Paving the future of aviation in Viksit Bharat @ 2047

రామ్మోహన్ నాయుడు కింజరాపు
राममोहन नायडू किंजरापु
RAMMOHAN NAIDU KINJARAPU

सत्यमेव जयते

नागर विमानन मंत्री
भारत सरकार
Minister of Civil Aviation
Government of India

24 January 2026

MESSAGE

India's civil aviation journey reflects the confidence of a nation advancing with purpose. From expanding domestic air networks to strengthening global linkages, aviation has emerged as a key pillar of India's economic growth, social inclusion, and international engagement.

The Government of India under the visionary leadership of Hon'ble Prime Minister Sh. Narendra Modi Ji remains firmly committed to building an aviation ecosystem that is resilient, efficient and globally competitive. This commitment is visible in our continued investments in modern airport infrastructure, advanced air navigation systems, manufacturing and MRO capabilities and forward-looking policies that encourage innovation, sustainability, and ease of travel, while keeping the citizen at the center.

Wings India 2026 represents an important milestone in this journey. It brings together policymakers, global industry leaders, innovators and experts on a common platform to deliberate on emerging challenges and opportunities in civil aviation. The event enables meaningful dialogue, encourages collaboration and helps shape collective pathways for the future of global aviation.

I am confident that Wings India 2026 will further advance the objectives of the Government of India by serving as a platform for constructive engagement among global dignitaries, industry leaders and all stakeholders of the aviation sector.

I look forward to welcoming all participants to Wings India 2026 and to seeing the event continue to strengthen global cooperation, encourage innovation and foster enduring national and international partnerships.

(Rammohan Naidu Kinjarapu)

Ministry of Civil Aviation : Room No. 291, B-Block, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi-110003
Tel. : 91-11-24610350, 24632991, Fax : 91-11-24610354

मुरलीधर मोहोळ
MURLIDHAR MOHOL

सत्यमेव जयते

राज्य मंत्री
नागर विमानन एवं सहकारिता
भारत सरकार
Minister of State for
Civil Aviation and Cooperation
Government of India

2025
International Year of Cooperatives
Cooperatives Build a Better World

UDAN
Ude Desh ka Aam Naagrik

MESSAGE

The civil aviation sector has emerged as a critical enabler of India's economic growth, regional integration, and global engagement. As the country continues on its path of sustained development, aviation is playing an increasingly important role in connecting people, markets, and ideas, while supporting trade, tourism, and employment. This progress is being driven by a forward-looking policy framework, steady expansion of infrastructure, and the collective efforts of government, industry, and institutions across the aviation ecosystem.

Wings India 2026, a joint initiative of the Ministry of Civil Aviation, Government of India, the Airports Authority of India, and the Federation of Indian Chambers of Commerce and Industry (FICCI), provides a unique and timely platform for stakeholders from across the world to come together and engage on the future of aviation and aerospace. The event reflects India's commitment to fostering dialogue, collaboration, and partnership across the entire aviation value chain.

The theme of Wings India 2026, **"Indian Aviation: Paving the Future – From Design to Deployment, Manufacturing to Maintenance, Inclusivity to Innovation and Safety to Sustainability,"** aptly captures the sector's evolving priorities and aspirations. It highlights India's journey toward building a comprehensive, resilient, and future-ready aviation ecosystem- one that spans design and manufacturing capabilities, strengthens maintenance and operational excellence, embraces emerging technologies, enhances passenger experience, and places safety and sustainability at its core.

As the aviation industry navigates a period of transformation globally, platforms such as Wings India play a vital role in enabling informed discussions, sharing best practices, and identifying pathways for collective progress. I am confident that Wings India 2026 will contribute meaningfully to shaping ideas, forging partnerships, and advancing initiatives that support inclusive growth and long-term sectoral strength.

I extend my best wishes to Wings India 2026 and commend all stakeholders for their efforts in advancing India's civil aviation journey and reinforcing its role in the global aviation landscape.

(Murlidhar Mohol)

Ministry of Civil Aviation, Room No.-360, B-Block, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi-110003
Office Tel. : +91-11-24627231, 24626001; E-mail : mos.moca@gov.in, Web : www.civilaviation.gov.in
Ministry of Cooperation : 8th Floor, Atal Akshay, Urja Bhawan, Lodhi Road, New Delhi-110003

समीर कुमार सिन्हा, भा.प्र.से.
Samir Kumar Sinha, IAS
सचिव
Secretary

सत्यमेव जयते

भारत सरकार
नागर विमानन मंत्रालय
Government of India
Ministry of Civil Aviation

Message

India's civil aviation sector stands today as a powerful engine of national growth, connectivity, and global integration. With sustained expansion driven by progressive policy reforms, world-class infrastructure development, technological advancement, and steadily rising passenger and cargo demand, India has firmly positioned itself among the fastest-growing aviation markets in the world. The sector continues to play a pivotal role in employment generation, regional development, tourism promotion, trade facilitation, and overall economic progress.

The Government of India is committed to building a resilient and future-ready aviation ecosystem, driven by regional connectivity, infrastructure expansion, innovation, digital transformation, and sustainable practices, positioning India as a globally competitive and environmentally responsible aviation hub.

Wings India 2026 emerges as a landmark platform that brings together policymakers, industry leaders, innovators, investors, and international stakeholders to exchange ideas, explore partnerships, and shape the future of the aviation value chain. The event symbolizes India's growing influence in the global aviation landscape and showcases the strength of collaboration between the Government and industry.

I commend all stakeholders associated with Wings India 2026 and am confident that the deliberations and partnerships emerging from this platform will accelerate India's journey towards a dynamic, innovative, and sustainable aviation future.

I extend my best wishes for the grand success of Wings India 2026 and for the continued growth and excellence of India's civil aviation sector.

(Samir Kumar Sinha)

B-BLOCK, RAJIV GANDHI BHAWAN, SAFDARJUNG AIRPORT, NEW DELHI-110003
TEL. : 011- 24610368, FAX : 91-11-24644223, E-mail : secy.moca@nic.in

Federation of
Indian Chambers
of Commerce and Industry

Federation House
Tansen Marg
New Delhi 110001
T +91 11 23738760 (11 Lines)
F +91 11 23320714 / 23721504
E ficci@ficci.com
www.ficci.com

Juergen Westermeier
Chairman, FICCI - Civil Aviation Committee and
President & MD, Airbus India & South Asia

MESSAGE

India's aviation sector has witnessed unprecedented growth over the past decade, emerging as one of the fastest-growing markets in the world. With a rapidly expanding middle class, increasing urban connectivity, and a surge in domestic and international air travel, India is not only transforming mobility within its borders but also strengthening its position on the global aviation map. This remarkable growth is supported by robust infrastructure development, government initiatives like UDAN, and a dynamic ecosystem of manufacturers, service providers, and innovators driving technological advancement and operational excellence.

It gives me great pleasure to share my greetings on the occasion of *Wings India 2026*, a platform that truly reflects the ambition, energy, and potential of India's rapidly evolving aviation and aerospace ecosystem. **This year's theme— "Indian Aviation: Paving the Future – From Design to Deployment, Manufacturing to Maintenance, Inclusivity to Innovation, and Safety to Sustainability"**—beautifully captures the holistic vision that is driving India's aviation sector forward.

India continues to be one of the world's most dynamic aviation markets, driven by strong economic growth, increasing connectivity, and a clear vision for the future. Events such as Wings India play a vital role in bringing together industry leaders, policymakers, innovators, and partners to exchange ideas, strengthen collaboration, and shape the next phase of sustainable aviation growth.

Wings India 2026 comes at a pivotal time, as the sector embraces new technologies, sustainable aviation fuels, and next-generation aircraft to meet growing demand responsibly. I am confident that the discussions and collaborations fostered here will contribute meaningfully to shaping a greener and more connected future for global aviation.

At FICCI, we value our enduring partnership with the Government of India, built on shared objectives and mutual trust. Together, we are advancing innovation, boosting manufacturing capabilities, nurturing talent, and strengthening the skills that are vital for the future. Our shared commitment to safety, sustainability, and technological advancement aligns with the priorities showcased at Wings India 2026. We see immense opportunity in catalysing sustainable aviation fuels, embracing electrification and hybrid propulsion, and integrating digital solutions that improve performance and environmental outcomes.

I congratulate the organisers for creating a forum that embodies this comprehensive vision. I am confident that the discussions, collaborations, and innovations fostered at Wings India 2026 will play a pivotal role in advancing a safer, more sustainable, and increasingly connected future for aviation in India and globally.

I wish Wings India 2026 every success and look forward to the valuable exchanges it will inspire.

(Juergen Westermeier)

Industry's Voice for Policy Change

Manoj Mehta
Assistant Secretary General

Federation of Indian Chambers of Commerce and Industry

Federation House
Tansen Marg
New Delhi 110001
T +91 11 23738760 (11 Lines)
F +91 11 23320714 / 23721504
E ficci@ficci.com
www.ficci.com

Message

India's civil aviation sector is at a defining moment in its growth journey. Over the past decade, the industry has emerged as one of the fastest-growing aviation markets globally, driven by strong economic fundamentals, rising passenger demand, enhanced regional connectivity, and progressive policy interventions. Initiatives such as UDAN, combined with sustained infrastructure development and private sector participation, have significantly strengthened India's aviation ecosystem and global standing.

It is my pleasure to extend warm greetings on the occasion of **Wings India 2026**, a flagship platform that reflects the scale, ambition, and momentum of India's aviation and aerospace industry. The theme of this year's event—*"Indian Aviation: Paving the Future – From Design to Deployment, Manufacturing to Maintenance, Inclusivity to Innovation, and Safety to Sustainability"*—aptly captures the comprehensive and forward-looking approach shaping the sector's future.

Wings India has consistently served as a vital forum for bringing together policymakers, industry leaders, global OEMs, operators, service providers, and innovators. Such collaboration is essential as the industry navigates rapid technological change, evolving sustainability imperatives, and the need for resilient and future-ready aviation infrastructure.

The 2026 edition assumes particular significance as the sector accelerates the adoption of next-generation aircraft, sustainable aviation fuels, digital technologies, and advanced maintenance and manufacturing capabilities. These developments will be critical in meeting growing demand responsibly while advancing safety, efficiency, and environmental stewardship.

As India's apex industry body, **FICCI remains committed to working closely with government, industry, and global partners** to support policy advocacy, investment facilitation, skill development, and innovation across the aviation value chain. Inclusivity and human capital development remain central to this vision, ensuring that the benefits of aviation growth extend across regions and communities while nurturing the next generation of aviation professionals.

I wish **Wings India 2026** every success and look forward to the meaningful exchanges and partnerships it will inspire.

(Manoj Mehta)

Industry's Voice for Policy Change

Foreword by KPMG in India

India's aviation story is central to national growth in Viksit Bharat 2047. It connects people to opportunity, strengthens trade and tourism, and supports high value employment across airports, airlines, manufacturers and service providers. Over the past decade, policy measures such as NCAP 2016 and UDAN have laid firm foundations. Operational airports have expanded, service quality has improved, and Indian carriers have placed significant fleet orders that signal confidence in long term demand.

This report looks to 2047 and sets out a coherent programme to turn groundwork into global leadership. The ambition is clear: a super connected, technology enabled and sustainable aviation system that competes internationally while deepening domestic capability. The plan proposes industry depth in manufacturing, MRO, cargo, skilling and leasing to make India Atmanirbhar in aviation and where capacities can scale in line with demand.

Delivery will rest on disciplined execution. Capacity creation must be synchronised across network rather than siloed development. Airlines need a cost environment that supports growth and sustainability. Technology with AI will be the backbone with data sharing standards that enable real time, paperless coordination and decision making across stakeholders. Sustainability must progress from intent to delivery through a credible SAF roadmap and production. Manufacturing and skilling will advance on twin tracks: near term production and services to meet immediate needs, alongside long-term capability building that anchors self reliance.

Collaboration is the constant. Policy makers, regulators, and industry will need to operate as one system, with transparency and shared performance goals. With this collective focus, India can deliver by 2047 an aviation ecosystem that is super connected, resilient and globally competitive, connecting the world through India and creating enduring economic value for the country.

Jodhbir Sachdeva
Associate Partner - Aviation

Table of contents

01 Executive summary

Indian aviation is in a decisive phase of growth, marked by rising demand, sustained capacity creation, and accelerated ecosystem development. Over the past decade, policy, regulatory, and institutional interventions such as the National Civil Aviation Policy 2016, the UDAN scheme, deregulation, and sustained improvements in ease of doing business have reshaped the operating environment and enabled unprecedented expansion.

India is now the world's third-largest domestic aviation market[1] and is on track to become the third-largest globally, supported by rapid fleet induction and record aircraft orders. The next stage requires a fundamental evolution in aviation from its traditional role as a facilitator of mobility to become a strategic engine of economic growth, employment, and global competitiveness. The overarching objective is to transform India from a large aviation market into a globally competitive aviation ecosystem, with integrated capabilities across manufacturing, maintenance, operations, and innovation.

Against this context, this report sets out nine strategic themes that together would pave the future of Indian aviation in Viksit Bharat @ 2047. Collectively, they outline an agenda for building an aviation ecosystem that is larger in scale, deeper in domestic capability, globally competitive, and structurally ready for the future.

1. Super-connected India

Enhanced connectivity will underpin this growth and transformation. India's economic growth will drive air travel demand to ~1.3 billion passenger journeys[2] annually by 2047. Meeting this demand will require a fundamentally different connectivity architecture beyond incremental expansion. A super-connected India would operate as an integrated aviation grid with ~ 400 airports[3], ranging from global hubs and national gateways to low-cost regional airports and supported by a fleet ~ 3,000 aircraft[4] by 2047.

Dense regional connectivity would link smaller cities directly into this network, while major hubs would consolidate traffic and enable direct long-haul and transfer connectivity, positioning India as a critical node in global aviation flows. Aviation hubs at select airports anchored by synchronised slot banks, efficient minimum connect-time, inter-terminal connectivity, through-baggage and streamlined transfer processing will expand international connectivity. Passenger facilitation will need to be further strengthened through visa-on-arrival and e-transit expansion, pre-clearance on priority corridors, and a unified 'Experience India' brand positioning the country as a hospitable transit gateway including visas for city tours integrated directly into airline booking journeys. Cost competitiveness and lowered operational costs will be central to airline viability, supported by structural measures such as bringing ATF under GST, lower MRO and leasing costs and access to cheaper capital.

Integrated with road, rail, metro, and logistics systems, this network would reduce transit times, improve reliability, and ensure that aviation functions not only as a mode of transport, but as a core enabler of economic integration, trade, and employment across the country.

2. AI powered Indian Aviation Tech Stack

AI is already reshaping aviation, from enterprise functions to passenger services. Agentic AI use cases, including customer service automation, predictive maintenance, revenue and resource management, and flow management, are moving from pilots towards scaled adoption. As India advances towards a 1.3-billion passenger market[5], physical capacity expansion alone will be insufficient; the next leap in performance must be digital and AI-led. This technology-driven shift presents India with the opportunity to develop its own aviation tech stack, incorporating emerging technologies while progressively replacing legacy systems. A standardised Indian aviation tech stack, built as a secure and interoperable platform, would enable real-time data sharing across airports, airlines, regulators, ground services, and logistics. By dissolving operational silos, AI as the decision-making layer would strengthen safety, improve efficiency, and deliver seamless passenger experiences.

3. Manufacturing

Manufacturing will be the decisive pillar in positioning Indian aviation as a strategic driver of Viksit Bharat @ 2047, addressing the long-standing asymmetry wherein India represents one of the world's largest aviation markets yet remains a limited participant in aerospace production. As the country inducts thousands of aircraft to build a Super-Connected India, the strategic imperative is to capture a far greater share of the economic, technological and employment value within the domestic ecosystem by expanding India's role across design, advanced engineering, certification, production and lifecycle support. A robust manufacturing base is critical to converting scale into strategic value. India must deepen participation across design, advanced engineering, certification, production, and lifecycle support, ensuring that by 2047 it not only operates aircraft at scale but builds and sustains them. Incentives and support to strengthen and modernise MSMEs in adoption of industry 4.0 technologies, such as automation, IoT, and AI, will enhance quality, traceability, and cost competitiveness. Integration with global aerospace value chains through licensed manufacturing and structured technology transfer, combined with indigenous aircraft programmes, will create Tier-1 and Tier-2 supplier depth, foster innovation, and generate high-value employment.

4. Maintenance, Repair and Overhaul

India's MRO sector represents a substantial value-creation opportunity. While line and base maintenance capabilities are established, engine and component MRO remain nascent. Expansion into these higher-value segments, alongside redelivery and lease-transition maintenance, will reduce offshore dependence, enhance fleet resilience, and retain economic value domestically. Digitalisation and AI will be central to this evolution. Predictive maintenance, health monitoring, and condition-based interventions will optimise inventory, reduce aircraft on ground events, and improve hangar throughput. MRO growth will also enable skilling in repair engineering, materials, and certification, while providing design and manufacturing feedback loops, positioning India as a regional MRO hub by 2047.

5. Leasing

The development of a robust leasing and financing ecosystem at Gujarat International Finance Tec-City International Financial Services Centre (GIFT IFSC) constitutes a strategic national endeavour to establish India as a competitive global hub for aviation finance. By offering a facilitative regulatory regime and an attractive tax environment including exemptions on income, capital gains and other fiscal incentives, GIFT IFSC makes aircraft leasing and financing competitive in India. A series of landmark transactions has already demonstrated growing market confidence; however, the segment remains in an early yet rapidly advancing stage. The passage of the Protection of Interests in Aircraft Objects Bill, 2025 marks a significant structural milestone, materially enhancing creditor assurance, rectifying legal asymmetries and lowering risk premiums, thereby improving lease terms and reducing capital costs for Indian airlines. While stakeholders recognise the substantial progress achieved in terms of regulation and operational infrastructure, they emphasise the continued need to strengthen these frameworks and broaden access to deeper and more diversified funding sources.

6. Air Cargo

Air cargo is poised to serve as a critical catalyst for Viksit Bharat @ 2047, underpinning India's aspirations in manufacturing expansion, export growth and deeper integration into global value chains. India currently handles approximately 3.7 million metric tonnes[6] of air cargo annually, of which nearly 80 per cent[7] is routed through the five largest airports. The concentration of volumes underscores both strong gateway airport capacity and significant untapped potential, particularly when compared with leading global hubs. The sector's challenges are rooted primarily in process inefficiencies - extended dwell times, limited accessibility, fragmented documentation and uneven service standards. Tackling these frictions is fundamental to reducing logistics costs and positioning air cargo as a reliable enabler of industrial growth. Recent regulatory reforms, including the removal of transshipment re-screening at pilot airports, mark a substantive step towards enhancing competitiveness by lowering delays and operational barriers. The next phase of transformation will focus on integrated cargo ecosystems, freighter-friendly measures and extensive use of technology with end-to-end digitisation, single-window clearances, automation and AI-enabled decision making.

7. Skilling

Aviation skilling will be the decisive factor in determining whether India's aspirations under Viksit Bharat @ 2047 translate into sustained global leadership or are constrained by structural limitations. As India advances towards a fleet of nearly 3,000 aircraft[8], an airport network exceeding 400 locations[9], and materially higher operational complexity, availability of workforce with the right skill set would be a critical success factor. Addressing this demand calls for a decisive shift from fragmented, ad hoc training approach to an integrated National Aviation Skilling Mission anchored in forward demand planning, role-wise capacity targets, and outcome accountability. At the same time, curricula and teaching methodologies must evolve in line with the sector's digital transformation. With the right institutional architecture, India has the potential not only to meet domestic demand but to emerge as a global supplier of skilled aviation personnel and a leading international hub for aviation training.

8. Sustainable Aviation Fuel (SAF)

Sustainable Aviation Fuel (SAF) is emerging as the central pathway to global aviation decarbonisation, with international mandates accelerating market growth from roughly 600 million litres in 2023 to nearly 3 billion litres by 2026[10]. For India, this shift is both an imperative and an opportunity. As one of the fastest-growing aviation markets, India faces rising long-term fuel demand yet possesses significant strengths of diverse feedstocks, substantial refining capacity, bioenergy experience and strong policy momentum, to build a competitive SAF industry. A phased technology pathway will scale HEFA in the near term, ATJ and FT in the medium term, with long-term Power-to-Liquid linked to green hydrogen corridors. A robust SAF production capability would reduce import dependence, support rural incomes and create green industrial value chains. Realising this potential requires a coherent policy framework that generates bankable demand and mobilises investment, alongside the enabling systems necessary for scalable production, including efficient feedstock aggregation, innovation capabilities and robust certification and traceability aligned with global standards.

9. Advanced Air Mobility (AAM)

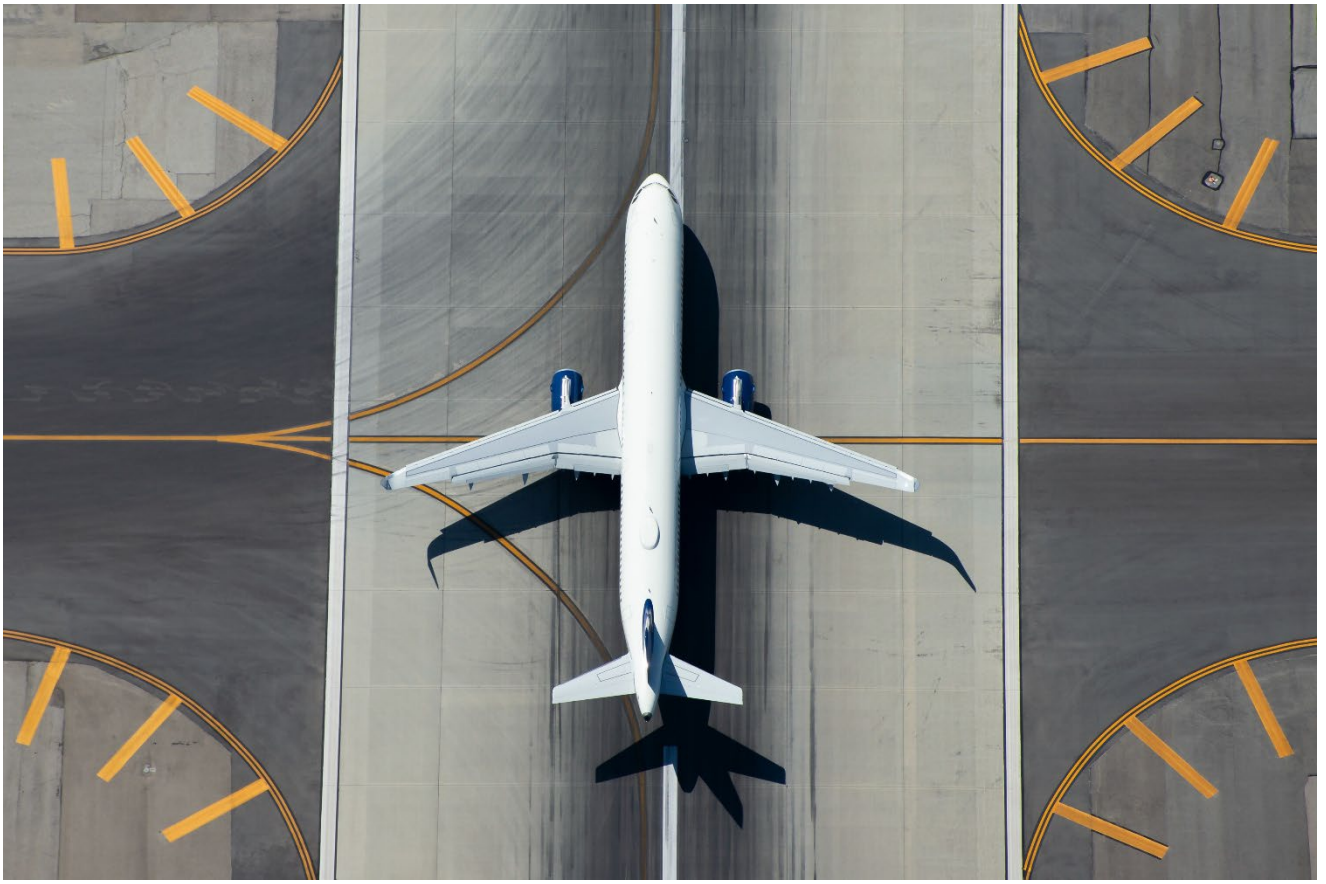
Rapid urbanisation has placed India's major metropolitan centres at the limits of surface-transport expansion, creating a structural mobility impasse that conventional infrastructure alone cannot resolve. AAM offers a viable relief mechanism by shifting a portion of high-value, short-haul travel into controlled low-altitude airspace, thereby reducing journey times between dense economic nodes, improving reliability and expanding effective urban and regional capacity where roads and rail are saturated. AAM will complement, rather than replace, existing surface and aviation networks, particularly for city - airport links, congested corridors, emergency response and time-critical logistics. The strategic priority now is the transition from pilot projects to commercial deployment of eVTOL operations within this decade, beginning with high-friction, high-value corridors such as metro - airport routes where time savings are most pronounced. Long-term scalability will depend chiefly on airspace and systems integration, with a unified digital architecture linking unmanned traffic management and conventional air-traffic management. AAM also presents India with an opportunity to emerge as an early-cycle manufacturer across electric propulsion, avionics, composites, batteries and software capabilities that align closely with the broader aerospace sector. Anchoring AAM production domestically could therefore catalyse deeper aerospace manufacturing, accelerate technology absorption and allow India to establish leadership rather than late-stage adoption.

Safety

Aviation safety will remain the non negotiable cornerstone of India's aviation expansion. Safety must evolve from a compliance driven activity into a continuously managed system centred on risk anticipation, operational resilience and public trust. Safety today extends beyond physical protection to encompass operational integrity, digital reliability and human factors. The next phase of safety oversight will be increasingly intelligence led and data centric, with traditional rule based audits supplemented by risk based supervision enabled through advanced analytics and artificial intelligence. Continuous monitoring of flight operations data, maintenance patterns, airspace congestion, meteorological disruptions and human factor indicators will enable early detection of emerging risks before they escalate into incidents. Digital twins, predictive maintenance platforms and integrated reporting systems will enhance situational awareness across the ecosystem. In a hyper connected, data intensive aviation network, cybersecurity will form a core pillar of safety, as digital integration across airports, aircraft, air traffic systems, passenger processing platforms, cargo systems and maintenance operations introduces direct operational and safety vulnerabilities. Protecting flight critical systems, navigation infrastructure, operational data and passenger information will require sector wide cyber standards, real time threat intelligence sharing and coordinated response mechanisms. Incorporating cyber resilience explicitly into safety management systems, certification requirements and regulatory oversight will be essential.

Paving the future

Taken together, these themes articulate a strategic blueprint for shaping India's aviation trajectory over the next two decades. Delivering on this vision will require coordinated action across government, industry, and regulators, underpinned by sustained investment, institutional readiness, and an unrelenting commitment to safety and innovation. The choices made over the coming years will determine whether India remains a large aviation market or emerges as a global aviation powerhouse. With purposeful execution, India has the opportunity to transform aviation into a catalytic driver of national competitiveness and to position itself at the forefront of global aviation in Viksit Bharat @ 2047.



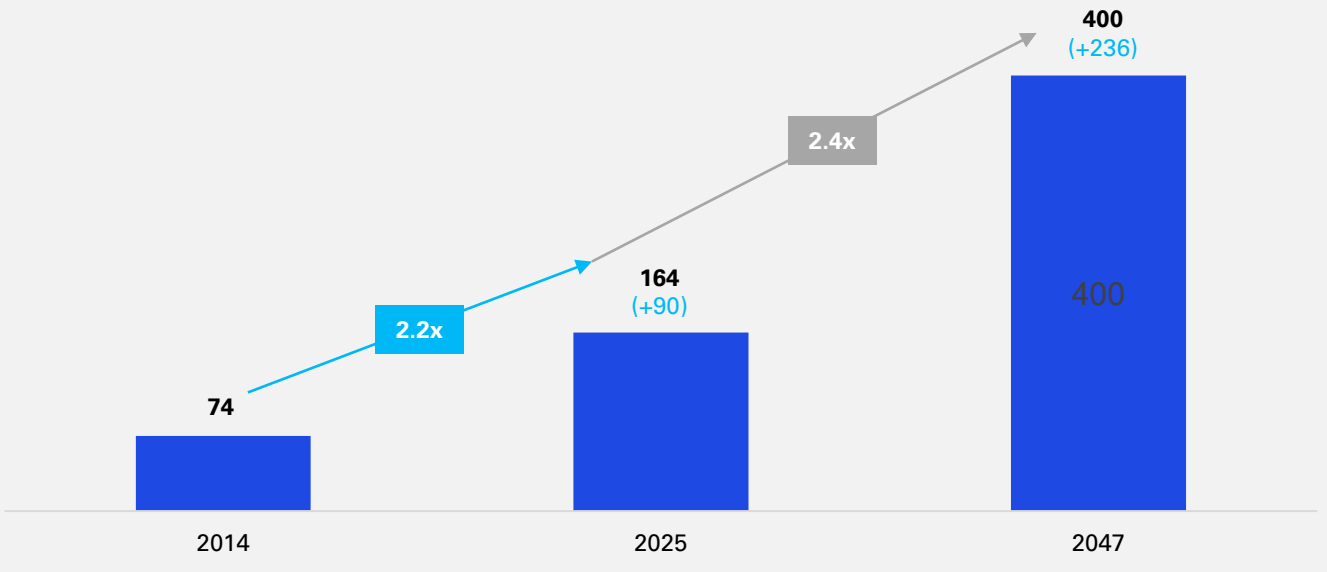
02 Super-connected India

Context

Enhanced connectivity is a cornerstone of Viksit Bharat @ 2047, and the measure by which India will convert aviation scale into national advantage. A Super-connected India is the transition from a fragmented route map to a unified, highly integrated aviation network, anchored in a dual-track strategy of deep regional integration and globally competitive hub development. By 2047, this architecture is envisaged to support ~ 1.3 billion passenger journeys annually[11], enabled by a fleet of ~ 3,000 aircraft[12] and an airport network expanding to ~ 400 airports[13], positioning India as a preferred transit gateway. This vision has advanced over the last decade through a supportive policy and regulatory foundation, including the National Civil Aviation Policy and UDAN.

Super-connectivity is a function of airport capacity, airline networks and the quality of integration across the wider mobility and logistics system. The airport footprint has more than doubled in the past decade to 164[14] at present, spanning major metro airports and cost-efficient regional facilities. The airport development model has matured attracting substantial private capital while AAI has played a key role by building infrastructure across the country and enabling regional connectivity.

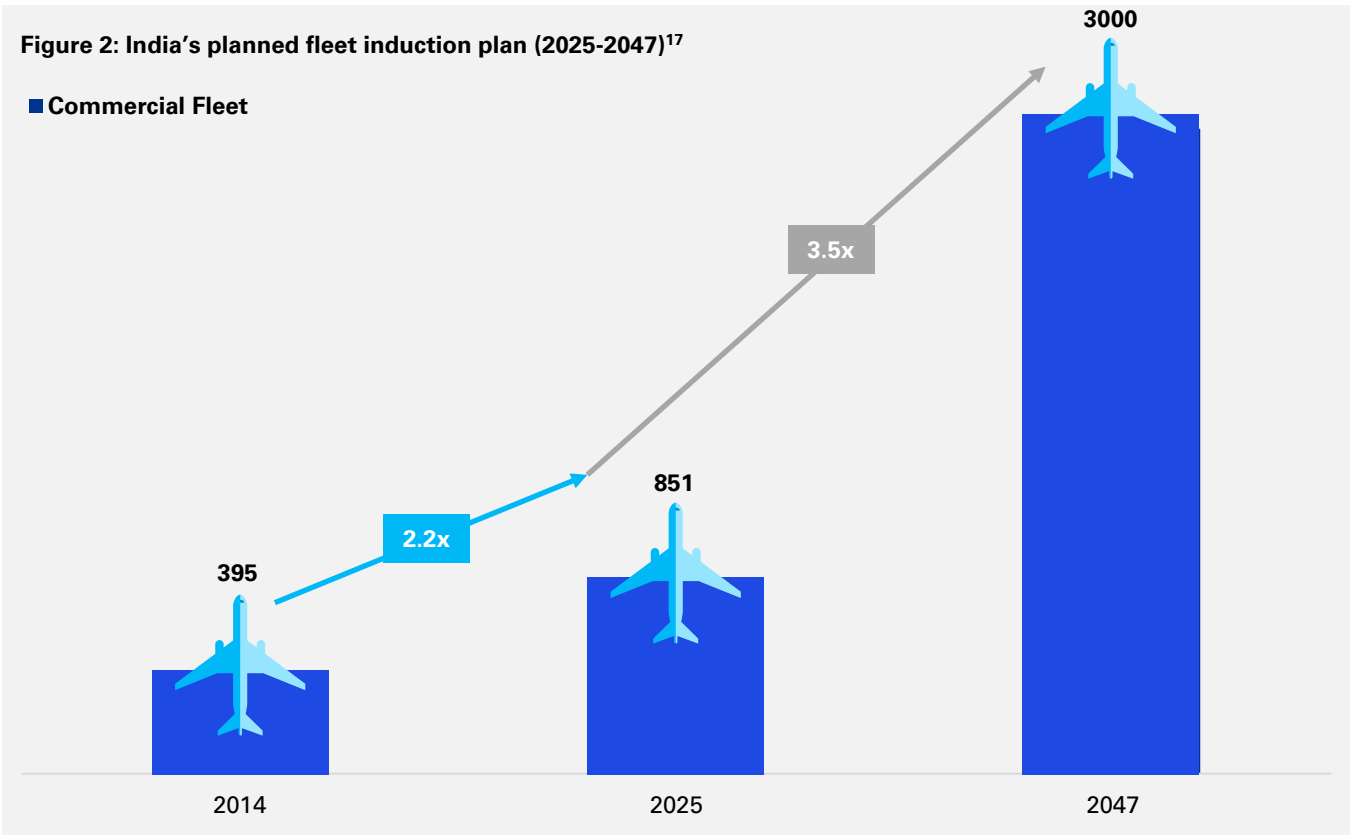
Figure 1: India's planned airport growth (2025-2047)[15]



Airline networks are also progressing with Indian airlines having placed amongst the largest aircraft orders including wide body aircraft. Fleet induction will lift capacity materially through next decade. These would expand domestic connectivity and enable Indian airlines to provide direct long haul and ultra long-haul connectivity connecting the world through India. The international growth is complemented by regional growth with the success of UDAN scheme. UDAN has connected 93 aerodromes, operationalised 657 routes, and carried around 1.5 crore passengers to date[16].

Resilience and sustainable airline operations remains a priority. External shocks such as airspace closures can disproportionately affect long-haul competitiveness. The policy emphasis should therefore be on lowering operating costs, improving access to affordable capital and enabling regional airlines to achieve scale.

Figure 2: India's planned fleet induction plan (2025-2047)[17]



Beyond air travel, Super-connected India depends on the quality of integration across the wider mobility and logistics system. Airports must be connected seamlessly with rail, road, metro and logistics networks so that passengers and goods move efficiently from hinterlands to gateways and onward to global markets. Coordinated scheduling across modes, unified digital platforms, and progressively interoperable ticketing and baggage arrangements should create a continuum of travel making regional airports practical enablers of economic participation and making hub airports credible, time-efficient transit points for domestic and international flows.

The next phase is therefore a scale and execution challenge across both sides of the system. India currently operates 164 airports[18] and the 2047 ambition implies a balanced portfolio of mega hubs, national gateways and cost-efficient regional airports, operating as an integrated aviation grid and served by airlines with the fleet depth and unit-cost competitiveness to provide dependable domestic coverage and direct global reach. The sections below set out what is required from airports and airlines, and how regional and hub connectivity must be developed in tandem to translate this ambition into a reliable, internationally competitive system.

Action points

A super-connected India requires coordinated strategies across government stakeholders, airlines and airports. The focus is to create capacity where it is needed, lower structural costs that constrain growth, and establish hub standards that capture passenger and cargo flows within India.

1. **Define airport network architecture:**
   - Differentiate airports under National Airport Development Plan by role from global hubs, national gateways, regional connectors, to strategic/remote access airports and design capacity, surface access, service levels, and commercial models accordingly
   - Designate a priority set of hub airports and national gateways, with role clarity and measurable transfer targets to align infrastructure, slots, and facilitation measures with India hub strategy
   - Integrate multi-modal planning leveraging PM Gati Shakti during airport development, set access-time targets for priority metros, and implement multimodal wayfinding; publish access dashboards.
2. **Build hub competitiveness:**
   - Define passenger transfer standards, eliminate re-screening where permissible, and enable airside through-baggage flows
   - Embed hub readiness standards in concessions and operator performance regimes, covering minimum connect times, transfer process design, through-baggage commitments, predictable slot banks, inter-terminal connectivity and connection reliability KPIs
   - Strengthen passenger facilitation as a competitive tool
     - Ease visa norms for transit passengers, expand visa-on-arrival and e-transit, and enable transit visa booking through airline platforms
     - Launch a 'Experience India' brand and integrate half-day and one-day city tours into airline booking journeys in partnership with Tourism and State authorities, coordinate customer communication and disruption handling
     - Implement pre-clearance facility for priority and high-volume international markets such as United States.
3. **Airline expansion and sustainability:**
   - Inclusion of ATF under GST to lower structural operating costs
   - Grant of infrastructure status to aircraft
   - Removal of VAT and excise on ATF for domestic legs carrying a significant share of international transfer passengers that feed hub banks
   - Establish National Aviation Resilience Fund to provide targeted support during exceptional shocks and define rules-based triggers and disbursement protocols
   - Review Route Dispersal Guidelines to align with RCS outcomes and introduce market-based credit mechanisms
   - Structural interventions to lower ancillary costs and bottlenecks in MRO, leasing, capital and skilling detailed in subsequent chapters
   - Rationalise airport charges through innovative frameworks balancing investor returns and cost to airlines and passengers
   - Make regional connectivity structurally sustainable through:
     - better route selection based on realistic demand and competing surface connectivity
     - tapered, time bound support that is designed to graduate routes to viability
     - low-cost and no-frills airport models at regional airports with modular facilities
     - Fast-track re-allocation of non-operational UDAN routes.
4. **Leverage technology**
   - Embed AI in operational decision making, customer services and enterprise functions
   - Scale DigiYatra across all airports and for international and transfer checks
   - Modernise CNS and ATM systems and deploy advanced decision-support tools at high-volume airports to raise runway and taxiway throughput and protect peak banks
   - Assess new technologies for efficient and cost-effective operations such as Digital Towers.

03
AI powered Indian aviation tech stack

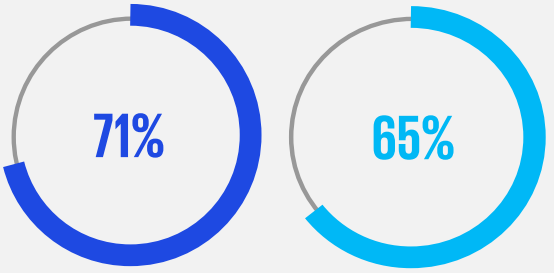
Context

As India moves towards a 1.3 billion passenger market[19], adding physical infrastructure - runways, apron and terminals will not be enough. The leap in efficiency must be digital and intelligence driven. While individual entities in the ecosystem such as airports and airlines are taking significant initiatives on technology and AI, operational silos limit system-level optimisation. Airport Collaborative Decision Making enables data sharing by bringing stakeholders together, however, ongoing advancements in technology imply that the potential for optimisation end-to-end passenger journey is much larger.

Artificial Intelligence (AI) is reshaping aviation worldwide by enabling predictive, automated, and data-driven operations across the value chain. Global leaders are deploying AI to enhance passenger facilitation, optimise airside processes, strengthen safety oversight, and improve cost efficiency. CEOs in India and globally across industries rank AI as a top investment priority. This focus reflects a clear expectation of operational, commercial and customer benefits.

Agentic AI is bringing a strategic shift in enterprise operations. Its ability to autonomously observe, decide, and act has become an operational imperative. Practical applications include predictive maintenance, fraud detection, revenue and resource management and hyper-personalised customer engagement. Successfully adopting agentic AI demands a fundamental revisit of operating models, technology stacks, and platform architecture alongside workforce capabilities and governance frameworks.

Cite that despite economic uncertainty, AI is a top investment priority for their organisation



Source: KPMG 2025 India CEO Outlook

Globally, airports are using AI-driven resource allocation and queue prediction to maintain service levels at scale while airlines are leveraging machine learning for fuel planning, disruption recovery, and predictive maintenance. Similarly, regulators are piloting AI-based risk surveillance frameworks to improve compliance and resilience. Advancements such as universal commerce protocols can disrupt commercial proposition from the way tickets are booked to the interplay of aviation commercial ecosystem. Digital Twins and video analytics are enabling use of advanced technologies in enhancing operational efficiency, reducing congestion, better resource management and improving passenger experience.

While the steps are progressing in the right direction, lack of standardised protocols for data sharing limit the level of system level optimisation. DigiYatra, which is now operational at 24 airports[20], has shown how standardised protocols and data sharing across different stakeholders - airlines, airport, regulators can enable technology to drive operational efficiency and passenger experience while ensuring privacy. These operational and architectural choices have supported faster, paperless movement from entry to boarding and enabled wider adoption without central storage of sensitive identity data. DigiYatra has resulted in reduced processing times by up to 40 per cent[21] at participating airports and improving passenger experience. This success has to be expanded to a wider ecosystem.

A national stack will scale these capabilities and convert large volumes of operational and passenger data into actionable intelligence in real time. The technology stack will provides secure, interoperable foundation through which airports, airlines, air navigation service provider, regulators, security agencies, and cargo stakeholders can exchange data and execute coordinated operations. Four components are key - trusted digital identity and access management for people and systems; common data standards and APIs for real-time exchange; robust cybersecurity and privacy controls; and decision-support tools that turn operational data into actionable insights for the apron, terminal, and network.

By dissolving operational silos and creating a single source of truth, it can lift safety and punctuality, increase throughput and deliver more seamless passenger experiences. In practice, this would mean earlier disruption detection, better resource allocation and new approaches to network planning, slot management and passenger experience. Integrating insights across airlines, airports, regulators and cargo systems will raise effective capacity and manage growing complexity more efficiently.

The Indian aviation tech stack refers to a layered architecture comprising:

- **Data foundations** that establish standard protocols for data collection and sharing across operations, passengers, airspace and assets, with common data models, high frequency ingestion and robust quality controls
- **Connectivity, compute and platforms** that support secure, low latency data exchange and model deployment at the edge and in the cloud
- **Aviation enterprise applications** such as on passenger processing, resource management, air navigation, air-side management, communication etc.
- **AI applications** that improve safety, punctuality, capacity, customer experience and unit costs, including predictive maintenance, disruption recovery, intelligent screening, demand forecasting and revenue optimisation
- **Governance, security and assurance** that ensure privacy by design, model explainability, certification pathways and cyber resilience.

Action points

1. **Develop a National Roadmap for technology and AI in aviation**
    - Align with Digital India and IndiaAI: Publish a five year roadmap aligned to Digital India and IndiaAI missions, with clear outcomes
    - Set data sharing protocols: Develop standards for common identifiers and event definitions across airports, airlines, regulators and logistics, with open APIs for data sharing
    - Prioritise use cases across passenger experience, safety, operational efficiency, demand and revenue, disruption recovery, maintenance and regulatory oversight
    - Establish cybersecurity and regulatory guardrails with human in the loop oversight, set requirements for data security, privacy and interoperability, and adopt risk based audits.
2. **Build an integrated digital backbone**
    - Build a unified platform connecting airports, airlines, regulators, and service providers for real-time data exchange, eliminating silos and enabling coordinated passenger, cargo, and airside operations.

3. **Enterprises should accelerate AI adoption**
    - **Set the enterprise AI vision:** Define a compelling AI vision and strategy that ties to specific outcome targets, capital allocation, risk appetite and regulatory expectations
    - **Take an enterprise-wide view of AI**: Treat AI as a firm-wide capability, not an isolated project. Create a cross-functional portfolio which can range from enterprise functions, operations, safety, commercial and customer
    - **Start agentic pilots** focusing on hotspots, low risk-repetitive areas with broad utilisation. Define deployment playbooks that cover function, fallbacks, human decision checkpoints and support
    - **Prepare to scale agents** within key functions and workflows
    - **Evolve enterprise partner ecosystem:** As agents move into core operations, reliance on technology partners will rise. The choice of partners, and your importance to them, will shape speed to market and differentiation[22]
    - **Strengthen trusted AI governance:** Introduce model risk classification, documentation, escalation paths and periodic review, with audit trails and role clarity for supervisors
    - **Upskill the workforce:** Provide training in data literacy, AI-assisted tools and new operating models, and align performance metrics to safe and effective AI adoption.
4. **Enable innovation and indigenous aviation technology development**
    - Indigenise aviation products: Launch challenge programmes and multi year framework contracts for development of technology products on aviation specific use cases such as turnaround optimisation, disruption recovery, passenger flow management, baggage, retailing and cargo visibility
    - Promote startups and SMEs: Create a Startup Programme with rapid sandbox access at selected airports, privacy safe datasets, fast track procurement and a pathway from pilot to national roll out
    - Operate regulatory sandboxes: Enable controlled experimentation for AI in safety adjacent areas such as queue forecasting, stand readiness, surface movement and cargo flows, with transparent reporting and independent assurance
    - Champion Indian aviation standards: Promote Indian participation in international standards bodies.

04 Aircraft component manufacturing

Context

Manufacturing will be the decisive pillar in positioning Indian aviation as a strategic engine of Viksit Bharat @ 2047. India is a large and fast growing market yet has limited production capabilities. As thousands of aircraft are inducted to enable a Super-connected India, the strategic objective is to capture a far greater share of the economic, technological and employment value. That requires deeper participation across design, advanced engineering, certification, production and lifecycle support.

Continued reliance on imported aircraft and systems keeps procurement priorities, delivery schedules and pricing outside India. It drives foreign exchange outflows and moves high value employment in design, engineering and certification offshore. Localising aircraft and component manufacturing strengthens supply resilience and retains value within the economy. It creates skilled jobs across special processes, testing, certification and quality, and builds the industrial depth that long cycle aerospace programmes require.

Policy has set the direction with Atmanirbhar Bharat which has provided the required impetus for manufacturing. Rationalised taxes, state led clusters and investments in advanced manufacturing have built momentum. More than 250 Indian suppliers[23] contribute to global aviation procurement and annual sourcing by major OEMs has grown several fold in the last decade. India's footprint in global programmes is visible with manufacturing of key assemblies and propulsion components in India.

India's path to aviation manufacturing is twin tracked. Licensed and technology transfer manufacturing on proven platforms, linked to domestic fleet orders, can accelerate supplier maturation across aerostructures, systems, engines and avionics, creating Tier 1 and Tier 2 depth at scale. In parallel, sustained investment in indigenous aircraft programmes, particularly in the regional segment, will build end to end capability in conceptual design, systems integration, certification and intellectual property.

Foundational progress in components provides the immediate platform for scale, but structural bottlenecks must be addressed. Access to certified raw materials, capacity for special processes, timely approvals and test slots, efficient logistics and competitive finance are essential to move from parts to integrated assemblies and systems. Doing so will support expansion of manufacturing ecosystem while building the competencies needed for manufacturing complete aircraft.

MSMEs are at the core of manufacturing ecosystem but need to evolve to compete globally. Industry 4.0 capabilities are no longer optional but necessary for competitiveness and quality control. Automation, industrial IoT, digital twins and AI underpin global aerospace standards of quality, traceability and cost competitiveness. Only a limited share of Indian manufacturers currently operate at this level. Closing the gap will require digital capabilities embedded into the manufacturing DNA with real time production control, predictive maintenance, adaptive supply planning and rapid design to production cycles. The convergence of enterprise data with ecosystem data across logistics, suppliers and infrastructure can unlock a step change in productivity, resilience and responsiveness.

Executed with discipline, this will correct today's asymmetry between market size and production capability. By 2047, Indian aviation should be anchored by a competitive manufacturing ecosystem that is integrated into global value chains, resilient to shocks, digitally enabled and capable of delivering aircraft and components that meet the highest international standards.

Action points

1. **Anchor demand and build the value chain**
   - Establish a national integrated manufacturing value chain covering design, materials, machining, avionics, software, assembly, testing, certification and aftermarket services, anchored by long term demand from Indian fleets
   - Set domestic value add targets by sub system (structures, avionics, landing gear, interiors, engines and accessories).
2. **Standards, certification and reciprocity**
   - Recognise equivalence between international material standards (AMS/ASTM) and BIS for specified aerospace grades to remove customs friction and input uncertainty
   - Align DGCA review and approval frameworks with EASA and FAA and negotiate working arrangements for acceptance of defined classes of components and repairs.
3. **Common and test infrastructure**
   - Common infrastructure: Create NADCAP and ISO accredited common user centres for special processes such as NDT, heat treatment, coatings and composites within regional clusters
   - Establish accredited laboratories for fatigue, environmental and materials testing.
4. **Clusters, land and utilities**
   - Develop aerospace parks with bankable concessions offering 50 year leases, WPI linked indexation, construction period rent moratoria and industrial rate land charges
   - Define park level utility standards for power quality, clean water, effluent treatment and hazardous waste handling, with shared facilities
   - Operationalise single window digital clearances with risk based approvals and service level agreements for land, building, security, bonded warehousing and environmental permits.
5. **Taxes and duties**
   - Rationalise GST and duty structures for aircraft parts, tools and test equipment to avoid inverted duty and reduce compliance friction
   - Harmonise HS codes and enable advance rulings for aerospace inputs to improve predictability at ports.
6. **Incentives**
   - Introduce outcome linked incentives for priority systems and components tied to domestic value add, certification milestones and export revenue
   - Offer interest subvention and bridge finance backed by OEM letters of intent, linked to delivery reliability and quality performance.
7. **Logistics and parts distribution**
   - Establish bonded OEM parts hubs in North, West and South regions with 24×7 green channels and defined AOG service levels
   - Notify customs fast track procedures for critical spares and test articles to reduce downtime and certification delays.
8. **Licensed manufacturing acceleration**
   - Finalise technology transfer agreements and localisation plans for selected platforms and approve production schedules to commence in by 2029, with supplier onboarding targets
   - Run supplier development programmes with OEMs covering gap audits, PPAP and FAI requirements, pooled auditors and co invested tooling
   - Incentive Industry 4.0 and technology deployment across Tier 2 and Tier 3 suppliers to meet build to spec requirements.
9. **Indigenous regional aircraft programme**
   - Set design and prototype milestones, certification pathway and industrialisation plan with long lead procurement timelines
   - Secure test, evaluation and integration facilities, align workforce pipelines and university partnerships, embed phase gate reviews and risk registers, and publish the programme calendar to 2040.
10. **Governance and monitoring**
   - Create an Aerospace Manufacturing Council chaired by MoCA to coordinate standards, clusters, finance and international reciprocity.

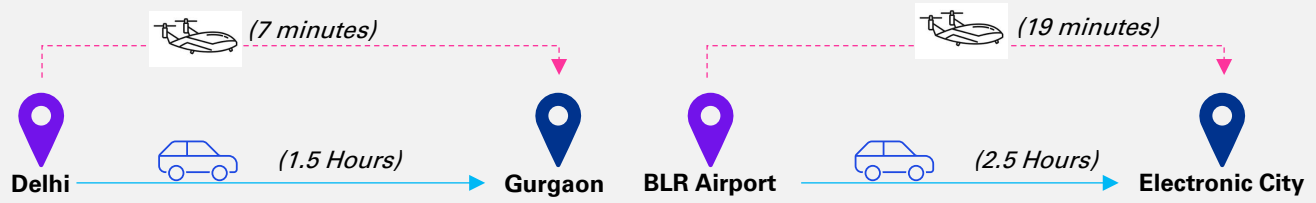
05 Advanced Air Mobility (AAM)

Context and current landscape

Rapid urbanisation has pushed India's largest metros into a mobility deadlock, where surface infrastructure expansion has limitations on expansion. Advanced Air Mobility through electric vertical and take-off landing (eVTOLs) offers a structural relief mechanism by shifting a share of high-value, short-haul movement into controlled low-altitude airspace. These platforms can shorten travel times, decongest urban corridors, and lower emissions, reshaping mobility for both metropolitan areas and regional connectors.

Illustratively, a journey such as Delhi-Gurugram or Bengaluru Airport-Electronic City that can take 90-150 minutes by road could be completed in under 20 minutes by eVTOL with estimates fares of INR 2,000-3,000[24] . This will improve ease of living and unlock economic activity in the country. AAM therefore complements surface and conventional aviation networks, particularly for city-airport links, dense transport corridors, emergency response, and time-critical logistics.

Figure 11: Enhanced ease of living through shorter travel times



The strategic shift is from pilots and testing to commercialisation of eVToLs within this decade. Early deployment will focus on clearly defined, high-friction corridors where the economic value of time savings is highest, rather than blanket citywide coverage. Examples include congested metro–airport links and dense business corridors where road travel routinely exceeds acceptable thresholds. This corridor-first approach allows regulators and operators to prove safety, unit economics, and operational discipline before scaling. Infrastructure will follow a grid model of compact vertiports integrated into airports, multimodal hubs, and commercial districts, supported by reliable power and fast-charging capability to enable high-frequency operations.

Globally, the industry is advancing from prototype development and testing towards commercial deployment. Regulations are evolving globally - in the United States, the Federal Aviation Administration has established a new powered lift category and issued a Special Federal Aviation Regulation that underpins pilot licensing and operational integration, setting the foundation for safe entry into controlled airspace. In Europe, the regulatory package now covers operations, flight crew licensing, rules of the air, and air traffic management, enabling innovative air mobility programmes to run pre commercial validations. In the UAE, a hybrid framework allows eVTOLs and helicopters to share infrastructure, with the first large vertiport near Dubai International Airport expected to be operational by 2026[25]. Prototype and piloted test flights have progressed across leading global eVTOL manufacturers with city pilots announced for 2026-2027[26].

India has entered AAM with clear intent and a phased plan. DGCA has issued guidance on baseline airworthiness for vertical capable aircraft, followed by training and endorsement material that defines prerequisites, type rating processes, and operational checks, creating a pathway toward type certification and operational approvals. The Ministry of Civil Aviation and DGCA have identified five locations for controlled flight trials and sandbox operations, with pilot trials envisaged in 2027[27] and commercial operations targeted for 2029[28], subject to certification and readiness. The complexity in technology may result in these timelines getting extended. Domestic innovation is growing, with Indian companies developing indigenous concepts. International partnerships are proposing early routes such as Delhi-Gurugram and Bengaluru Airport-Electronic City[29] to demonstrate unit economics and service reliability.

In addition to core aircraft readiness, AAM's successful introduction requires ancillary infrastructure readiness.

Vertiport networks with appropriate siting and ground safety features, charging and battery swap infrastructure, UTM-ATM integration for digital flight approvals and deconfliction, and standards for noise, environment, privacy, and operator certification are required. It also requires skilled talent pipelines for pilots, maintenance technicians, vertiport managers, and UTM specialists, alongside consumer acceptance programmes to build trust through transparent safety and service metrics.

Advanced Air Mobility offers India the opportunity to participate as an early-cycle manufacturer rather than a late-stage adopter. Unlike large commercial aircraft, where entry barriers are already significant, AAM platforms create an opening to build capability from the outset across electric propulsion systems, avionics, composites, batteries, and software. These competencies are synergistic to conventional aircraft and helicopter manufacturing, strengthening India's position across the wider aerospace value chain. By anchoring AAM production domestically, India can use this emerging segment as a catalyst to deepen aerospace manufacturing, accelerate technology absorption, and avoid the cycle of catching up that has constrained past aviation industrialisation.

Action points

1. **Policy and planning**
   - Publish a National AAM Roadmap with milestones for trials, certification, commercial deployment and infrastructure build out.
2. **Aircraft development and certification**
   - Notify India's VTOL type certification and operational approval processes, including operating envelopes for heat, wind, noise, monsoon intensity and reserve energy margins
   - Accelerate eVTOL R&D and localisation through targeted grants and procurement frameworks for propulsion, avionics, battery packs and flight control software to strengthen domestic supply chains
   - Operationalise controlled multi site sandbox trials with a standard protocol for safety, reliability, noise and community impact, and publish readiness criteria for scaling based on trial outcomes.
3. **Infrastructure readiness and multimodal integration**
   - Integrate vertiports into urban master plans and airport plans for priority cities, designating high-volume corridors and sites
   - Issue vertiport design and operations guidelines covering site selection, obstacle limitation surfaces, passenger flows, firefighting and rescue, ground safety and emergency procedures
   - Deploy fast charging and battery swap infrastructure with grid augmentation and storage where required
   - Define interoperability standards for eVTOL charging interfaces.
4. **Airspace and operational frameworks**
   - Implement UTM and ATM integration for digital flight approvals, deconfliction and geofencing, with appropriate traffic services
   - Designate low altitude corridors and vertiport procedures near controlled aerodromes to manage approach phase complexities
   - Introduce liability, insurance and operator certification frameworks to underpin safe commercial operations
   - Adopt risk based oversight and incident reporting, using trial data and early service KPIs for continuous improvement.
5. **Market development and financing**
   - Enable PPP and viability gap models for vertiports, including standard concession templates, post commercial acceptance
   - Anchor demand with airport connectors and city-pair shuttles (e.g., Delhi–Gurugram, Bengaluru Airport–Electronic City) to prove reliability and unit economics
   - Build consumer acceptance via transparent safety metrics and reliability dashboards
   - Incentives and concessional financing (interest subvention schemes) for India manufactured fleet induction and early operations
   - Launch pilot services for enterprise shuttles, airport connectors, medical logistics and tourism routes to prove reliability and unit economics, supported by transparent safety and reliability dashboards.
6. **Standards and ecosystem governance**
   - Publish operator and maintenance standards for vertiport operations, approved maintenance organisations, ground safety audits and dispatch reliability KPIs
   - Define and monitor common KPIs including dispatch reliability, safety events, noise footprints and passenger satisfaction
   - Enforce common data exchange protocols across aircraft platforms and infrastructure for scheduling, passenger facilitation and energy management.

06 Sustainable Aviation Fuel (SAF)

Context

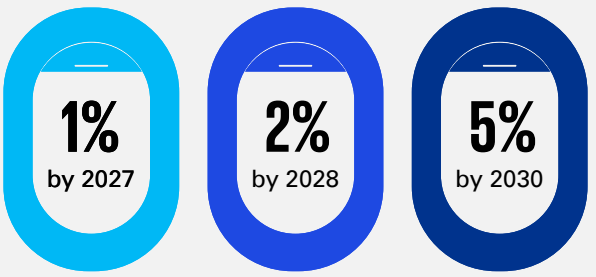
Decarbonising aviation is a global imperative. Aviation contributes around 2.5 per cent[30] of global carbon emissions, and without intervention, its share could rise to over 20 per cent by 2050[31] as other sectors decarbonise[32] . With India's passenger traffic projected to grow six-fold by 2047[33], sustainability is no longer optional but central to the sector's viability.

Sustainable Aviation Fuel (SAF) offers the most viable and scalable pathway to reduce emissions in the near and medium term. Global aviation is converging rapidly around SAF as the principal pathway to net-zero. ICAO's Long-Term Aspirational Goal for 2050, mandates such as EU's ReFuelEU Aviation mandate are together catalysing a SAF market expected to scale from about 600 million litres in 2023 to nearly 3 billion litres by around 2026[34]. Across regions, airlines, airports, and fuel producers are re-engineering value chains to ensure traffic growth remains aligned with climate commitments.

For India, this transition is both an imperative and a strategic opportunity. As one of the fastest-growing aviation markets globally, fuel demand will rise structurally over the next two decades. At the same time, India possesses a combination of advantages: abundant and diversified feedstock potential, deep refining and blending capacity, proven experience in bioenergy, and a strong policy push on energy transition. A domestic SAF industry can therefore deliver multiple dividends from lower crude import dependence, enhanced rural incomes, creation of new technology value chains to large-scale green employment. For India, early supply will likely be HEFA from used cooking oil and other waste lipids, while alcohol-to-jet and e-SAF scale later as low-carbon power, green hydrogen and conversion technologies mature.

India has taken initial steps through guidance on SAF blending and engagement with Oil Marketing Companies (OMCs) to develop production capacity. Five SAF plants are under development by IOCL, BPCL, HPCL, CPCL, and MRPL with a combined capacity of ~95 KTPA[35] (9.5 crore litres/ year). The National Biofuels Coordination Committee has also recommended phased blending targets for international flights as shown in the figure below:

Figure 13: India's SAF blending roadmap for international flights[36]



India has a **unique advantage** - abundant biomass and agricultural residue that can be converted into feedstock for SAF. Estimates suggest ~680 million metric tonnes of agricultural residue annually (incl. 230 million tonnes of surplus biomass)[37], ~3.4 million tonnes of used cooking oil (UCO)[38] and Ethanol production capacity exceeding 1,800 crore litres annually[39]. These resources create a pathway for domestic SAF supply and **position India as a potential regional hub and global exporter.**

However, challenges remain. SAF is currently **2–3 times costlier[40] than conventional ATF**, making adoption commercially difficult in a price-sensitive market. Without fiscal support, robust logistics, and global certification alignment, scale-up will be slow.

To lead, India must act on two fronts simultaneously. First, it must establish a coherent policy architecture that creates bankable demand signals and mobilises capital at scale. Second, it must build the enabling ancillaries that allow capital to translate into sustained SAF output including feedstock aggregation and logistics, research and innovation, and credible certification and traceability systems.

Feedstock collection is the binding constraint as the focus is on manufacturing SAF through HEFA pathway in the near term. While India has significant potential across used cooking oil, agricultural residues, and alcohol-to-jet pathways, fragmentation in collection and pricing limits scalability.

Equally critical is certification and sustainability assurance. Globally accepted lifecycle accounting, traceability, and CORSIA-aligned certification will determine whether Indian SAF can access international markets and airline offtake contracts.

By aligning policy ambition with execution and pairing domestic feedstock depth with global technology and market linkages, India can position itself as a credible, large-scale supplier at the centre of the global green aviation economy.

Action points

1. **Policy and regulatory**
   - Launch a National SAF Roadmap that sets capacity milestones, feedstock priorities and a timetable for commercial deployment
   - Bridge the SAF-ATF cost gap through a package of fiscal instruments: excise differentials, viability gap support, contracts for difference, accelerated depreciation, GST rationalisation for certified inputs, and customs remission for approved feedstocks and equipment
   - Establish a national certification and measurement, reporting and verification (MRV) framework aligned to ASTM D7566 annexes and recognised sustainability schemes, including a single digital registry for chain of custody and lifecycle accounting
   - Enable mutual recognition and market access by aligning documentation with key import markets and airport fuel quality protocols, ensuring immediate export readiness.
2. **Production and technology**
   - Enable collaboration between OMCs, technology providers and airlines to deliver bankable projects with shared risk, clear governance and defined start of production dates
   - Plan for an evolving technology strategy including policy measures, life cycle investments:
     - Near term: HEFA co processing and stand alone units within existing refining ecosystems
     - Medium term: Alcohol to Jet using ethanol, and Fischer–Tropsch using agri residue and MSW
     - Long term: Power to Liquid linked to green hydrogen corridors and low carbon power.
   - Enable feedstock logistics programme for collection, aggregation and preprocessing, with quality standards, price benchmarks and digital traceability from source to blend
   - Enable multi year offtake agreements with price floors and indexation to improve bankability, including ‘green corridor’ routes to demonstrate reliability and customer value
   - Integrate SAF development with National Green Hydrogen Mission for long-term PtL/e-SAF pathways.
3. **Infrastructure and certification**
   - Develop SAF logistics hubs at major airports to enable blending
   - Accredit independent testing laboratories for fuel property validation and sustainability audits; expand national capacity for conformity assessment
   - Integrate national SAF registry with airport and airline systems for automated data exchange, batch tracking and emissions claims.
4. **Market development and rural integration**
   - Position India as a regional SAF hub with promotion of India manufacture SAF
   - Align production with international sustainability standards to access premium export markets such as the EU
   - Foster global collaborations for technology transfer, certification, and accelerated scale-up
   - Build a dependable rural supply chain for SAF by engaging farmer producer organisations (FPOs) and MSMEs for biomass collection and preprocessing, linking payments to quality and sustainability, and publishing model contracts
   - Run a public transparency programme that discloses verified lifecycle savings, rural income effects and air quality benefits.
5. **Financing and risk mitigation**
   - Enable concessional debt to de-risk early projects; enable green bonds and credit guarantees for scale up assets
   - Allow priority sector treatment for certified feedstock logistics and early plants and unlock ESG capital
   - Monetise lifecycle emissions reductions via the Carbon Credit Trading Scheme
   - Enable receivables and offtake financing against long term airline contracts; offer interest subvention tied to delivery reliability and sustainability performance.

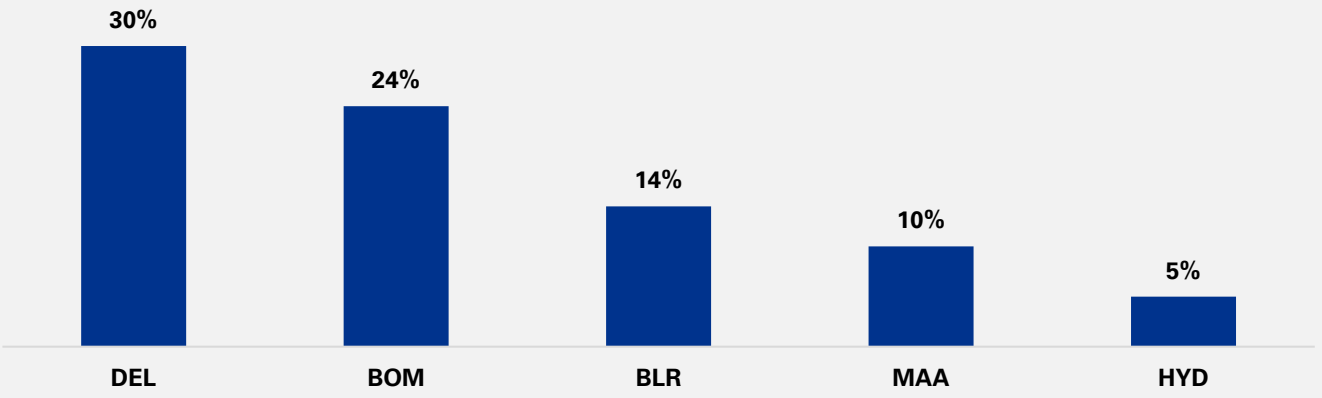
07
Air Cargo

Context

Air cargo will be a critical enabler of Viksit Bharat @ 2047, underpinning India's ambitions in manufacturing, exports, and global value chain integration. India currently handles ~ 3.7 million metric tonnes[41] of air cargo annually, with nearly 80 per cent[42] concentrated across the top five airports. While this reflects strong gateway capacity, it also highlights the scale of unrealised potential. Comparable global hubs such as Hong Kong (SAR), China handle materially higher volumes.

A key reason for this is cost and process frictions. Logistics costs at ~14 per cent of GDP compare unfavourably with 7-8 per cent in developed economies[43], reflecting fragmented workflows, manual documentation, and limited multimodal integration. Capacity constraints are visible in cold-chain coverage outside the top airports, airside congestion at metros, and limited freighter fleets (~18 aircraft) that leave belly cargo to carry the majority of volumes[44]. On the landside, truck queueing, space limitations, and documentation extend dwell times; e-AWB adoption (~80 per cent[45]) has not yet reached universal compliance. Addressing these frictions is central to lowering logistics costs and enabling air cargo to serve as a reliable backbone for industrial growth under Viksit Bharat @ 2047.

Figure 14: Air cargo concentration in India's 5 major airports



Recent regulatory reforms signal this transition. The elimination of transshipment re-screening marks a decisive step in improving global competitiveness by reducing dwell times and friction for international cargo flows. Building on this foundation, the next phase will focus on creating integrated cargo ecosystems. Cargo villages with co-located customs, security, freight forwarders, and logistics providers will reduce handoffs and congestion. Dedicated temperature-controlled corridors for pharmaceuticals and perishables, bonded trucking, and rail-linked cargo corridors aligned with PM Gati Shakti will strengthen multimodal integration and lower end-to-end logistics costs. Freighter enablement through slots, proximate parking bays, and predictable operating windows will further improve schedule reliability and asset utilisation.

Technology will be central to this transformation. End-to-end digitisation across all stakeholders will eliminate physical documentation, enable single-window clearances, and allow advance risk assessment and faster cargo release. Automation and AI-driven analytics to optimise cargo flows, predict congestion, and dynamically allocate resources would materially reduce lead times and operating costs. Transparent governance through Cargo Terminal Service Quality ratings and real-time dwell-time dashboards will drive accountability and continuous improvement. Collectively, these measures will deliver reduced congestion, faster clearance, and higher global competitiveness, positioning air cargo as a backbone for industrial acceleration and manufacturing growth.

Action points

1. **Policy and Regulations**
    - Develop a National Air Cargo Acceleration Plan with targets for throughput, dwell time, and transshipment share; identify hub gateways and spoke corridors
    - Refine AFS policy to enable off-airport processing with lower handling costs
    - Operationalise BCAS transshipment reforms nationally with a mutual security equivalence list
    - Extend 24x7 availability of customs and allied agencies through ICEGATE 2.0 mapping and remote e-clearance for smaller airports
    - Introduce Cargo Terminal Service Quality (CTSQ) ratings and publish monthly dashboards for dwell time, transshipment volumes, and digitisation progress.
2. **Process reforms and digitisation**
    - Implement end-to-end electronic cargo documentation through Airport Cargo Community Systems (ACCS) integrated with ULIP, enabling single-window filings, real-time data sharing, and risk-based clearance
    - Move to 100 per cent paperless processing with single-window filings and enforce e-AWB and e-freight adoption to 100 per cent
    - Implement advance filing and pre-arrival risk assessment for imports
    - Expand known shipper and regulated agent programmes to reduce inspection intensity while maintaining security equivalence on transshipment corridors
    - Link TSP charges to defined services and publish dashboards for dwell times and digitisation progress.
3. **Infrastructure and connectivity**
    - Enable regional transshipment flows by leveraging widebody growth and hub-and-spoke connectivity and transhipment reforms
    - Develop cargo villages with co-located customs and allied agencies
    - Expand cold-chain and temperature-controlled lanes; create bonded trucking and rail-linked corridors and integrate with ICD networks under PM Gati Shakti
    - Expand freighter fleets and lower total logistics cost for air cargo movement.

08 Skilling

Context

Aviation is a human-intensive sector. Every flight relies on a coordinated workforce across regulated and nonregulated roles: pilots, aircraft maintenance engineers, air traffic controllers, cabin crew, cargo specialists, safety and regulatory professionals. Emerging capabilities in AI, analytics, advanced air mobility, and drones is rapidly adding new requirements for skilling workforce. Skilling is central to safety, reliability, operational efficiency, and compliance. It is also the principal lever that allows capacity to scale with demand. India's aviation system currently supports about 370,000 direct jobs[46], with additional employment generated across tourism, infrastructure, retail, and manufacturing.

Demand is set to rise sharply. Pilot requirements are projected to increase from roughly 10,000 in 2024 to estimated 40,000 by 2047[47]. Aircraft maintenance engineer requirements are expected to grow from roughly 8,000 to about 38,000 over the same period[48]. A considerable number of Indian students pursue pilot training overseas due to quality and opportunity considerations.

Skilling constraints are concentrated in quality, infrastructure, cost, and access. Flying training organisations face limited availability of all-weather, instrument-flight-rules capable airstrips, airworthy trainer aircraft, and full flight simulators that require high capital outlays and specialised maintenance. Access to training is uneven across regions and cohorts, and high upfront costs remain a barrier.

Targeted reforms have begun. The DGCA national ranking framework for flying training organisations improves transparency and performance benchmarking. Digital licensing for pilots and air traffic controllers is streamlining issuance. Outreach and transition pathways are facilitating the movement of defense pilots into civil roles. Capacity uplift initiatives are progressing through airstrip repurposing. These measures provide a foundation but are not yet a cohesive system.

As India moves towards a fleet of nearly 3,000[49] aircraft, an airport network that could exceed 400 locations[50], and materially higher operational complexity, human capital will become the determining factor. Aircraft, terminals, and technology can be acquired within defined timelines. Aviation-grade capability requires multi-year investment, regulatory rigor, and sustained institutional discipline. If asset induction outpaces workforce readiness, a structural capability gap will emerge.

Meeting projected demand requires an integrated approach. Over the next two decades India will need a predictable pipeline of pilots, aircraft maintenance engineers, air traffic controllers, ground operations specialists, cargo professionals, safety and security personnel, and regulators. New skill categories will be required in advanced air mobility, drones, digital aviation systems, aircraft leasing, and sustainable fuels. The system must move from fragmented and ad hoc training to a National Aviation Skilling Mission anchored in forward demand planning, role-wise capacity targets, and outcome accountability. Curricula should reflect the sector's digital transformation. Core competencies now include digital engineering, automation, AI-enabled operations, cybersecurity, and data-driven safety oversight, consistent with aviation's shift from a mechanical industry to a complex cyber-physical system.

In the medium to long term, the skilling agenda also creates a dual export opportunity. First, India can develop a pipeline of skilled aviation professionals to meet global aviation workforce requirements. This requires alignment of training standards with international benchmarks, transparent assessment, and sustained quality assurance so that pilots, aircraft maintenance engineers, air traffic controllers, and cabin crew can transition seamlessly into foreign carriers and maintenance organisations. Second, India can position itself as a destination for aviation education by attracting foreign students to train domestically. To capture this opportunity, policy and industry should focus on a defined set of enablers. Training centers should pursue accreditation pathways that map to widely recognised standards, with mutual recognition where feasible, to ensure portability of licenses and type ratings. Government to government and regulator-to-regulator arrangements can support student mobility, supervised line experience, and on-the-job training in partner jurisdictions.

Action points

1. **Policy and Regulations**
    - Launch a National Aviation Skilling Mission (NASM) with a ten-year plan and a horizon to 2047, setting role-wise targets across pilots, AMEs, ATCOs, ground operations, cargo, safety, AAM, and drone ecosystems
    - Establish a Skilling Outcomes Council (MoCA, DGCA, AAI, industry) to oversee delivery, monitor KPIs, and recommend course corrections.
2. **Infrastructure and capacity**
    - Implement the FTO expansion scheme: repurpose under-utilised airstrips into IFR-capable training bases, build hangars and simulator bays, commission instructor training and define maintenance SLAs for trainer fleets
    - Expand simulator capacity aligned to fleet priorities
    - Enable soft-loan windows and PPP financing for trainer aircraft and simulators; consider a type-rating loan-guarantee fund to reduce early-career cost barriers.
3. **Curriculum and technology**
    - Revamp DGCA regulations to permit AR/ VR based training as an alternative for practical hours
    - Establish Centres of Excellence for drones, eVTOL, leasing, AI, and non-conventional fuels
    - Create a national curriculum for AI in aviation, cyber security, data platforms, video analytics with certification pathways for airport and airline roles.
4. **Pathways and recognition**
    - Pursue mutual recognition for training and licensing with partner regulators.
5. **Inclusion and regional access**
    - Scale school outreach to 500+ institutions focused on North-East and tier-2/3 cities, providing counselling, aptitude screening, scholarships, and income-linked loans.
6. **Industry partnership and outcomes governance**
    - Facilitate MoUs between FTOs and airlines for placement pipelines
    - Establish and publish training outcomes annually (placement rates, average time to licence issuance, simulator utilisation, regional coverage) to improve accountability.

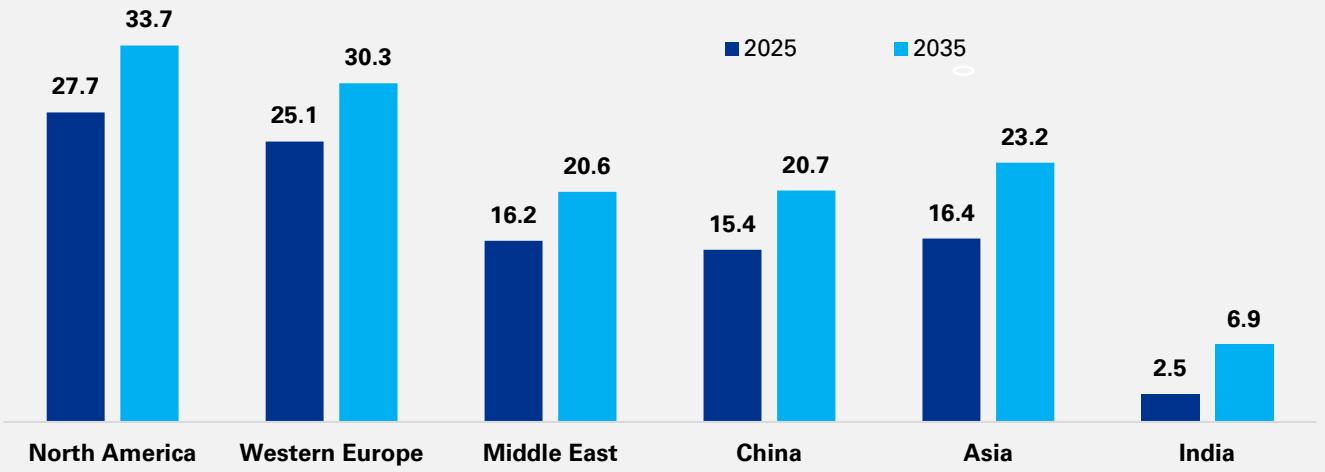
09 Maintenance, Repair and Overhaul (MRO)

Context

Maintenance, Repair and Overhaul (MRO) is a critical pillar of aviation safety and reliability. It ensures airworthiness across line maintenance, base or hangar checks, engines, and components, while influencing lifecycle costs and operational efficiency. Globally, the MRO industry was valued at ~USD 120 billion in 2025 and is projected to reach ~USD 157 billion by 2035 at a CAGR of 3 per cent. In comparison, India's MRO market remains nascent at USD 2.5 billion (about 2 per cent of global share), but it is set to grow faster than the global average, underpinned by fleet expansion and policy support[51].

Recent policy measures have improved cost structures and ease of doing business. Key rationalisations include a uniform 5 per cent IGST[53] on imported aircraft parts, tools and test equipment and extended timelines for export/re-import of aircraft. Infrastructure expansion is underway, with notable developments such as engine MRO facility in Hyderabad and new base maintenance facilities by Indian airlines, expected to be operationalised in the next few years.

Figure 16: MRO Spends by region in USD Billion (2025-2035)[52]



Despite this progress, structural gaps persist. Engine and component segments remain dominated by foreign OEMs, and over 95 per cent of India's engine and component work[54] is still outsourced abroad. Certification recognition is another barrier, with limited mutual acceptance of standards between DGCA and global regulators such as EASA and FAA. While line and base maintenance are increasingly localised, high-value work in engines, avionics and composites continues to flow overseas. This is reflected in the recurring import of MRO services by Indian carriers for engine and component work, contributing to foreign exchange outflows.

The opportunity is significant. With India's fleet projected to grow to 3,000 aircraft[55] by 2047, and with regional positioning as a hub for South Asia, the MRO sector can evolve into a strategic industry. India's MRO market is expected to expand from USD 2.5 billion toward USD 7 billion by 2035[56] at an estimated CAGR of 11 per cent, driven by domestic fleet growth, and policy support. Achieving this requires capability deepening, global certification alignment, infrastructure investment and robust capital access.

Digitalisation and AI will be central to this transformation. Aircraft health monitoring, predictive maintenance, and condition-based interventions are already reducing AOG events and optimising spares inventory. AI-enabled work scoping, manpower planning, and parts forecasting will further compress turnaround times, improve hangar utilisation, and enhance cost predictability. Beyond operational efficiency, MRO expansion is a powerful enabler of skilling and industrial depth. Engine and component maintenance anchor high-skill roles in repair engineering, materials science, and certification, while creating feedback loops into manufacturing and design. By retaining maintenance spend domestically and exporting MRO services regionally, India can convert aviation scale into recurring, high-value services making MRO a critical building block for long-term growth and global competitiveness.

Action points

1. **Policy, certification, and standards**
    - **Certification pathway:** Pursue mutual recognition with BASA/EASA, align DGCA with global Part-145 standards, and fast-track audits for export-ready facilities
    - **Bilateral reciprocity:** Pursue bilateral arrangements with EU, U.S., U.K., Canada, and Australia for cross-validation of approvals, enabling Indian facilities to service foreign-registered aircraft without duplicative certifications
    - **Standard operating procedures:** Issue national SOPs for ferry flights, aircraft induction to MRO, and visas for foreign specialists, with single-window clearances and defined timelines.
2. **Capability and OEM partnerships**
    - **Structured incentives for OEM-licensed repairs:** Create structured incentives to attract engine and component OEM partnerships
    - **Contracting at purchase stage:** Incentivise technology-sharing and local capability development clauses in aircraft and engine purchase contracts.
3. **Infrastructure and clusters**
    - **Engine and component capacity:** Setup engine test cells, APU shops, avionics and composite facilities with shared tooling, bonded logistics, and parts warehousing
    - **Digital maintenance systems:** Support deployment of predictive and AI-enabled maintenance platforms with reliability analytics integrated with airline operations.

10 Leasing

Context

Aircraft acquisition is a highly capital-intensive activity requiring significant capital upfront for delivery. With the lifespan of aircraft being 25-40 years[57], these unit economics demand financing structures that align payments with operational cash flows over time. Leasing provides that alignment. By distributing payments across the lease tenor, it enables timely induction of aircraft without large upfront outlays, preserves balance-sheet flexibility, and allows capacity to be matched to demand and network strategy. This approach has become preferred practice globally, with more than 50 per cent of commercial aircraft on lease[58]. In India, the model is even more prevalent: ~85 per cent[59] of the scheduled fleet is leased.

Leasing demand in India, however, is largely catered by foreign lessors, primarily in Ireland due to its predictable tax regime, investor-friendly legal frameworks, extensive tax treaty network, deep pool of local expertise, etc. The typical average annual lease cost at INR 7–8 crore per aircraft[60], leads to a significant and recurring outflow of foreign exchange, missed opportunities for domestic financial sector growth, and limited control over strategic aviation assets.

With more than 1,700 aircraft[61] on order across leading Indian airlines the scale of inductions provides a major opportunity for the country. Over the next two decades, the addressable market for leasing in India is estimated at ~USD 100 billion[62], contingent on a predictable fiscal and legal framework, competitive funding, and efficient execution.

India has already initiated steps by positioning GIFT IFSC as an aircraft leasing hub, alongside measures to strengthen creditor protection and repossession consistent with the Cape Town framework. Key milestones include:

- 134 aircraft and 84 engines leased via GIFT City (as of Sept 2025)[63]
- Introduction of Protection of Interests in Aircraft Objects Act, 2025, operationalizing the Cape Town Convention to reduce creditor risk by 8-10 per cent
- Tax holiday under Section 80LA (consecutive 10 years within the first 15 years of operation)
- 100 per cent profit linked deduction for capital gains arising on transfer of aircraft by IFSC Unit to any person during tax holiday period provided IFSC Unit operations are commenced before 1 April 2030
- Income-tax/withholding exemption on royalty and interest payable under head lease by IFSC Unit to a non-resident provided IFSC Unit operations are commenced before 1 April 2030
- Capital gains exemption to non-resident shareholder(s) and aircraft leasing IFSC Unit engaged primarily in aircraft leasing business in respect of sale of shares of aircraft leasing IFSC Unit engaged primarily in aircraft leasing business subject to certain conditions provided aircraft leasing IFSC Unit operations are commenced before 1 April 2030
- Dividend payable by aircraft leasing IFSC Unit engaged primarily in aircraft leasing to another aircraft leasing IFSC Unit engaged primarily in aircraft leasing exempt from tax.

While these steps have resulted in tangible progress, India's leasing ecosystem still faces structural challenges which need to be addressed to enable the country to achieve the vision of financing ~ 90 per cent of leased aircraft ordered in India by 2047.

To convert initial traction into sustained scale, India needs a leasing framework that is predictable over the long term, cost-competitive against global hubs, and supported by deep domestic funding. The requirements span fiscal, legal, structural, capital, treaty, and market-development dimensions. The emphasis is on measures that directly affect lease pricing, asset security, and execution certainty.

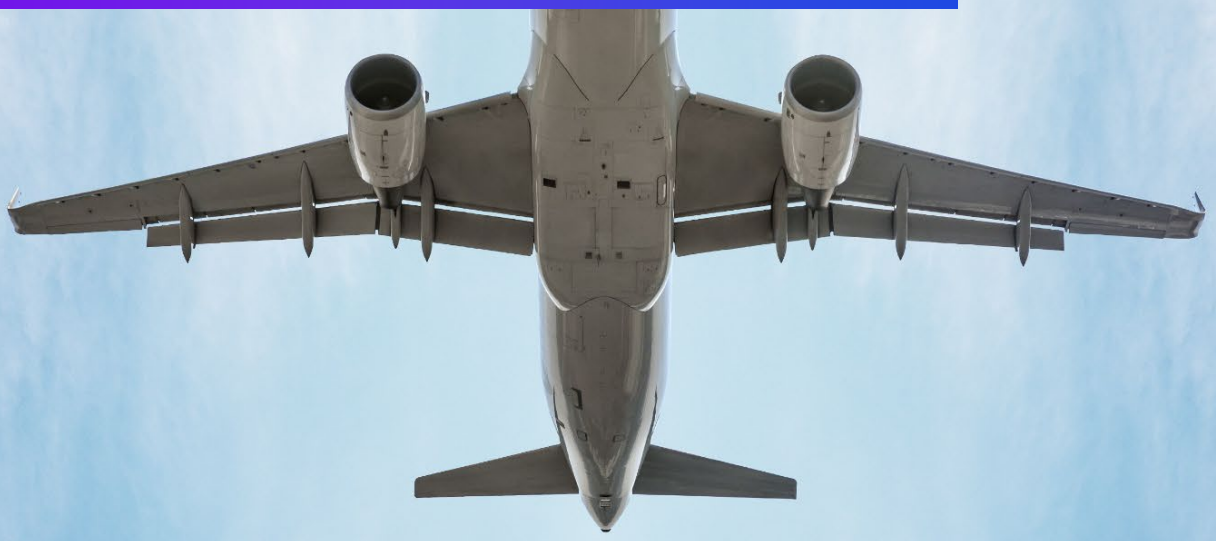
Action points

1. **Capital Access**
   - Include aircraft leased from IFSC in the harmonised infrastructure list to lower capital cost and broaden capital sources.
2. **Policy and fiscal**
   - Amend Section 80LA to increase the period of tax holiday from consecutive 10 years to 15 years out of first 20 years of operations. Alternatively, the tax holiday should be provided to aircraft leasing IFSC Unit for 10 consecutive years out of first 20 years of operations considering that aircraft leasing IFSC units are expected to incur business losses in initial years due to high depreciation rate on aircraft
   - Removal of sunset for (i) claiming exemption on head lease rentals, (ii) non-taxability of profits on sale of aircraft and (iii) non-taxability of gains arising on sale of shares of aircraft leasing IFSC Unit tied to 2030, ensuring usability across typical lease tenors and aircraft lives
   - Notify permanent withholding-tax relief for IFSC lessors for the full lease period, covering operating and finance leases to eliminate cash-flow frictions and reliance on case-by-case certificates
   - Introduce a concessional corporate tax regime at 15 per cent for leasing entities post-holiday, with clear loss set-off and depreciation ordering to reduce uncertainty in early years
   - Grant of income tax exemption on dividends distributed by aircraft leasing units in GIFT IFSC to non resident shareholders, to ensure tax neutrality and global competitiveness

     Such a measure would place GIFT IFSC on par with leading offshore aviation leasing centres, including established jurisdictions such as Ireland, and materially enhance its attractiveness as a preferred location for global aircraft lessors
   - Active measures to resolve legacy income-tax litigation involving aircraft lessors, aimed at establishing a stable, predictable, and investor-friendly tax regime for foreign lessors. Such clarity and certainty would significantly enhance investor confidence and encourage the setting up of aircraft leasing entities in GIFT IFSC, strengthening India's position as a global aviation leasing hub.
3. **Legal and Regulatory**
   - Aircraft leasing is a highly capital intensive business, requiring significant and long term capital commitment to develop a robust leasing ecosystem in GIFT IFSC. Accordingly, foreign investors place paramount importance on a certain, predictable, and non adversarial tax environment when making investment decisions. In this context, an explicit assurance from the Government of India that eligible income tax benefits will not be denied to aircraft lessors on the grounds of alleged lack of economic or commercial substance in IFSC, provided they comply with the prescribed regulatory framework, would bring much needed certainty and confidence to global lessors. Such assurance would positively influence investment decisions, encourage the establishment of substantive operations in GIFT IFSC, and support the development of India as a competitive international aircraft leasing hub.

4. **Structural**
    - Permit bankruptcy-remote SPVs under Companies Act, SEZ rules, IBC and IFSCA regulations for aircraft ownership and asset-backed financing, including non-recourse or limited-recourse structures
    - Make stamp-duty exemption permanent for aircraft transfers, security creation and related documentation within GIFT City to improve ease of doing business over multi-decade horizons.
5. **Others**
    - To incentivise global aircraft lessors to establish leasing entities in GIFT IFSC, the Government of India may consider renegotiating or amending tax treaties with select jurisdictions to ensure that aircraft leasing income arising from IFSC based lessors is not subject to taxation in the source country. Such treaty alignment would ensure tax neutrality, eliminate withholding tax leakage, and make leasing from GIFT IFSC globally competitive on par with established offshore leasing centres, thereby materially enhancing its attractiveness as a preferred jurisdiction for cross border aircraft leasing
    - Enabling fast track liquidation process for aircraft leasing entity in IFSC
    - To promote ease of doing business and support the growth of the IFSC's aircraft leasing sector, IFSC entities specifically engaged in aircraft leasing should be permanently exempted from CSR requirements.

11
The road ahead



India's aviation sector is poised to turn scale into lasting competitiveness. The vision for Viksit Bharat 2047 is a super connected system that links regional India with globally competitive hubs and delivers reliable, low-friction journeys for people and goods. By 2047, the network is estimated to support ~ 1.3 billion passenger journeys with a fleet ~ 3,000 aircraft and more than 400 airports, provided growth is matched by dependable service standards and seamless multimodal access.

Digital modernisation is crucial. A national aviation technology stack to enable secure, real time data exchange across airlines, airports, air navigation, cargo and regulators for system decision making. Artificial intelligence embedded in daily operations to improve maintenance, disruption recovery, resource planning and customer service. Cybersecurity built in by design to protect systems and strengthen public trust.

Capability must deepen alongside fleet growth. Broader participation across design, certification, manufacturing, maintenance and financing is needed so that more value is created and retained within the economy. Maintenance, repair and overhaul should advance into engines and complex components under internationally recognised approvals. A competitive leasing ecosystem at GIFT IFSC with predictable policy, creditor protection and diversified funding will lower capital costs and keep financial value onshore. Air cargo will function as an integrated, fully digitised chain from factory gate to apron cutting dwell time and supporting export-led growth.

Sustainability will be integral. Sustainable Aviation Fuel progress through bankable pathways that align policy signals, investment, certification and feedstock logistics is crucial.

Delivery will depend on clarity of outcomes, transparent performance reporting, stable rules and disciplined execution. Above all, progress will rest on collaboration among government, regulators, industry and academia acting with aligned incentives and shared accountability.

List of Abbreviations

Abbreviation	Expansion
AAI	Airports Authority of India
AAM	Advanced Air Mobility
ACCS	Airport Cargo Community System
AFS	Air Freight Station
AI	Artificial Intelligence
AME	Aircraft Maintenance Engineer
AMS	Aerospace Material Specifications
AOG	Aircraft on Ground
APU	Auxiliary Power Unit
AR/ VR	Augmented Reality/ Virtual Reality
ASTM	American Society for Testing and Materials
ATCO	Air Traffic Controller
ATF	Aviation Turbine Fuel
ATJ	Alcohol-to-Jet
ATM	Air Traffic Management
BASA	Bilateral Aviation Safety Agreement
BCAS	Bureau of Civil Aviation Security
BIS	Bureau of Indian Standards
BPCL	Bharat Petroleum Corporation Limited
CAGR	Compound Annual Growth Rate
CNS	Communication, Navigation and Surveillance
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CPCL	Chennai Petroleum Corporation Limited
CTSQ	Cargo Terminal Service Quality
DGCA	Directorate General of Civil Aviation
DTAA	Double Taxation Avoidance Agreement
EASA	European Union Aviation Safety Agency
ESG	Environmental, Social, and Governance
EU	European Union
FAA	Federal Aviation Administration
FAI	First Article Inspection
FPO	Farmer Producer Organisation
FT	Fischer–Tropsch
FTO	Flying Training Organisation
GAAR	General Anti-Avoidance Rule
GDP	Gross Domestic Product
GIFT City (IFSC)	Gujarat International Finance Tec-City (International Financial Services Centre)
GST	Goods and Services Tax

HEFA	Hydroprocessed Esters and Fatty Acids
HPCL	Hindustan Petroleum Corporation Limited
HS Code	Harmonised System Code
IBC	Insolvency and Bankruptcy Code
ICAO	International Civil Aviation Organization
ICD	Inland Container Depot
ICEGATE	Indian Customs Electronic Gateway
IFR	Instrument Flight Rules
IFSC	International Financial Services Centre
IGST	Integrated Goods and Services Tax
IOCL	Indian Oil Corporation Limited
IoT	Internet of Things
ISO	International Organization for Standardization
KPI	Key Performance Indicator
KTPA	Kilo Tonnes Per Annum
MRO	Maintenance, Repair and Overhaul
MRPL	Mangalore Refinery and Petrochemicals Limited
MRV	Measurement, Reporting and Verification
MSME	Micro, Small, and Medium Enterprises
MSW	Municipal Solid Waste
MoCA	Ministry of Civil Aviation
NADCAP	National Aerospace and Defense Contractors Accreditation Program
NASM	National Aviation Skilling Mission
NCAP	National Civil Aviation Policy
NDT	Non-Destructive Testing
NSOP	Non-Scheduled Operator's Permit
OEM	Original Equipment Manufacturer
OMC	Oil Marketing Company
PM Gati Shakti	National Master Plan for Multimodal Connectivity
PPP	Public-Private Partnership
R&D	Research and Development
RCS (UDAN)	Regional Connectivity Scheme (Ude Desh ka Aam Nagrik)
SAF	Sustainable Aviation Fuel
SEZ	Special Economic Zone
SOP	Standard Operating Procedure
SPV	Special Purpose Vehicle
UCO	Used Cooking Oil
ULIP	Unified Logistics Interface Platform
UTM	Unmanned Traffic Management
VAT	Value Added Tax
VTOL / eVTOL	Vertical Take-Off and Landing / Electric VTOL
WHT	Withholding Tax
WPI	Wholesale Price Index
e-AWB	Electronic Air Waybill
e-SAF (PtL)	Power-to-Liquid Sustainable Aviation Fuel

References

1. Soaring Skies, Thriving Economy: India's Aviation Vision 2047, Press Information Bureau, dated 23.10.2025
2. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
3. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
4. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
5. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
6. Traffic News FY 2024-25, Airports Authority of India, accessed 04.01.2026
7. Traffic News FY 2024-25, Airports Authority of India, accessed 04.01.2026
8. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
9. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
10. Disappointingly Slow Growth in SAF Production, IATA, dated 10.12.2024
11. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
12. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
13. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
14. Airports Authority of India
15. Airports Authority of India
16. Year End Review of Ministry of Civil Aviation, Press Information Bureau, dated 21.01.2026
17. Ministry of Civil Aviation (MoCA), India
18. Airports Authority of India
19. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
20. Union Minister Shri Ram Mohan Naidu Inaugurates Digi Yatra Facility at 9 More Airports, Press Information Bureau, dated 06.09.2024
21. Industry estimates
22. Accelerate growth and innovation with partner ecosystems, KPMG in the U.S., dated 02.25.2025
23. Industry estimates
24. Industry estimates
25. Dubai's First Aerial Taxi Vertiport: Heavy Machinery Powering the Future, Al Marwan Machinery, dated 15.01.2026
26. Secondary research
27. Ministry of Civil Aviation (MoCA), India
28. Ministry of Civil Aviation (MoCA), India
29. Bengaluru Airport to Electronics City in just 19 minutes: Electric flying taxis to launch soon with Rs 1,700 fare, Economics Times, dated 17.10.2025
30. Non-CO2 Emissions and Effects, IATA, accessed 09.01.2026
31. Aviation may account for 20% of global emissions by 2050 without action, Institute of Sustainability & Environmental Professionals, accessed 30.12.2025
32. Emission Reduction Targets for International Aviation and Shipping, European Parliament
33. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
34. Disappointingly Slow Growth in SAF Production, IATA, dated 10.12.2024
35. Industry estimates

36. Sustainable Aviation Fuel (SAF) a practical and immediate solution to decarbonize the aviation sector , says Union Minister Ram Mohan Naidu, Press Information Bureau, dated 03.09.2025 2
37. Feasibility Study on the use of Sustainable Aviation Fuels in India, ICAO, accessed 12.12.2025
38. India Used Cooking Oil Market to Reach 4.4 Million Tons by 2033, Impelled by Rising Environmental Consciousness, IMARC, dated 12.02.2025
39. India: State-wise details of ethanol distilleries, annual production capacity, and ethanol supplied during ESY 2021-22 to 2024-25, Chini Mandi, authored by Prakash Jha, dated 09.08.2025
40. Industry estimates
41. Traffic News FY 2024-25, Airports Authority of India, accessed 04.01.2026
42. Traffic News FY 2024-25, Airports Authority of India, accessed 04.01.2026
43. Fast Tracking Freight in India, Niti Aayog-RMI, dated June 2021
44. Industry estimates
45. Industry estimates
46. Soaring Skies, Thriving Economy: India's Aviation Vision 2047, Press Information Bureau, dated 23.10.2025
47. Industry estimates
48. Industry estimates
49. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
50. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
51. Global Fleet and MRO Market Forecast 2025-2035, Oliver Wyman, accessed 05.01.2026
52. Global Fleet and MRO Market Forecast 2025-2035, Oliver Wyman, accessed 05.01.2026
53. India Aims to Become Leading Aviation Hub with $4 Billion MRO Industry by 2030" - Union Minister Shri Rammohan Naidu, Press Information Bureau, dated 15.07.2024
54. Industry estimates
55. Connecting India to the World in Amrit Kaal, KPMG in India-FICCI Report, accessed 06.01.2026
56. Global Fleet and MRO Market Forecast 2025-2035, Oliver Wyman, accessed 05.01.2026
57. Industry estimates
58. Industry estimates
59. Air India Taps GIFT City Subsidiary for $300 Mn Payment to Aircraft Lessors, Outlook Business, dated 17.04.2025
60. Industry estimates
61. Airbus and Boeing Orders and Deliveries
62. Industry estimates
63. IFSCA Bulletin | July to September 2025, IFSCA, dated 17.11.2025

About KPMG in India

About KPMG in India

KPMG entities in India, are professional services firm(s). These Indian member firms are affiliated with KPMG International Limited. KPMG was established in India in August 1993. Our professionals leverage the global network of firms, and are conversant with local laws, regulations, markets and competition. KPMG has offices across India in Ahmedabad, Bengaluru, Calicut, Chandigarh, Chennai, Delhi, Gandhinagar, Gurugram, Hyderabad, Jaipur, Kochi, Kolkata, Mumbai, Noida, Pune, Raipur, Trivandrum, Vadodara and Vijayawada.

KPMG entities in India offer services to national and international clients in India across sectors. We strive to provide rapid, performance-based, industry-focussed and technology-enabled services, which reflect a shared knowledge of global and local industries and our experience of the Indian business environment.

KPMG in India's aviation practice works with the entire spectrum of clients ranging from government, regulators, airlines, airports, air cargo, aircraft manufacturers, MRO, and aviation institutes. It has a mix of business consultants and industry professionals assisting clients in areas like policy, strategy, AI, digital, transformation, transaction, finance, IT, operations, and people issues.

Acknowledgements:

We extend our deepest gratitude to the following members from KPMG in India for their collective efforts, collaboration and valuable contribution in preparing this report. The final work stands as a testament to the strength of shared thinking and a unified commitment to paving the future of aviation in Viksit Bharat @ 2047.

KPMG in India team

Research and content development:

- **Dhaval Raut,** Director, KPMG in India
- **Nupur Sarraf,** Associate Director, KPMG in India
- **Rahul Singh,** Associate Director, KPMG in India
- **Siddharth Malhotra,** Manager, KPMG in India
- **Ann Roy,** Analyst, KPMG in India

Design and compliance:

- **Angeeta Baweja,** KPMG in India
- **Mahima Sharma,** KPMG in India
- **Pooja Patel,** KPMG in India

About FICCI

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialisation, and its emergence as one of the most rapidly growing global economies.

A non-government, not-for-profit organisation, FICCI is the voice of India's business and industry. From influencing policy to encouraging debate and engaging with policymakers and civil society, FICCI articulates the views and concerns of industry. It serves its members from the Indian private and public corporate sectors and multinational companies, drawing its strength from diverse regional chambers of commerce and industry across states, and reaching out to over 2,50,000 companies.

FICCI provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policymakers and the international business community.

KPMG in India contacts:

Akhilesh Tuteja
Head – Clients & Markets
E: atuteja@kpmg.com

Jodhbir Singh Sachdeva
Associate Partner
Aviation
E: jodhbir@kpmg.com

kpmg.com/in

FICCI contacts:

Manoj Mehta
Assistant Secretary General
E: manoj.mehta@ficci.com

Rohan Bailwal
Assistant Director
E: rohan.bailwal@ficci.com

Access our latest insights on KPMG Insights Edge

Follow us on:
kpmg.com/in/socialmedia

KPMG Assurance and Consulting Services LLP, Lodha Excelus, Apollo Mills Compound, NM Joshi Marg, Mahalaxmi, Mumbai – 400 011 Phone: +91 22 3989 6000, Fax: +91 22 3983 6000.