potential to enhance daily mobility and improve the quality of life for residents of small and medium-sized Indian cities.

Box 7. Microbuses may be lost due to conflicting regulatory controls in India

National regulations for omnibus buses (13- to 20-seater buses). Stage carriage permits are governed by the *Motor Vehicles Act, 1988*, with specific rules laid down by the state transport authority (STA). These buses are allowed to operate only on routes specified in the permit, which may be revised periodically by the STA based on traffic patterns, commuter demand, or other relevant factors. Drivers must possess a commercial driving licence with a minimum of five years' experience and hold both a Public Service Vehicle (PSV) authorisation and a badge issued by the transport department (MoRTH 1988).

Delhi regulations for maxi cabs (6- to 12-seater buses). A maxi cab shall be granted an All-India Tourist Permit, which will become invalid nine years from the date of coverage under the permit. The maxi cab must have six wheels, comply with Bharat Stage IV emission norms, operate on compressed natural gas (CNG), and be type-approved by the Automotive Research Association of India (ARAI) or the Vehicle Research and Development Establishment (VRDE), as well as by the Delhi Transport Department. Its seating capacity should not exceed 12+1, including the driver, and standing passengers are not permitted. Additionally, the vehicle body must be manufactured by an OEM in accordance with the specifications approved by ARAI/VRDE (Department of Delhi Transport 2012).

Source: Authors' compilation

Bus drivers and operators reported stricter restrictions on fuel type, passenger capacity, and operational routes. State and central government regulations, including requirements for additional permits and compliance documentation, have further created an unfavourable business environment, compelling several operators to exit the sector. Many operators are running services at low margins and are losing interest in purchasing new vehicles under the same conditions (Das and Koppa 2018).

Microbuses are not held back by demand in the Indian market - restrictive regulations are likely holding them back.

5. Recommendation: *National Microbus Programme* for aggregating demand

CEEW hosted a series of meetings and roundtable discussions, including sessions at the Urban Mobility India (UMI) Conferences, with subject experts, academics, bureaucrats, OEMs, informal IPT operators in cities, banks and non-banking finance corporations, development banks, and key government agencies, including Convergence Energy Services Limited (CESL) and the Small Industries Development Bank of India (SIDBI), under the guidance of the Ministry of Housing and Urban Affairs (MoHUA).

The 2023 roundtable explored microbuses as a solution for diverse use cases. Participants highlighted pathways and opportunities for establishing a programme to realise the latent demand for microbuses. Finally, the groups shared insights into the key barriers and challenges to developing and deploying microbuses at scale.

In 2024 and 2025 roundtables, discussions focused on the urban transport challenges of small and medium-sized cities. Participants included government officers from 12 states representing small and medium-sized cities, as well as policymakers from the union and state governments and parastatals. The group identified the need to optimise public transport using microbus-like vehicles in small and medium-sized cities, particularly on narrow roads and lower-occupancy routes. Discussions focused on leveraging existing case studies on capacity building, IPT integration, and formalisation to introduce microbus-based urban mobility in these cities.

More recently, in 2026, a MoHUA-led workshop focused on the need for collaboration among think-tanks, OEMs, and other stakeholders to plan microbus pilots to evaluate the suitability of existing vehicles, financial viability, and user acceptance.



Building consensus and mobilising action for a National Microbus Programme in collaboration with MoHUA, held on 28 April 2026 at Sankalp Bhawan, New Delhi.

Image: CEEW

Box 8. Experts' opinion

“Small is beautiful. But small is beautiful for a variety of factors – Small buses play an equally important role in big cities & much bigger roles in smaller cities. . . . Somebody has to invest, you should not find solutions in existing models, it would not be detrimental . . . start with 10–15 cities for a pilot and remember small is beautiful.”

– Prof. Shivanand Swamy, CRDF, CoE Urban Transport, CEPT

“Public transport is neglected; we have to think about a ‘System’. Today we are talking about 4000 towns, that have no planning capability, or analysing the data . . . small towns have to be understood as clusters of big and small cities. . . . Thus we need to create business environment and regulation, determine type of vehicle , and only then OEM will come out with solution.”

– Prof. Geetam Tiwari, Emeritus, TRIP-C, IIT Delhi

Source: Authors' compilation

5.1 Recommendations to build for scaled adoption of microbuses

Our estimates, supported by panel discussions, indicate strong domestic demand for microbuses and the existence of a global market. This presents an opportunity for more Indian OEMs to enter the microbus segment. We recommend the following steps to encourage large-scale domestic uptake and a just transition to microbuses:

- **Conduct pilots and performance evaluations of vehicles and microbus systems**

Mobility data and insights for small and medium-sized towns are limited. Thus, it is necessary to gather mobility data from passengers and operators across a sample of small and medium-sized city clusters. A deeper, ground-level understanding can inform microbus design and safety specifications. More research is critical to cover the travel data and IPT market data gaps for the small and medium cities in India. Clear specifications and pricing insights would prompt OEMs to accelerate their R&D efforts to launch suitable microbus models. Commercially available variants are necessary for the initial city pilots to establish microbus-based transit systems.

- **A few original equipment manufacturers (OEMs) have developed electric microbus prototypes, presenting an opportunity for governments to aggregate demand and procure 8,000–10,000 microbuses for pilot deployment in 30–50 small cities.**

Through this approach, they can inform vehicle design, standardisation, and specifications and potentially open up the private market for these vehicles. The binding constraint on scale is not the vehicle but a bankable business model that a city and an operator can both signs. We recommend the state or national programme fund a small "business-model sandbox", running GCC, net-cost and hybrid-PPP variants side by side in the next pilots, to establish which structure is genuinely bankable. It is prudent to develop and pre-test these models now, before large-scale procurements. This will standardise a contracting template, pre-test two or three risk-allocation variants (gross-cost, net-cost and hybrid PPP) in the next round of pilots, and settle in advance the funding source for the structural fare–cost gap.

Box 9. Priority pilot areas identified through stakeholder consultations

Five priority areas have been defined below

Priority 1: Who carries the capital. Test who owns the vehicles, depots, charging and ITS, and whether procurement is aggregated for better terms

- CTU/ULB or a public SPV owns and leases the fleet
- Operator- or OEM/leasing-financed fleet
- State-level bulk procurement vs city-by-city

Priority 2: Fare and non-fare revenue. Test how far non-fare income narrows the subsidy while holding the commute within the 8 per cent benchmark

- Distance-based vs flat/zonal fare, with a limited premium tier
- Advertising and branding: in-house vs concessionaire
- Station commerce and other transit-oriented revenue

Priority 3: Contract and viability-gap structure (the core test). Test which risk allocation is bankable and how the fare–cost gap is funded

- Gross-cost vs net-cost vs hybrid/PPP contract
- Single-corridor vs bundled viable-plus-thin corridor packages
- Gap funded via state budget, an NCAP window or a PM-eBus tier — with or without a payment-security escrow

Priority 4: Who operates, and how incumbents come in. Test the operating entity and the route to formalising auto/e-rickshaw operators

- Single tendered operator vs CTU in-house operation
- Route cooperative or owner-driver model drawn from incumbent IPT operators

Priority 5: Sweating the asset. Test off-peak and ancillary uses that lift margins without hurting the scheduled service

- Off-peak contract hire (schools, offices, staff) or last-mile logistics
- On-vehicle advertising rights to operator vs authority

Source: CEEW analysis

- **Develop a *National Microbus Programme* for public transit in small and medium-sized cities**

Faced with funding constraints and limited access to financing, these cities need a *National Microbus Programme* to overcome barriers in the nascent market, including limited technical planning and implementation capacity at the local level and high capital costs for setting up depots, terminals, bus stops, charging infrastructure, and rolling stock.

Instead of relying on existing templates for a national programme in cities, the government should consider new institutional and business models to integrate existing informal transport service providers. The programme should include initial viability gap funding for public transit systems to establish processes and reduce risks during the payback period.

- **Rationalise the rules governing passenger vehicles in the 10- to 22-seater category**

The current permit regulations divide microbus-like vehicles into two distinct categories – ‘maxi cabs’ and ‘mini-/omnibuses’ – limiting their use for public transport. Maxi cab permits restrict seating capacity to 12 seats and limit their use as tourist vehicles. Similarly, high-cost bus permits are applicable only to vehicles with more than 13 seats. It is therefore critical to adequately define microbus-like vehicles within the *Central Motor Vehicles Rules* so that the permit framework allows them to operate as stage-carriage, route-based public transport vehicles.

A comprehensive review of microbus market, make, models and manufacturers can throw light on market gaps. It will additionally enrich the TCOs estimation and potential financial models development to unlock private operators’ engagement in microbus deployment.

- **Explore a robust institutional set-up at city level to plan and govern a formal transit system using microbuses, in small and medium cities**

Urban Local Bodies (ULBs) at smaller cities have limited technical capacities. They must leverage skills and technical know-how from larger cities nearby - for designing and operating formal bus systems. State urban development departments must nudge a city-cluster approach – combining the large city and its hinterland of small dependent cities-for regional and intra-city bus services.

The microbus services can be operated in semi-formal governance, where – route, fare based permits are designed by ULB and schedules are operated by private shared vehicle operators. Alternatively, a fully formal service with fixed routes, schedules and fares can be planned and operated by ULBs. More research and pilots are needed to adjudge suitable governance models for the variety of small-medium cities in India.

- **Establish a robust set-up to channel investments and financing for the scaled adoption of microbuses**

Institutions such as state infrastructure development corporations and trusts should leverage instruments such as green financing to develop city-cluster projects. These measures, coupled with statewide demand aggregation, clean energy mandates, and restrictive policies on private-vehicle use, can enhance the feasibility of such projects.

Additionally, to institutionalise informal private-sector operators, states may offer credit guarantees, interest subsidies, and scrappage-linked incentives to replace old and polluting shared IPT vehicles with microbuses.

More research is warranted to explore suitable financial products that can be offered by Banks and NBFCs for private operators. Further national PSUs like CESL, and SIDBI can support GoI in rolling out the national microbus program and ease adoption of first few thousand electric microbus vehicles.

Thus, we recommend that the Government of India conceptualise a *National Microbus Programme* to aggregate demand across cities and catalyse the market for approximately 6.5 lakh microbuses, particularly in more than 4,000 small and medium-sized towns. For this, ecosystem actors, such as policymakers, operators, and think tanks, should focus on pilots to assess commuters’ service expectations and willingness to pay. OEMs must conduct market and business assessments to develop robust vehicle specifications. A study on these aspects should ensure that the economics of mobility supply and the social parameters of accessibility, safety, and passenger comfort are addressed simultaneously.

National Microbus Programme could pool demand and create a market for about 6.5 lakh such vehicles, across India’s cities, by 2031.

Acronyms

ARAI	Automotive Research Association of India	PBV	Platform Beyond Vehicle
ASRTU	Association of State Road Transport Undertakings	PIB	Press Information Bureau
BRT	bus rapid transit	PLBs	public light buses
BS	Bharat Stage	PM	particulate matter
CCTV	closed-circuit television	pphpd	passengers per hour per direction
CER	city economic region	PSV	public service vehicle
CES	Consumer Electronics Show	PUVMP	<i>Public Utility Vehicle Modernization Program</i>
CESL	Convergence Energy Services Limited	ROW	right of way
CMVR	<i>Central Motor Vehicles Rules</i>	RTO	regional transport office
CNG	compressed natural gas	SET4NPL	Sustainable Electric Transport for Nepal
CSOs	civil society organisations	SIDBI	Small Industries Development Bank of India
CTA	Consumer Technology Association	STA	state transport authority
DDA	Delhi Development Authority	UMI	Urban Mobility India
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific	UN DESA	United Nations Department of Economic and Social Affairs
EV	electric vehicle	USD	US dollar
FGD	focus group discussion	V-Co tool	vehicle-capacity optimisation tool
GPS	global positioning system	VRDE	Vehicle Research and Development Establishment
GSRTC	Gujarat State Road Transport Corporation		
HMDA	Hyderabad Metropolitan Development Authority		
ICE	internal combustion engine		
IITD	Indian Institute of Technology Delhi		
INR	Indian rupee		
IPT	intermediate public transport		
MoF	Ministry of Finance		
MoHUA	Ministry of Housing and Urban Affairs		
MoRTH	Ministry of Road Transport and Highways		
MoUD	Ministry of Urban Development		
NMT	non-motorised transport		
OEM	original equipment manufacturer		

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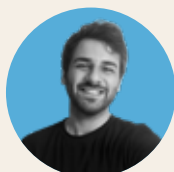
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