FICCI

Asia's largest event on Civil Aviation
(Commercial, General and Business Aviation)

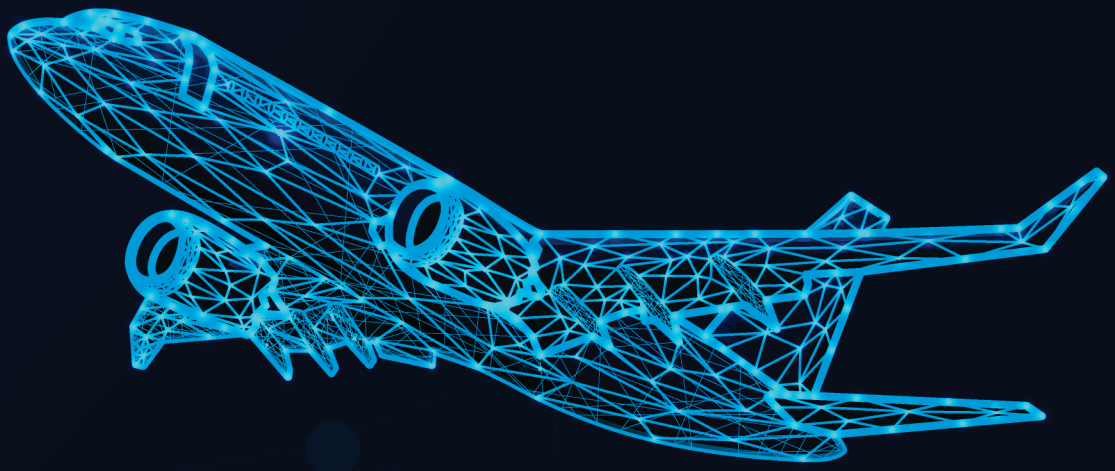
WINGS INDIA 2024

18th - 21st January 2024
Begumpet Airport, Hyderabad, India

KPMG

CONNECTING INDIA TO THE WORLD IN AMRIT KAAL

SETTING THE STAGE FOR INDIAN CIVIL AVIATION @2047





ज्योतिरादित्य मा. सिंधिया
JYOTIRADITYA M. SCINDIA

सत्यमेव जयते

नागर विमानन एवं इस्पात मंत्री
भारत सरकार
Minister of Civil Aviation and Steel
Government of India



MESSAGE

India's aviation story is one of resilience, growth, and innovation. From the hustle and bustle of domestic airports to the seamless connectivity on international routes, our aviation landscape reflects the dynamic spirit of a nation on the move.

Our commitment is clear: to create an aviation ecosystem that is robust, efficient, and globally competitive. We are investing in cutting-edge technology, modernizing infrastructure, and implementing policies that encourage innovation and sustainability while also facilitating societal development giving wings to the millions of aspirations.

Wings India 2024, the very embodiment of this commitment, brings together the brightest minds – government leaders, industry experts, the most advanced technologies, and the most ambitious visions for the future. It is a platform where ideas take flight, partnerships are forged, and the pulse of the global aviation industry is felt.

India is world third largest aviation market and one of the fastest growing markets in the world. It is truly incredible that the domestic airlines boasted a record of 13 million passengers in March 2023, up by over 11% compared to the same month of 2018 and 2019, as per the Directorate General of Civil Aviation data.

The aviation industry plays a pivotal role in strengthening the tourism sector, bolstering local industries and promoting cultural exchanges. Around 43.80 lakh foreign tourists arrived in India during January-June 2023 – a 106% increase from 21.24 lakh during the same period in 2022.

The Government of India's novel policies such as the "**Regional Connectivity Scheme" or the UDAN scheme, the Drone Policy, MRO Policy, FTO Policy and initiatives like Digi Yatra** among others have simplified the lives of ordinary citizens and also provided easy travel to international visitors. I believe the philosophy of "**Vasudhaiva Kutumbakam**" or "the world is one family" truly epitomizes the objectives of civil aviation-connecting the world as one family while addressing the local aspirations of ordinary citizens to fly. The Ministry of Civil Aviation, Government of India remains committed to fostering a favourable environment for the aviation industry to flourish and promote sustainable growth while simultaneously, ensuring the highest standards of safety, efficiency and passenger satisfaction.

I am confident that "Wings India 2024" will help further the objectives of the Government of India and its commitment to transform the lives of people by providing a platform to global dignitaries, representatives from the Government of India and State Governments, industry captains & leaders and all the stakeholders from the aviation eco system.

I look forward to seeing all the stakeholders at "Wings India 2024" and hope to see it evolve as a key instrument in promoting global connections and creating a space for national and international collaboration.

(Jyotiraditya M. Scindia)

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

जनरल (डॉ.) विजय कुमार सिंह
पीवीएसएम, एवीएसएम, वाईएसएम (से.नि.)
GEN. (DR.) VIJAY KUMAR SINGH
PVSM, AVSM, YSM (Retd)

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

राज्य मंत्री
नागर विमानन;
सड़क परिवहन एवं राजमार्ग,
भारत सरकार
Minister of State for
Civil Aviation;
Road Transport and Highways,
Government of India



Message

The Indian civil aviation sector is one of the important sectors to propel the economy and the GDP of the country. As we step towards a new financial year in 2024, the aviation industry despite the challenges will continue to grow. The government is ensuring that suitable eco system is created to help this growth. Wings India 2024 a joint initiative of Ministry of Civil Aviation (MoCA), Government of India, Airports Authority of India in association with Federation of Indian Chambers of Commerce and Industry (FICCI) contributes to cooperation and engagement in the civil aviation sector, bringing the Indian industry to the forefront while creating global opportunities for all stakeholders.

Wings India 2024 is themed "**Connecting India to the world in Amrit Kaal: Setting the stage for Indian Civil Aviation at 2047"** is going to be the most apt platform for all the key stakeholders in the civil aviation to interact, engage, foster collaboration and work together. The event will provide an opportunity to discuss, debate, deliberate, exchange ideas, and insights to pave the way for fruitful outcomes that shape the future of the civil aviation industry.

As we start the year 2024, I am confident Wings India will set the stage for the Indian civil aviation and global aviation industry to cooperate and work which will benefit all the participants in the times to come.

I wish the event a grand success!

[General (Dr.) Vijay Kumar Singh (Retd.)]

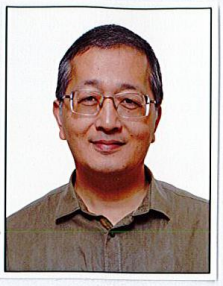
Ministry of Civil Aviation, Room No.-360, B-Block, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi-110003
Office Tel. : +91-11-24627231, 24626001; E-mail : mos.moca@gov.in, Web : www.civilaviation.gov.in
Ministry of Road Transport & Highways, Transport Bhawan, 1, Sansad Marg, New Delhi-110 001
Office Tel. : +91-11-23731522, 23715159; Fax : +91-11-23718568, E-mail : vks-mosrth@gov.in, Web : http://www.morth.nic.in,

वुमलुनमांग वुअलनाम, भा.प्र.से.
Vumlunmang Vualnam, IAS

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

सचिव
नागर विमानन् मंत्रालय
भारत सरकार
नई दिल्ली-110 003
SECRETARY
MINISTRY OF CIVIL AVIATION
GOVERNMENT OF INDIA
NEW DELHI-110 003



Message

Indian aviation sector continues to play a significant role in India's growth story and has evolved to become the third largest domestic aviation market in the world. This sector creates several positive externalities and ripple effects having forward and backward linkages for sectors such as trade, tourism, industry, services while having a positive impact on the macro indicators of employment, jobs, and the economic output.

Government of India is focused on economic growth along with providing ease of access to public services while focusing on sectoral growth, inclusive development, and social welfare. The different schemes on civil aviation that focus on regional connectivity such as RCS UDAN, NABH (Nextgen Airports for Bharat), Drone Shakti, the PM Gati Shakti, Maintenance, Repairing, and Overhaul (MRO), progress made towards sustainable aviation fuels (SAFs) are paving the future of aviation in India.

Wings India 2024 – Asia's pivotal and the largest civil aviation event will highlight government and private sector initiatives which will nurture the domestic and international civil aviation space.

I welcome all the participants of Wings India 2024 and laud the efforts of all the stakeholders in the aviation space, State Governments, and business leaders as they foster partnerships and collaborations with relevant stakeholders.

I wish Wings India 2024 a big success! Ude desh ka aam nagrik.

10-1-2024
(Vumlunmang Vualnam)

B-BLOCK, RAJIV GANDHI BHAWAN, SAFDARJUNG AIRPORT, NEW DELHI-110003
TEL. : 011-24610358, 24610368, FAX : 91-11-24602397, 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
W: www.ficci.com
CIN : U99999DL 1956NPL002635
ISO 9001 : 2008 Certified

Mr. Rémi Maillard
Chairman, FICCI Civil Aviation Committee and
President and MD, Airbus India & South Asia



MESSAGE

The Indian aviation industry is thriving and is playing a predominant role in global connectivity. The aviation sector provides the necessary forward and backward linkages to several sectors – industry, trade, tourism, while also facilitating cultural exchanges and fostering people to people ties. The aviation sector acts as an important engine of growth to the Indian and the global economy. Connecting the diaspora to the rest of the world, being at the forefront of evacuation operations and providing humanitarian assistance – the Indian aviation sector has also been at the helm of public service contributing to both societal and economic development.

As the fastest growing commercial aviation market in the world, India is today a leading growth engine for the sector globally. Airlines in India are boosting their fleet and operations, aviation infrastructure such as airports and heliports is expanding and focus is growing on developing the complete aerospace ecosystem with local manufacturing, MROs, pilot and maintenance training schools and a successful leasing industry.

Much of this has been enabled by the Government of India's supportive policies. It has been committed to strengthening the aviation industry with policy initiatives focused on enhancing the efficiency of the sector, improving public service delivery, minimizing grievances of passengers, and enhancing convenience while also focusing on aviation infrastructure, technical innovations and state of the art practices needed to modernize the aviation industry.

I am confident that the Knowledge Report of Wings India 2024 will present the readers with a clear perspective of the Indian aviation space and will provide a good repository of the highlights and glimpses of Wings India 2024. The report will also act as a guiding document to the different stakeholders in the aviation ecosystem and will serve as a ready reckoner to anyone interested in understanding the dynamics of the global aviation space.

I wish Wings India 2024 great success.

(Rémi Maillard)

Industry's Voice for Policy Change

Foreword





Manoj Mehta,
Senior Director &
Head - Civil Aviation, FICCI
Manoj.mehta@ficci.com

Jodhbir S Sachdeva,
As. Partner, KPMG
Airports Lead
jodhbir@kpmg.com

The aviation sector has been a driving force in India's economic landscape, fostering prosperity and offering employment opportunities to millions. As a crucial component of national development, aviation enhances the overall well-being of citizens and bolsters various industries. The sector's significance is underscored by its ability to elevate living standards and contribute significantly to economic growth.

Driven by a surge in demand, both domestically and internationally, the aviation industry has soared to new heights. A robust domestic market, coupled with a steady increase in global connectivity, has propelled the sector forward. The government's strategic initiatives, aimed at streamlining operations and positioning India as a global aviation hub, are poised to bring about transformative changes.

The growth of aviation in India is closely linked to India's economic growth in *Amrit Kaal*. This is in line with the Hon'ble Prime Minister's *Panch Pran* target of transforming India into a developed country by its 100th year of independence. With a growing economy, rising incomes, supportive policy environment and intense competition among airlines, India's aviation growth story is likely to continue. The rapid expansion in India's airport and air navigation infrastructure and growth in leasing, MRO and skill development will fuel it further. India's commitment to a sustainable growth, supported by development of mega future-ready airports and airlines, innovation and quantum leaps in emerging technologies are key pillars for achieving global leadership. In *Amrit Kaal*, India aspires to take a pivotal position in the global aviation connecting the world through India.

Flagship programs designed to enhance connectivity and ease of doing business in aviation reflect the government's commitment to fostering a conducive environment for growth. By fostering collaborations between the public and private sectors, India's aviation industry is poised to overcome challenges and chart a trajectory towards sustained, long-term prosperity.

The aspiration for India's leadership in aviation during Amrit Kaal is only as good as its execution. The policy makers, industry and academia will need to work closely together. With the right policies and a relentless focus on execution, India can achieve its aspirations for aviation in Amrit Kaal.

Table of Contents

1	**Executive Summary**	9
2	**Air Traffic Demand**	13
2.1	Growth prospects	13
2.2	Passenger traffic estimates	14
2.3	Action Points	15
3	**Airports**	18
3.1	Action Points	19
4	**Airlines**	22
4.1	Mega Carriers	23
4.2	Action Points	23
5	**MRO and Leasing**	26
5.1	MRO	26
5.2	Leasing	27
6	**Advanced Air Mobility**	29
6.1	Drones	29
6.2	e-VTOLS	29
6.3	Action Points	30
7	**Air Cargo**	32
7.1	Overview	32
8	**The Road Ahead**	35
About KPMG		36
About FICCI		37

1. Executive Summary



1 Executive Summary

The Indian aviation sector is showing substantial growth, with a remarkable 20.6% year-on-year increase in total air passenger traffic from April-October 2023[1]. This surge has exceeded the levels observed during the same period in 2019/FY20[2] (pre covid) showcasing resilience and robust growth supported by progressive government policies. In contrast, the global air passenger traffic is expected to recover to pre covid levels by the year 2024[3], emphasizing the robust growth trajectory of the Indian aviation market.

As we chart a course towards the year 2047, this report envisions India's aspirations in aviation, highlighting key areas that will define our ascent to global prominence. This release outlines strategic action points, emphasizing India's commitment to a sustainable growth, supported by development of mega future-ready airports and airlines, innovation, quantum leaps and achieving global leadership.

The growth of aviation in India is closely linked to India's economic growth in *Amrit Kaal*. This is in line with the Hon'ble Prime Minister's *Panch Pran* target of transforming India into a developed country by its 100th year of independence. Additionally, the Finance Minister in her Budget 2023 speech emphasized on the seven priorities or the *Saptarishi* with infrastructure and investments being one of the seven priorities.

The Ministry of Civil Aviation has taken significant steps to enable growth of aviation in India. Strategic initiatives such as UDAN (*Ude Desh ka Aam Nagrik*) scheme, along with programs like *Digi Yatra* are bringing significant changes within the aviation landscape. Drone Rules, FTO guidelines, and tax reforms in Maintenance, Repair and Overhaul (MRO) and aircraft leasing are driving new businesses and growth. Tax structure for Aviation Turbine Fuel (ATF) is being aligned with leading global jurisdictions, bringing a more supportive environment for overall growth for the Indian aviation sector. Many Indian states have proactively reduced VAT[4] on ATF to 1-4%, thus supporting in strengthening the overall airline economics. UDAN (Ude Desh ka Aam Nagrik) scheme has been a key catalyst in adding connectivity to smaller cities/ remote regions of the country and supporting in making flying accessible to a broader population and fostering economic development. With 517 routes by November'2023, UDAN has benefitted more than 131 lakh passengers on more than 250,300 flights.

India's economic growth in *Amrit Kaal*, enhanced domestic and global connectivity, increase in urbanization and a growing middle class would drive growth in aviation. The total air passengers[5] in 2047 is estimated to grow more than six-fold to around 1.3 billion. Indian airlines have placed the largest fleet order globally and the commercial fleet is expected to increase to ~3,500 by 2047.

The evolution of Indian airlines into mega carriers is strategic in supporting the Government's vision of making India as the largest aviation market by the year 2047[6]. This transformation with enhanced and well-developed hub structures supported efficiently by Indian hub airports would connect the world through India.

---

[1] Airports Authority of India - https://www.aai.aero/, Years in the documents are Financial Years unless specified

[2] Airport Authority of India - https://www.aai.aero/

[3] Secondary Research - https://aci.aero/2023/09/27/global-passenger-traffic-expected-to-recover-by-2024-and-reach-9-4-billion-passengers/#:~:text=The%20year%202024%20is%20expected,%25%20of%20the%202019%20level).

[4] Secondary Research - https://sansad.in/getFile/loksabhaquestions/annex/1710/AU1423.pdf?source=pqals#:~:text=As%20a%20result%20of%20these,x)%20Dadra%20%26%20Nagar%20Haveli%20and

[5] Total Air Passengers is this document refers to total Air Trips

[6] Secondary Research - https://pib.gov.in/PressReleasePage.aspx?PRID=1925480#:~:text=Sharing%20his%20thoughts%20on%20the,largest%20domestic%20market%2Feighteenth%20largest

India is home to some of the world's best airports. The segment has seen major capacity augmentation in the last decade with development of multi-airport cities and with ~150 airports in the country. The capacity augmentation of airports will need to match the growth in traffic and requirement of hub airports. An estimated ~250 additional airports will be required by 2047, with ~30 cities with existing airports requiring a new airport.

The growth in passenger traffic and aircraft fleet presents attractive opportunity for adjacencies in MRO and leasing segments. MoCA has taken landmark steps in addressing past challenges and accelerating growth of these segments.

India has immense potential to capitalize on growth in aircraft fleet and leverage its R&D capabilities to create a robust MRO industry. Additionally, its strategic location, low labor cost, and a push for *Atmanirbhar Bharat* further makes it ideal destination for an MRO ecosystem. Rationalization of taxes and attractive MRO policies by states have been instrumental in giving a push for growth of MROs in the country. MROs in India have enhanced their capacities in traditional segments such as airframes and the industry is branching to other MRO segments such as engines in collaboration with global OEMs. India has potential to be a leader in MRO catering to ~90% of India's demand for MRO services locally within the country by 2047.

Air India recently acquired its first A350-900 aircraft via a finance lease transaction through International Financial Services Center (IFSC) at GIFT City. This is a landmark step for aircraft leasing in India and will go a long way in developing India as a preferred destination for aircraft leasing. Major Indian airlines are planning to set-up leasing units in GIFT city. India with its own aircraft leasing industry is expected to finance ~90% of leased aircraft being ordered in India by the year 2047. At present around 80% of the fleet with Indian commercial airlines is on lease[7], compared to 53% globally. With Indian airlines ordering large number of aircraft, this is a golden opportunity for developing a global leasing hub in India.

Air cargo is expected to grow by 6-fold to 21 MMT by year 2047 from 2023 levels. Cargo processing will be completely paperless and dwell times considerably reduced to just 1-2 hours. India's freighter fleet is also estimated to expand multifold with the growth in e-commerce. Improved and focused approach in integrating rail, road, and waterways to improve multimodal connectivity to the airports is critical. The launch of PM Gati Shakti National Masterplan offers a comprehensive, interdisciplinary approach to develop logistics ecosystem in India. With a clear focus on developing transshipment hub/s, India has the potential to become a transshipment hub for entire South Asia.

Government plans to make India as the Drone manufacturing and services hub.[8] With the support of MoCA, drones have found its usage in industries such as defence, agriculture, power, security, public services, mining etc. The development of Electric – Vertical Takeoff and Landing aircrafts (e-VTOL) in India can revolutionize passenger and cargo travel. This technology has the potential to disrupt urban mobility for the better by reducing traffic congestion, carbon emissions and journey times. E-VTOL's can also benefit the cargo industry by being able to maximize payloads for short and long-distance deliveries. The commercial adoption of E-VTOL's is still under way and subject to multiple levels of approvals and regulations set by government entities. India potentially has a large e-VTOL market due to its growing cities, population and high intra city travel. An estimated ~25,000 eVToLs could be in operations in India by 2047.

Ground handling and airport operations will be highly automated and driven by electric ground support equipment. Check-in, bag drop, immigration clearance, retail shopping etc.

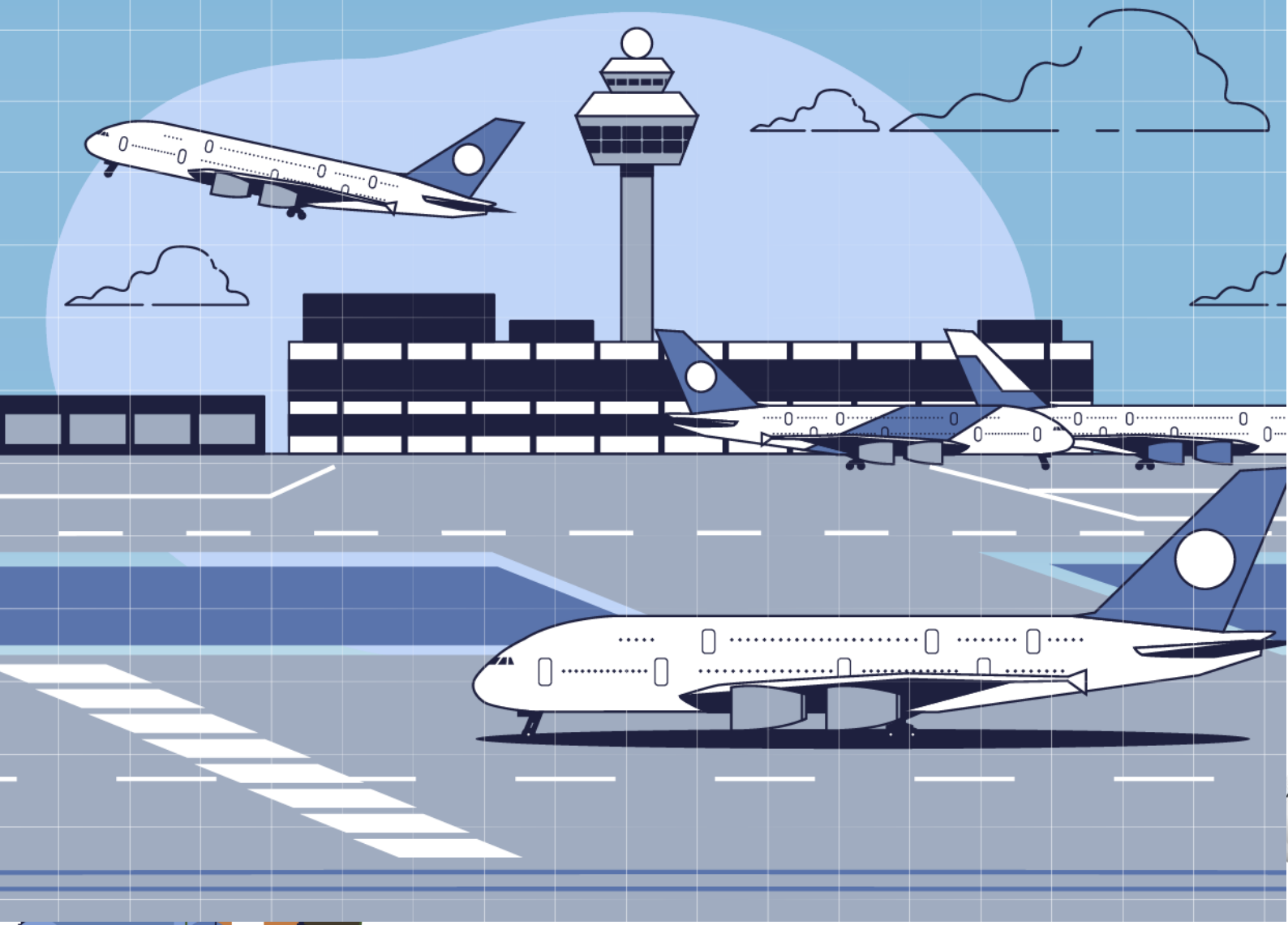
[7] Secondary Research

[8] Secondary Research - https://www.businesstoday.in/industry/story/we-are-keen-to-promote-india-as-a-major-evtol-manufacturing-hub-scindia-345885-2022-08-29

will be automated, with minimal human intervention. Indian airports and airlines will invest heavily in new technologies including AI and ML which will enable integration of different safety and security data sets such as security camera feeds, facial recognition, luggage scans, security incident reports etc. India will witness a massive upgrade of its aviation education and skilling infrastructure. Its affordable and high-quality aviation education system will attract students from across the globe.

India's aspirations in aviation during Amrit Kaal are only as good as their execution. A duly empowered Task Force for defining targets, strategic growth initiatives and monitoring mechanisms will need to be established at MoCA. The policy makers, industry and academia will need to work closely together to achieve this. With the right policies and a relentless focus on execution, India can achieve its aspirations in aviation during Amrit Kaal.

2. Air traffic demand

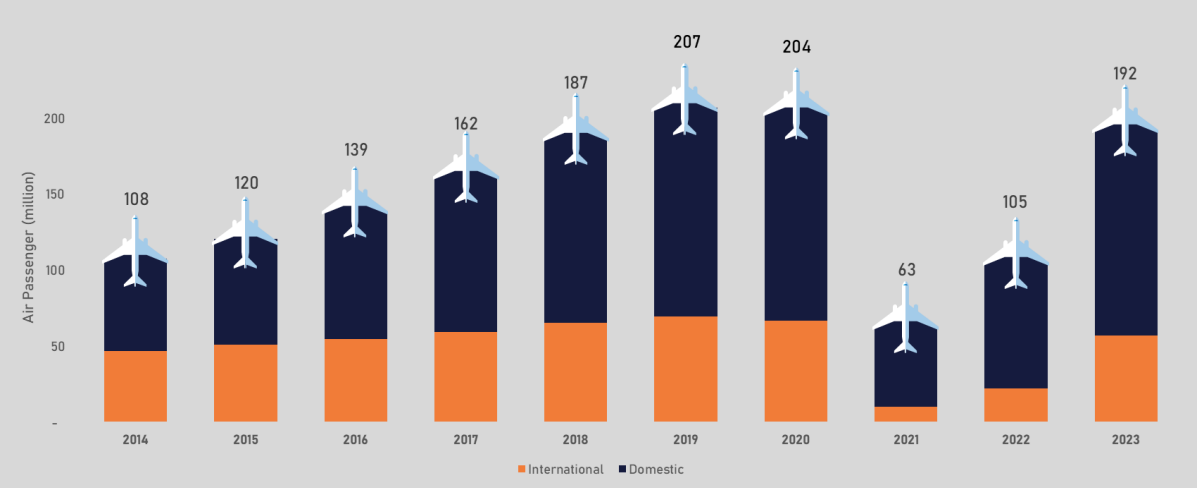


2 Air Traffic Demand

The Indian aviation sector is showing substantial growth, with a remarkable 20.6% year-on-year increase in total air passenger traffic from April-October 2023[9]. This surge has exceeded the levels observed during the same period in 2019/FY20[10] (pre covid) showcasing resilience and robust growth supported by progressive government policies. In contrast, the global air passenger traffic is expected to recover to pre covid levels by the year 2024[11], emphasizing the exceptional growth trajectory of the Indian aviation market.

The unprecedented growth being witnessed in the Indian aviation market during the past decade (excluding Covid-19 impact), though impressive, is significantly lower than its untapped potential. A nation of ~1.4 billion people, with a growing middle class of over 350 million should be flying by some estimates, over 700 million passengers per annum. The current passenger air traffic is a fraction of the potential indicating a large headroom for growth and a latent demand for travel. Government initiatives like UDAN (Ude Desh Ka Aam Nagrik) and development of regional airports to enhance regional connectivity are important steps to bring air travel to the masses.

Figure 1 : India Air Passengers



2.1 Growth prospects

The civil aviation industry is vulnerable to several intrinsic and extraneous risks. These include economic boom and bust cycles, volatility in oil price and exchange rates, natural disasters, epidemics, infrastructure challenges, protectionism, wars and political upheavals etc. The Indian civil aviation industry has managed to exhibit significant resilience against these risks over the last two decades. Some of the key reasons behind the rapid growth of the Indian aviation sector include:

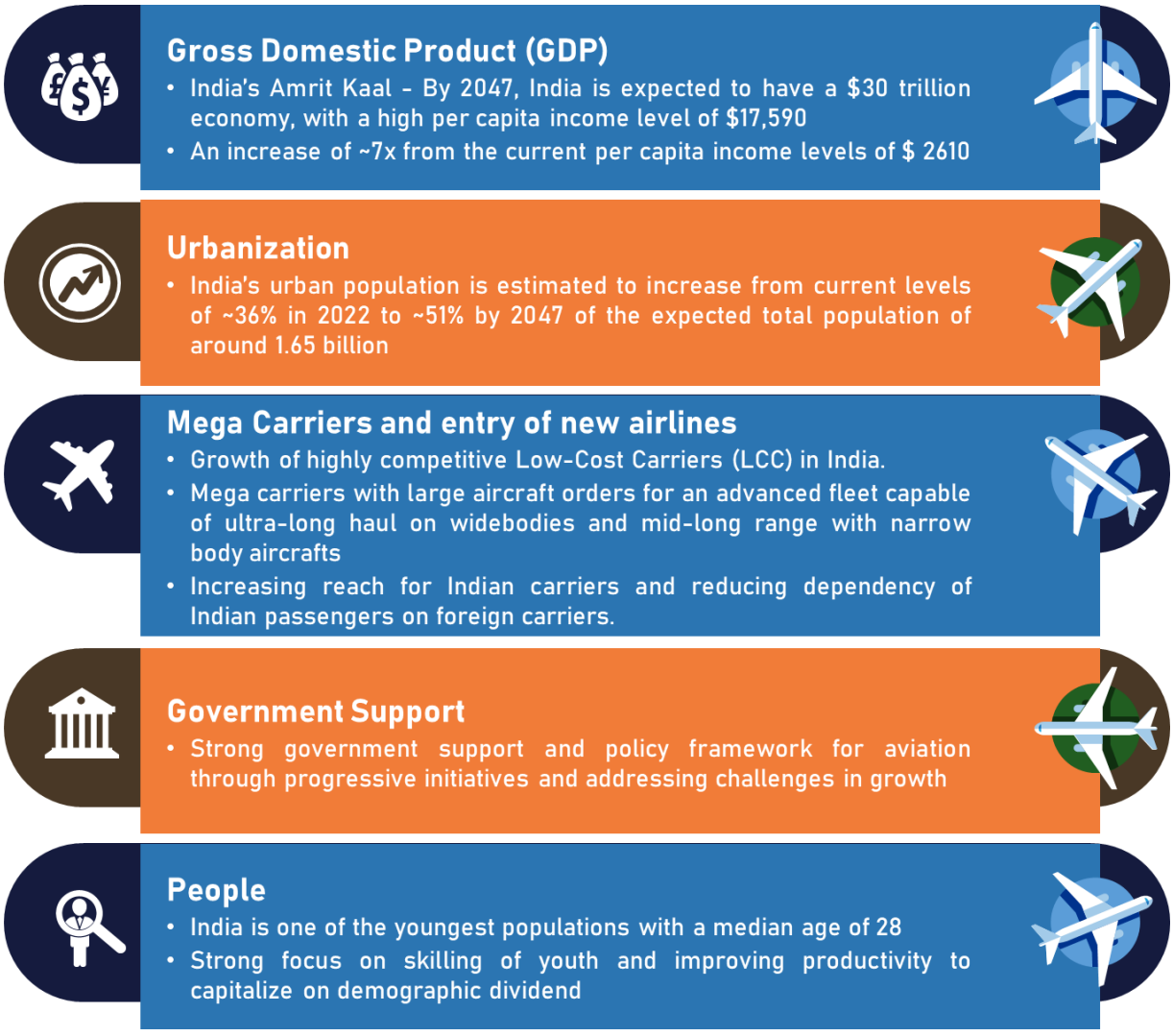
a. Steady growth in the Indian economy which is expected to grow robustly in India's *Amrit Kaal*.
b. Supportive policies and an open market which allows new airlines to freely enter the domestic market subject to stipulated norms.
c. Partial open skies in international routes with India's neighboring countries and those outside a 5000 km radius

[9] Airports Authority of India - https://www.aai.aero/, Years in the documents are Financial Years unless specified

[10] Airport Authority of India - https://www.aai.aero/

[11] Secondary Research - https://aci.aero/2023/09/27/global-passenger-traffic-expected-to-recover-by-2024-and-reach-9-4-billion-passengers/#:~:text=The%20year%202024%20is%20expected,%25%20of%20the%202019%20level).

d. Growth of highly competitive Low Cost Carriers (LCC) in India
e. Ability to leverage private capital and expertise in development of airports to ensure augmentation of airport capacity with passenger demand. Example: Development and operation of leading airports at Delhi, Mumbai, Bengaluru etc. through the Public Private Partnership (PPP) with many in pipeline such as Noida and Navi Mumbai.
f. Formulation of the industry-friendly policies, schemes and regulations such as National Civil Aviation Policy 2016 (NCAP 2016), UDAN scheme, drone rules, MROs, leasing etc.
g. Clear intent of the government to leverage strengths of private sector by way of privatization of national carrier Air India and operation of large government-owned airports through PPP.



2.2 Passenger traffic estimates

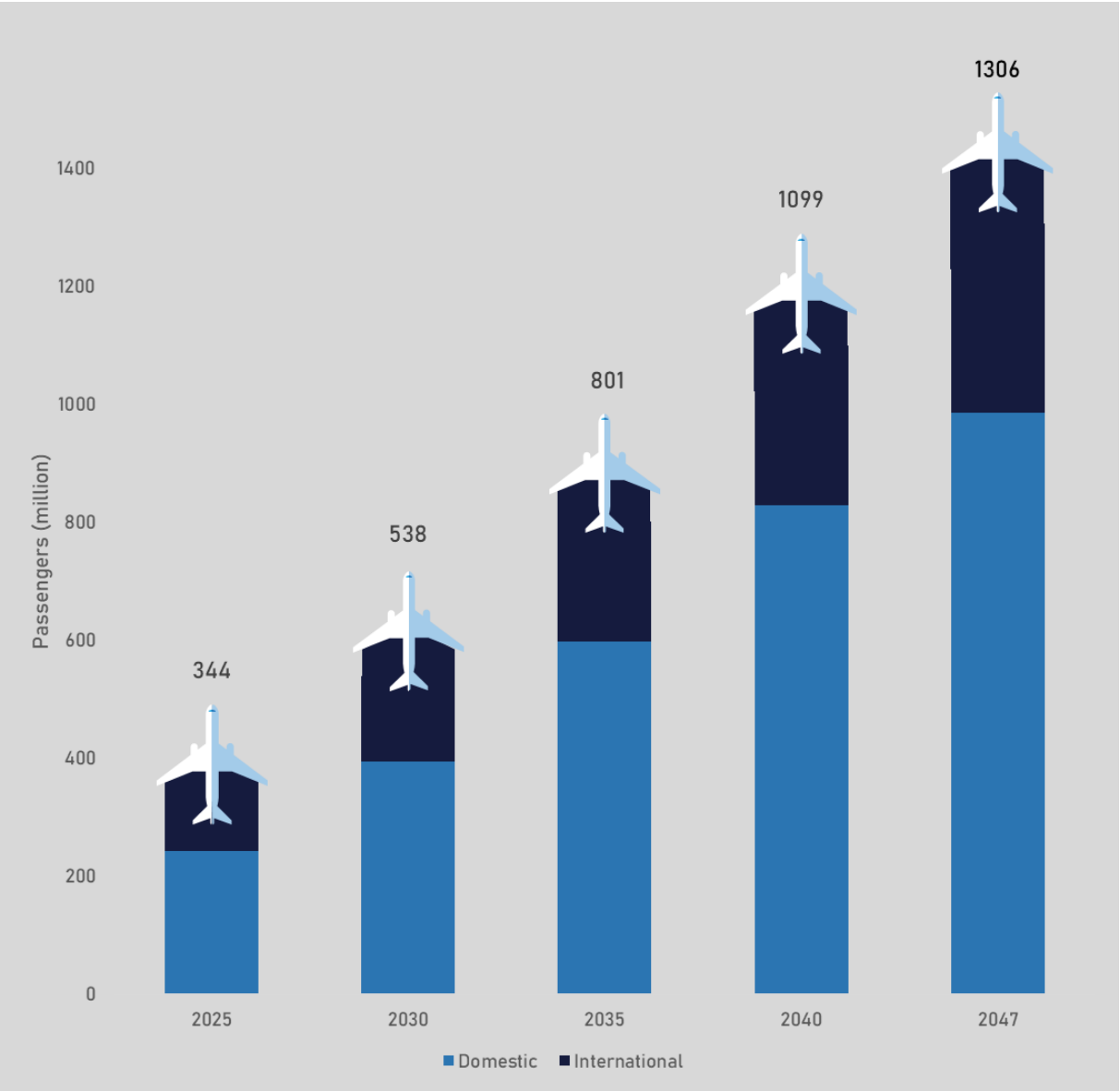
Many industry organizations have forecasted estimates of passenger traffic in India over the next 2 – 3 decades. The forecasts range from 1.1 bn to 1.3 bn by 2047. While there are variations in forecasts, the consistent trend is towards a high growth phase for aviation in India during this period.

Given growth of Indian in *Amrit Kaal*, the untapped potential of Indian aviation market and significant reforms being driven by the government, the projections are eminently achievable. These are of course predicated on the assumption that volatility in oil prices, geo-political events, and exchange rate will be within a reasonable range and the constraints

in terms of policies, taxation, infrastructure and ease of doing business shall be addressed on priority.

A snapshot of air traffic estimates is provided below. It is estimated that India's air passengers will increase to 1.3 billion annual passengers by 2047, highlighting a strong annual growth of 6.8% from 2019.

Figure 2 – Estimated air passengers



2.3 Action Points

Investments in augmenting airport infrastructure are imperative to achieve the traffic potential. Use of technology with simplified processes to remove bottlenecks while augmenting capacity is necessary to accommodate expected increase in demand and help elevate passenger experience.

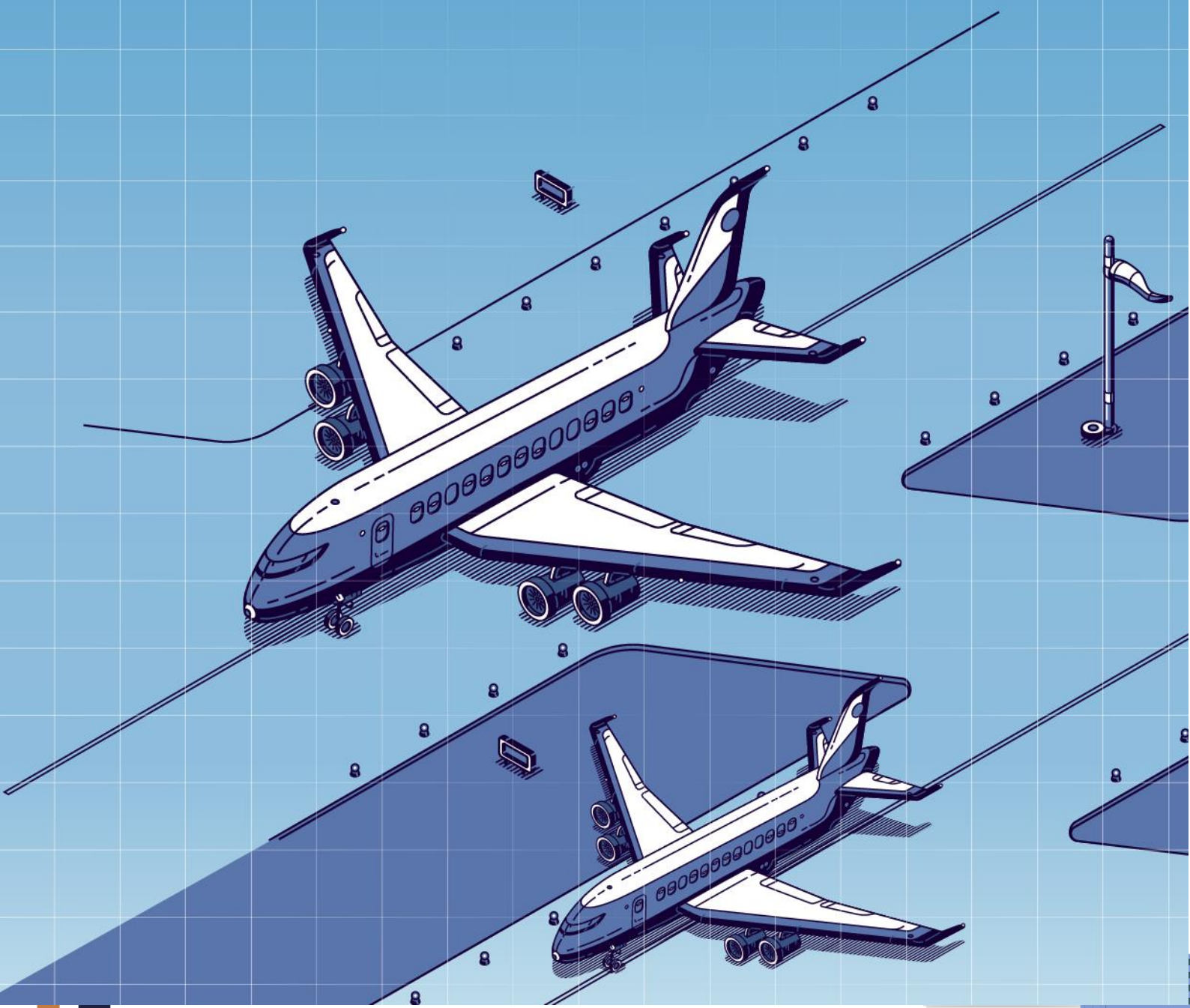
Development of hub airports is important to attract regional international transfer traffic via India. These airports would be driven by their hinterland economy, hub carriers, efficient processes, and open skies. India needs to develop and follow a comprehensive hub policy that promotes long haul connectivity through fiscal incentives along with regulatory reforms and a promotion of India as a tourist destination.

Figure 3: Select action points



Growth of Indian carriers into global mega carriers is a key pillar to achieve this growth ambition. The government has brought in important measures to support airlines and this continued support is critical. Enhancing cost efficiencies through a robust local ecosystem of MRO, leasing, manufacturing with a talent pool of skilled workforce will aid this growth.

3. Airports

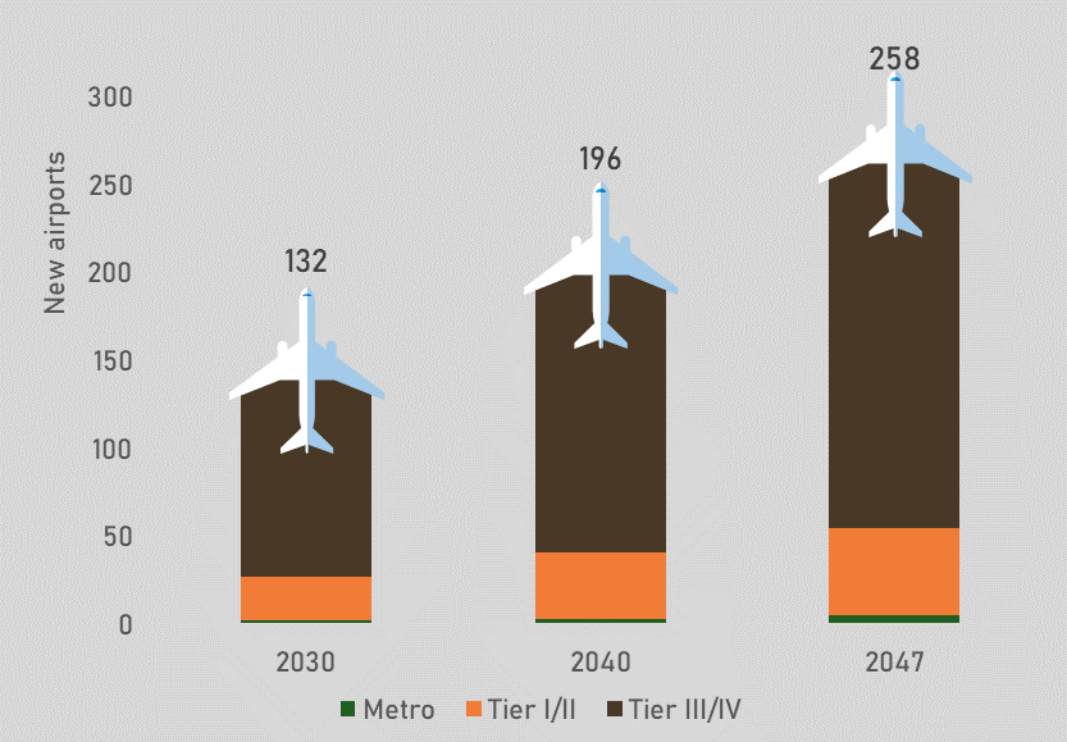


3 Airports

There are ~148 operational airports[12] in India. The number of operational airports in the country has doubled from 74 in 2014 to 148 in 2023[13]. The growth is a result of Government's push to enhance airport and aviation infrastructure. There are 14 airports in India which are currently under the Public Private Partnership (PPP) model & going forward Government plans to concession multiple additional airports in India on PPP.

India stands at a pivotal juncture where the burgeoning demand for air travel necessitates a strategic and robust development of existing and new airports. Upgrading existing facilities and strategically setting up new airports aligns with the country's vision for a modern, integrated transportation network. In short term, the government is focusing on building infrastructure with the support of the private sector. Nearly US$ 11.8 billion (INR 98,000 crores)[14] is being spent over the five-year period on construction of new greenfield airports and the development of existing brownfield airports. Out of this, the private sector will contribute US$ 7.5 billion (INR 62,000 crores), while the Airports Authority of India (AAI) is expected to invest US$ 4.3 billion (INR 36,000 crores). By 2047, India is expected to have a total of >400 airports and addition of ~258 airports.

Figure 4: New Airports in India, Cumulative



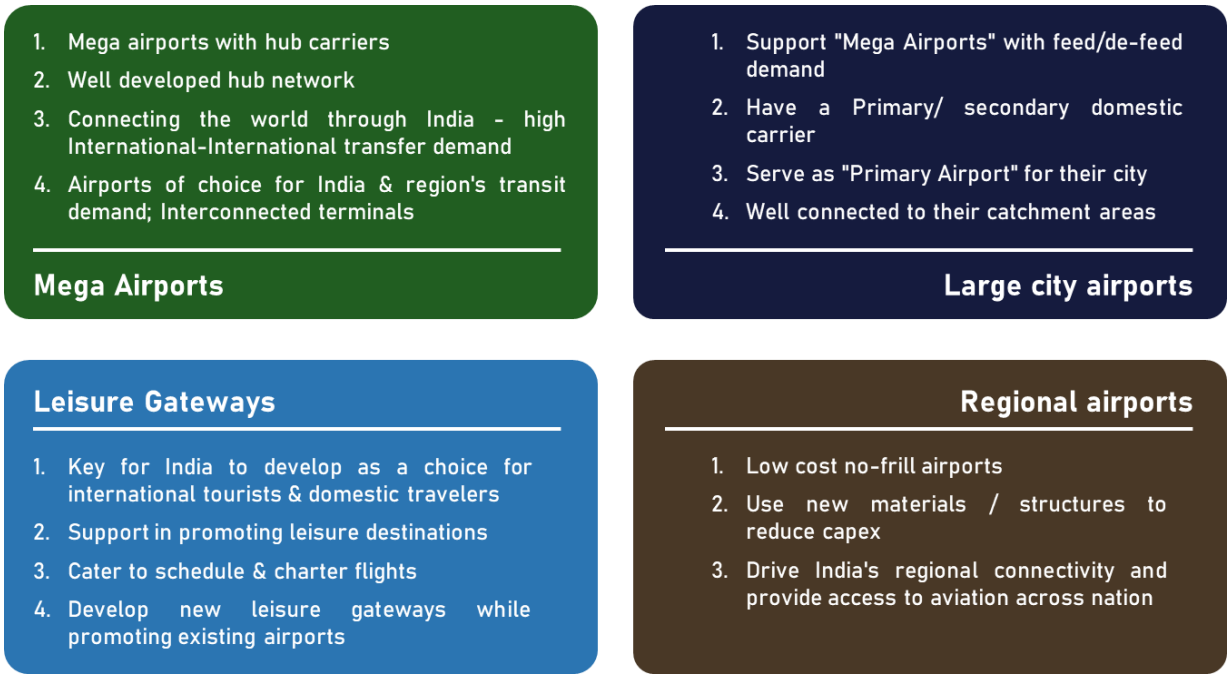
India will require a mix of mega hub airports to low-cost regional airports. Metro cities airports are expected to become mega hubs, with cities having multi airport system.

[12] Secondary Research - https://pib.gov.in/PressReleasePage.aspx?PRID=1918943

[13] Secondary Research - https://pib.gov.in/PressReleasePage.aspx?PRID=1918943

[14] Secondary Research - https://www.ibef.org/industry/indian-aviation

Figure 5: Development of Indian Airports



Cities of Delhi and Mumbai are expected to have 6 airports, with 3 airports in each. Major cities of Bengaluru, Hyderabad & Chennai are expected to have 6 operational airports, with each city operating with 2 airports. The 30 largest cities in India are estimated to require a new airport with the increase in air traffic and limitations in continued expansion of existing airports.

Table 1: Additional airports by 2047

Parameters	Unit/Cities	Metro	Tier I & II	Tier III/IV	Total
Additional Airports	#	5	50	203	258

3.1 Action Points

There is a need for a multi-pronged approach for airport development given the varied type of airports. A National Airport Development Plan till 2047 for capacity augmentation needs to be formulated to plan for development of new airports and capacity augmentation of existing airports. Greenfield airport development takes a long time due to the need for appropriate site selection, land acquisition and necessary approvals. A National Airport Development Plan would enable addressing these challenges in a timely manner. The government has identified select AAI airports for development under PPP. The concessioning of these airports needs to be expedited to get private expertise and capital in development of airports.

Development of mega hub airports require transformation of these airports as “Airports of Choice” for international passengers. This is a key aspect for establishing India as a preferred transit destination and to connect the world through India. An elevated passenger experience, extensive use of technology and a coordinated effort with Indian carriers for slots and network development is required. There is a need to formulate a comprehensive hub policy, prioritizing long-haul connectivity to strategically significant destinations.

Land acquisition for greenfield airports is a critical aspect for augmenting airport capacity. Finding 2000-5000 acre of land parcels for new airports specially in metros and large cities will be difficult. Constructing a greenfield airport, 50-60km away from major cities may escalate costs and travel time. The concept of land pooling offering displaced landowners cash compensation and a developed plot closer to the airport has been adopted by some states with encouraging results. Connecting airports with metros, train, high speed highways from the major cities is critical to ensure smooth connectivity for the passenger in-around the major catchment.

Figure 6 : Action Points for airports



4. Airlines

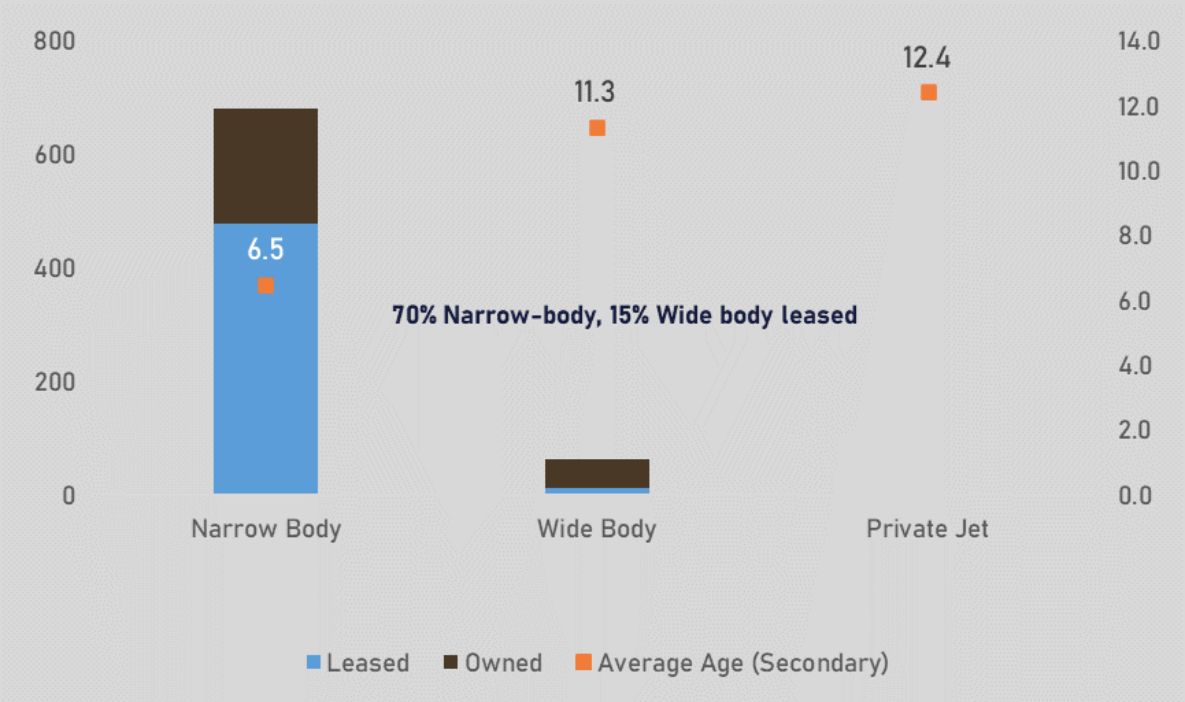


4 Airlines

The total current aircraft fleet in India is about 810 aircrafts with an average age of 7.4 years. Of these, ~50% aircrafts are owned or operated by the two largest airlines – Indigo and Air India. General trend amongst Indian Airlines based on the sample:

1. Narrow body aircrafts make up 91%+ of the fleet in the sample
2. Of the 680 narrow body aircrafts, 70% or 478 are leased aircrafts
3. Of the 63 wide-body aircrafts, 83% or 52 aircrafts are owned
4. Given the owned/leased structure, narrow body average age is much lower, at 6.45 years, whereas wide body average age is 11.30
5. A320 class dominates the current fleet, with a total of 356 aircrafts, followed by A321 with a total of 122 aircrafts. The two classes account for a total of 63% of the sample.

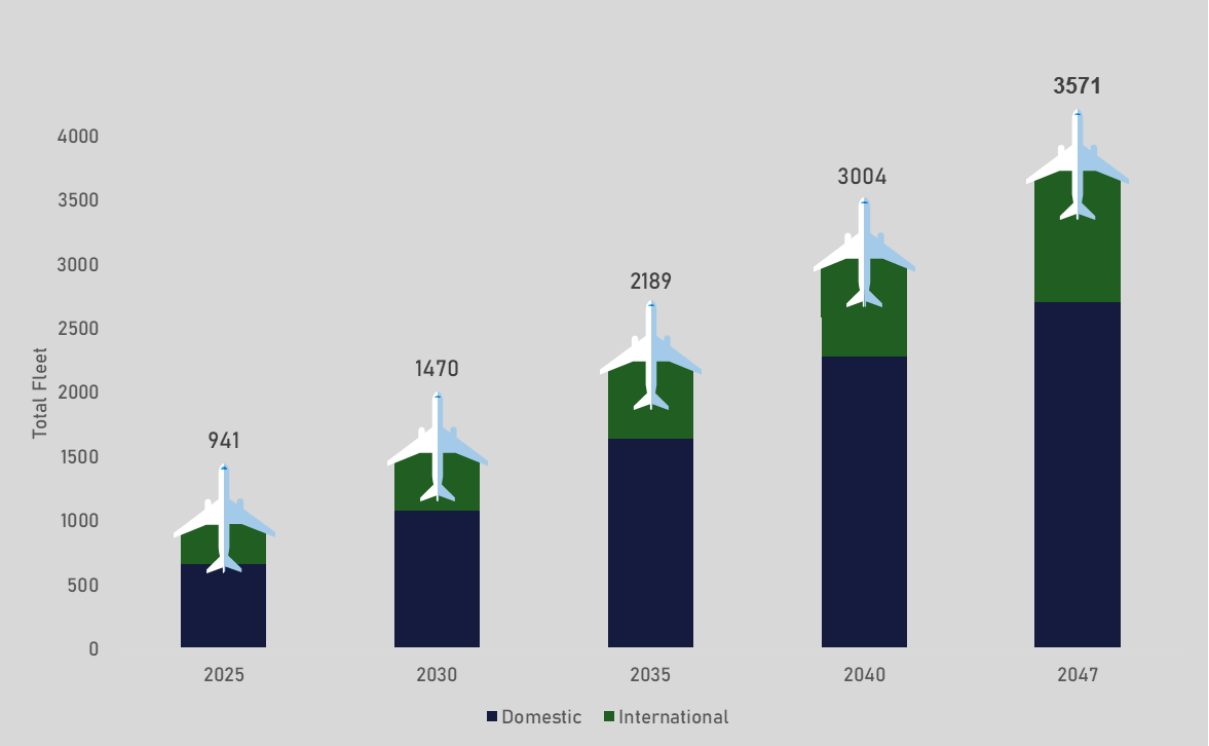
Figure 7 : Fleet Composition in India as of September 2023



Against a total existing fleet of 810 aircrafts, Indian airlines have placed ~1,500 confirmed orders. While narrow body aircrafts dominate the order book, a significant uptick is seen in new widebody orders. This is aligned with the increased global ambitions of Indian airlines for providing long-haul and ultra long-haul connections.

By 2047, the fleet of Indian scheduled carriers is estimated to grow to more than 3,500 with more than 2,700 aircraft expected to be utilized for domestic operations and more than 860 aircraft for international operations. This will be an increase of nearly ~2,700 aircraft over a 24-year period, denoting a growth of more than 6%. annually.

Figure 8 : Total Fleet of Indian Carriers



4.1 Mega Carriers

Key Indian carriers have ordered sizable number of aircraft to be delivered within the next decade. With addition of modern & enhanced range fleet, airlines will be able to capture a strong international market, effectively use hub network, and strongly support the Government's vision of creating India as an aviation hub.

India's strategic geographic location further enhances the potential of such carriers to make India serve as a global hub, easing transcontinental travel. By embracing innovation, forming key partnerships, airlines can solidify their positions as hub carriers, playing a pivotal role in shaping the position of India in global aviation market.

4.2 Action Points

Launching long-haul international fights is challenging with long break-even periods and stiff competition from foreign airlines and global hub carriers. These connections are however critical for development of India as an aviation hub and to meet the aspiration of connecting the world through India. A comprehensive hub policy to promote long haul connectivity by airlines and make Indian airlines competitive with respect to established global hub carriers is required. Airports, airlines and regulators need to collaborate to make operations efficient and conducive for hub operations through well-defined slot banks, reduced Minimum Connect Times and efficient transfer processes.

Major airports can create with dedicated airline terminals in partnership with the airlines. This will provide high operational efficiency along with better passenger experience. Further, airline data might be leveraged to provide customized airport services for high passenger experience at the airports.

The government has brought in important measures to support airlines and this continued support is critical. Enhancing cost efficiencies through a robust local ecosystem of MRO, leasing, manufacturing with a talent pool of skilled workforce will aid this growth.

Sustainability and alternative energy sources will be a key focus area for airlines over the coming decades. Adoption of Sustainable Aviation Fuel is presently low due to lack of capacity and high operating costs. Government through India's Oil Market Companies can create a Sustainability Roadmap in collaboration with Indian airlines to enables airlines to meet the sustainability goals without increasing financial burden on airlines.

Below a few action points to support Indian carriers in their journey:

Figure 9: Action Points for airlines



5. MRO and Leasing



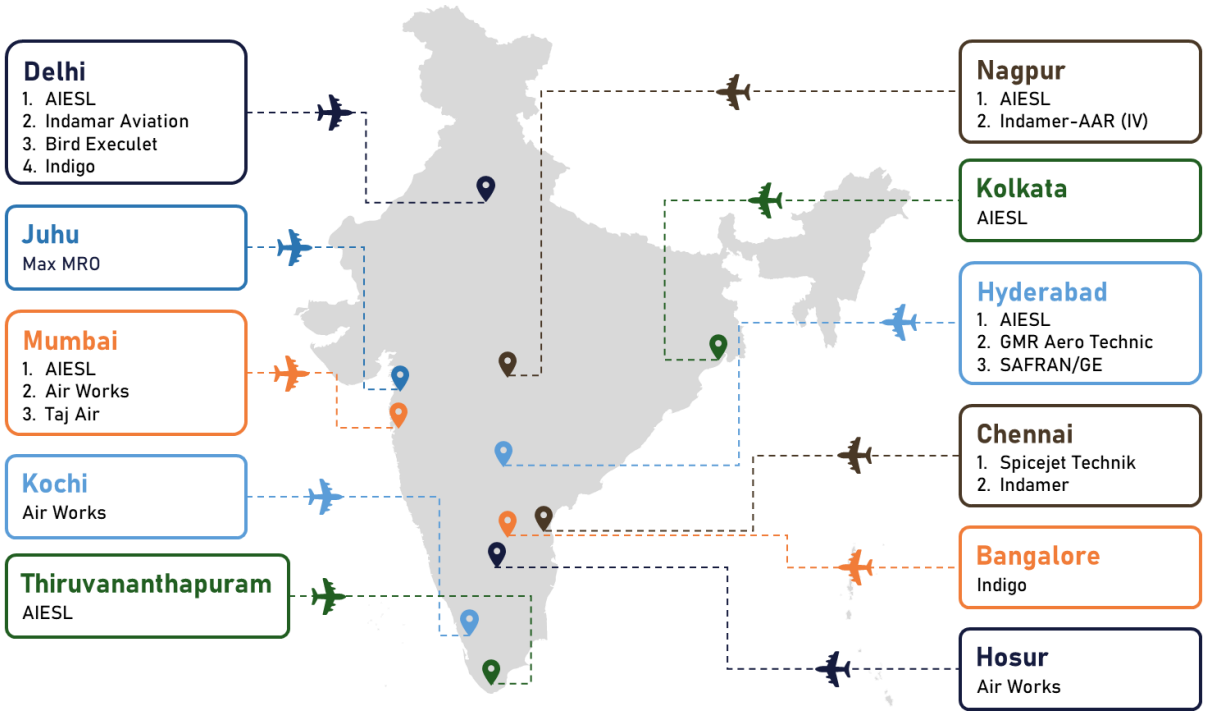
5 MRO and Leasing

5.1 MRO

The Maintenance, Repair & Overhaul (MRO) sector is a critical part of the aviation value chain to ensure safety of aircraft operations. The primary purpose of MRO is to maintain the airworthiness of aircraft and its related components through routine checks, scheduled and unscheduled repairs, preventive and corrective maintenance, replacements etc. Globally, the MRO Industry size was estimated to be at USD 78.6 Bn as of 2022. The global MRO market is positively corelated to growth in fleet size and is expected to grow at a CAGR of 5% to USD 126.6 Bn by 2032. North America is the largest market with a contribution of 27% (USD 21.4 Bn).

The Indian MRO industry is at a nascent stage with an estimated market size of USD 1.2 Bn as of 2022 which translates into ~1 - 1.5% of the global MRO market. In India, currently MRO remains the second largest operational expense after fuel, at about 12%-15% of total revenues.

Figure 10: MRO Facilities Across India



India has immense potential to capitalize on growth in aircraft fleet and leverage its engineering capabilities to create a robust MRO industry. Additionally, its strategic location, low labor cost, and a push for *Atmanirbhar Bharat* further makes it ideal destination for an MRO ecosystem. Realizing the potential of MRO Industry in India, the Government has introduced several policies and regulations to bring India's MRO sector at par with global peers and support growth of MRO industry in India. The National Civil Aviation Policy (NCAP) 2016 and subsequent rationalization of taxes were important steps taken by the government to promote MRO industry in India.

MROs in India have enhanced their capacities in traditional segments such as airframes and the industry is branching to other MRO segments such as engines in collaboration with global OEMs. India has potential to be a leader in MRO catering to ~90% of India's demand for MRO services locally within the country by 2047.

5.2 Leasing

Majority of aircrafts in India are leased. At present around 80% of the fleet with Indian commercial airlines is on lease[15], compared to 53% globally. However, India doesn't have a robust leasing industry and most aircrafts are leased out of Ireland. Leasing of aircraft is considered as an important element in aviation value chain and countries such as China have taken progressive steps to develop their domestic leasing industries and reduce external dependence.

Government of India has also taken important steps in this direction through promotion of International Financial Services Center (IFSC) at GIFT City. These steps have started yielding results with Air India recently acquiring its first A350-900 aircraft via a finance lease transaction through IFSC. This is a landmark step for aircraft leasing in India and will go a long way in developing India as a preferred destination for aircraft leasing. Major Indian airlines are planning to set-up leasing units in GIFT city.

India with its own aircraft leasing industry has potential to finance ~90% of leased aircraft being ordered in India by the year 2047. With Indian airlines ordering large number of aircraft, this is a golden opportunity for developing a global leasing hub in India.

[15] Secondary Research

6. Advanced Air Mobility



6 Advanced Air Mobility

6.1 Drones

Drones or Unmanned aerial vehicles (UAVs) are aircraft that do not require a human pilot. The drone industry in India has been evolving rapidly over the past few years. At present, drones are widely used in military and commercial applications such as surveillance, crop protection, construction project surveying, filmmaking, healthcare, e-commerce delivery, and more.

Since traditional methods are sometimes time-intensive and prone to human error, utilizing drones in their place can result in considerable cost savings and mass adoption while enhancing the value of information obtained. Thus, several startups and companies are currently involved in developing and identifying new applications and use cases for drones. And this is driving the drone industry further. Additionally, startups in India are focusing on improving and advancing their technological capabilities, while corporations are heavily investing in the drone ecosystem.

Furthermore, the Indian government's increased efforts through the implementation of liberal policies and a production-linked incentive (PLI) scheme, increased air space, and others, are all collectively supporting the market's growth. Mission 'Drone Shakti' has been announced for supporting drone startups and promoting Drone-as-a-Service (DrAAS) as part of the Union Budget. The increasing array of drone applications is not only accelerating the market but also propelling the entire drone ecosystem, which includes drone maintenance, repair and overhaul, drone platform services, as well as drone training and education.

PLI scheme has benefitted more than 20 drone manufacturers and component manufacturers. A total incentive of INR 120 crore is spread over three fiscal[16] years. In FY'23 the Ministry of Civil Aviation, has provided around INR 30 Cr[17] under PLI scheme for drone and component manufacturers.

6.2 e-VTOLS

Electric Vertical Takeoff and Landing (eVTOL) vehicles have transformative capabilities poised to revolution the air traffic ecosystem. They have the inherent potential to establish seamless connectivity within urban areas, substantially diminish congestion & travel durations. While the technology is expected to be brought in commercial use by around 2025-26, the adoption is expected to accelerate in a decade. The Urban Air Mobility (UAM) market, particularly e-VTOLs, is expected to undergo substantial development by 2047 with a potential wide-spread use.

As an emerging technology, eVToL not only provides opportunity for advanced transportation services but also provides a window of opportunity for India to take a quantum leap as a potential manufacturing hub for eVToLs. India can leverage its traditional strengths in innovation, information technology, engineering and high domestic demand to create an ecosystem for manufacturing of eVToLs and its components. This would require focused efforts from the government, technology tie-ups with OEMs and financial incentives to enable creation of required manufacturing ecosystem.

[16] Secondary Research – https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1913565#:~:text=30%20crores%20(approximately)%20to%20the,on%2030th%20September%202021

[17] Secondary Research - https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1913565#:~:text=30%20crores%20(approximately)%20to%20the,on%2030th%20September%202021.

An estimated 25,000 eVToLs could be in operations in India by 2047 highlighting the potential of this segment. The e-VTOL fleet is expected to encompass both private e-VTOLs and taxis. Nearly 90% of total fleet is expected to comprise of private e-VTOLs, with the remainder dedicated to air taxis. However, meeting the escalating demand for e-VTOLs in the country would also need development of infrastructure such as vertiports. The large scale adoption of eVToLs would also require corresponding infrastructure such as vertiports to be developed for their operations.

6.3 Action Points

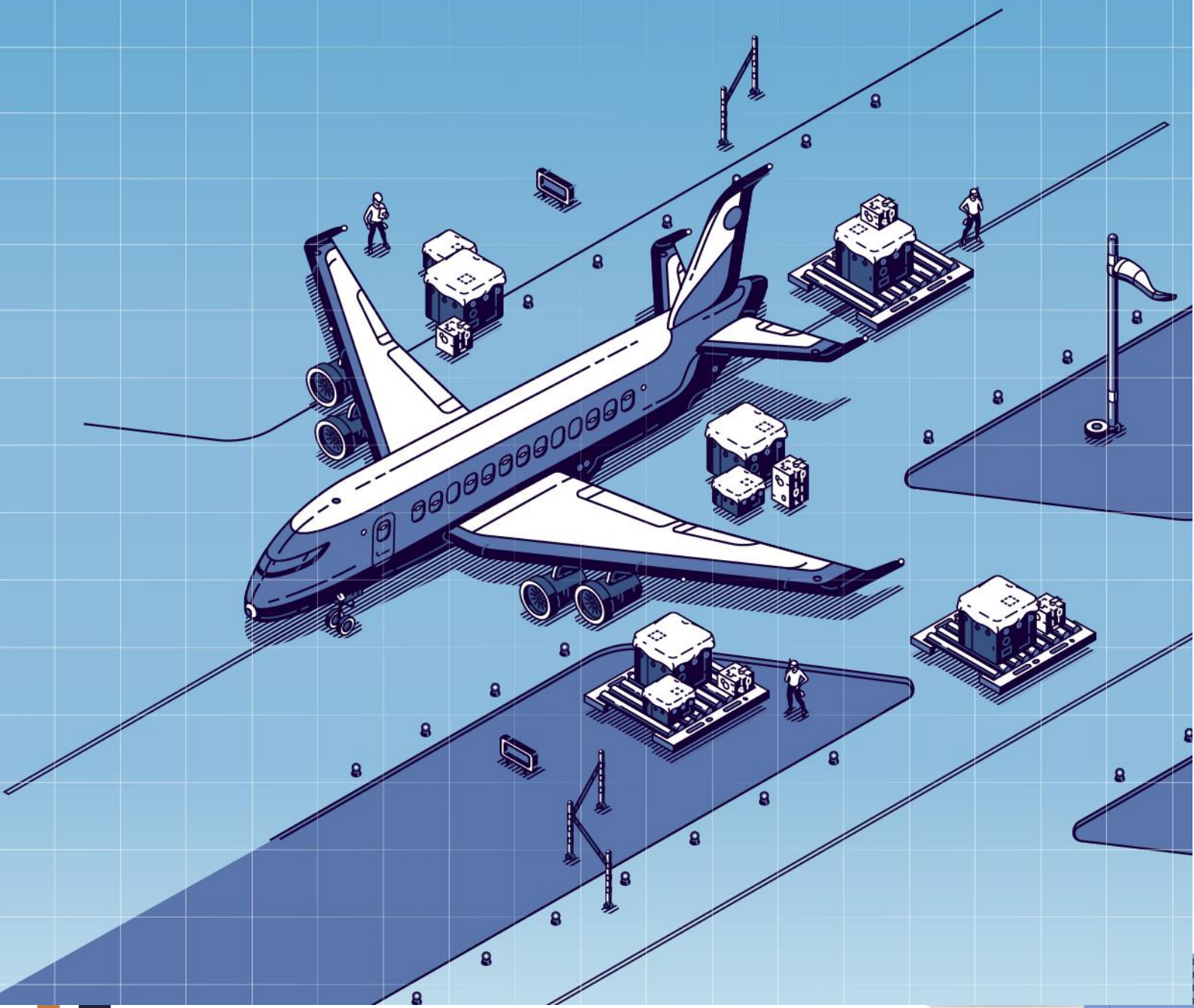
Drones and eVToLs are evolving segments with a high potential for growth. The segments provide an opportunity for India to take quantum leaps and build an ecosystem for their manufacturing. This would require a focused approach and a strong policy support from the government. A few key action points to support these emerging segments are highlighted below.

Figure 11 : Action points for drones and e-VTOLs

1	Enable Technology tie-ups with leading OEMs
2	Provide long-term financial incentives to support innovation and research in drones and eVTOLs through Centers of Excellence
3	Create regulatory sandbox in designated low-risk areas for testing and proof of concepts (PoCs) of drones and eVToLs
4	Lead initiatives on adapting traditional airspace management for eVToLs
5	Develop right infrastructure to support the growth of e-VTOLS – Vertiports, charging stations, MROs and other critical infrastructure need to be built in adequate numbers
6	Airspace restructuring to support high traffic growth -efficient management of airspace along with integration of existing airspace with UAM vehicles and establishing air traffic management system
7	Incentivization policies for developing infrastructure. For large e-VTOLs mega charging stations would be needed, and infrastructure development should be rewarded
8	Work on supply side of the issues of key components – Key components need to be important , hence till we don't have enough indigenous supply, imports should be eased through policy reforms
9	Development of training schools, which are easily accessible and affordable to the masses, ensuring safe and secure operations in the future
10	Develop high public acceptance for UAM, AAM – Government to play a pivot role in coordination with private players by conducting pilot tests and gradually build confidence of public



7. Air Cargo



7 Air Cargo

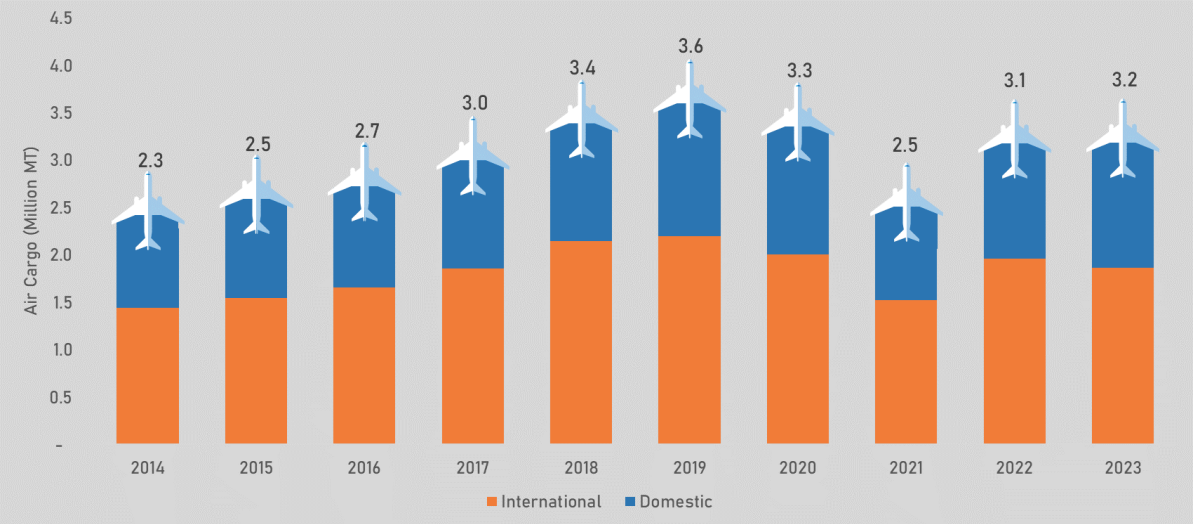
7.1 Overview

Air cargo throughput in India has grown at an annual CAGR of ~9% from 2014 to 2019, while the overall air cargo throughput has recovered to 95% of pre-Covid levels by the end of FY23. International air cargo has been slightly more than 60% of the overall air cargo volumes in India. Despite the healthy growth, the volume of air cargo handled in India is significantly lower as compared to top airports in the world. As per Airports Council International (ACI), combined cargo handled by all Indian airports is less than that handled by hubs like Hong Kong, Memphis or Shanghai individually.

Logistics costs in India comprise about 13-14%[18] of GDP as compared to 7-8% in developed countries which has also hampered the growth of air cargo logistics industry. The Indian air cargo industry in the country faces a multitude of challenges. These include high dwell times, congested cargo terminals, sub-optimal use of belly cargo capacity, missing/ damaged/ non-traceable cargo, manual processing etc. Key reasons include insufficient enabling infrastructure, complicated procedures, limited use of technology and challenges on the human resource front.

Domestic cargo in India faces competition from the road and rail freighter industry, due to lower pricing along with infrastructural challenges at certain Indian airports resulting in high dwell time.

Figure 12 : India Air Cargo 2014-2023



The total Indian air cargo volumes in the period April-November 2023[19] are at ~95% compared to the April-November'19 or pre-COVID levels[20]. The recovery has been impacted by fleet issues with Indian and global carriers resulting in capacity reduction.

Indian airline's share of international cargo to and from India has been closer to 16% in financial year 2023[21]. This has been due to low presence of wide-bodies and freighter aircraft in the Indian airline's fleet. However, going forward with introduction of wide-body aircraft

[18] Secondary Research - https://cargotalk.in/editions/2023/CTJuly23.pdf

[19] Secondary Research – https://www.aai.aero/

[20] Secondary Research - https://www.aai.aero/

[21] Secondary Research - https://www.dgca.gov.in/digigov-portal/

along with long range narrow body aircraft by Indian carriers, this proportion is expected to increase.

India's economic growth in Amrit Kaal requires reduction in logistics cost in the country from ~14% of GDP to ~8% of GDP. The government is taking important steps in this direction with initiatives such as PM Gati Shaki, National Logistics Policy and Krishi Udan 2.0. This reduction in logistics cost through efficient processes would make our industries competitive providing a boost to growth of air cargo. India has the potential to be a transshipment hub for South Asia with the earlier mentioned growth of mega carriers. With this growth, an estimated 21 MMT cargo would be handled annually by 2047. This will require multiple reforms on a national level.

There key action points are listed below.

1. Cargo transshipment: India has not fully capitalized on the transshipment cargo from the region. India's neighbours find it faster and cheaper to send goods via ships to hubs in the Middle East and thence by air to markets in USA and EU. While some Indian airports have taken steps to promote transshipment of cargo, the opportunity is much larger. The increase in wide body aircrafts by Indian airlines with direct and more frequent connectivity to US and Europe provides impetus to capitalize on this opportunity. Steps to ensure seamless ramp to ramp transfers of trans-shipment cargo with due safeguards followed by greater engagement with logistics companies in neighbouring countries needs to be implemented on a priority basis.
2. Global best practices and performance monitoring: Identifying areas for further simplification of cargo processes in line with global best practices and evolving technology is required. Key performance indicators (KPI) for various government and industry stakeholders like - airlines, airports, terminal operators, Customs House Agents (CHA), freight forwarders; and government agencies like Customs, CISF, quarantine officers etc. need to be formulated for effective monitoring of cargo processes. Mechanism for rating the Cargo Terminal Service Quality (CTSQ) along the lines of rating of passenger terminals should be introduced.
3. Technology and Innovation Acceptance: Streamline end-to-end process and use of automated methods to ensure a quick cargo process. This will support in reducing dwell times along with making the cargo process user friendly. Airport community platforms have been successful in providing a clean cargo process experience to the users. India needs to have a complete digital cargo process at all airports, to achieve a 100% paperless cargo process. Successful implementation of ULIP with all stakeholders in the value chain connected through APIs to share data to achieve seamless and efficient movement of cargo.
4. Intermodal Hubs: Multi modal logistics parks are being developed across the country. These hubs will support in connectivity and efficient processing of cargo reducing logistics costs. By successfully integrating various modes of transportation, MMLPs will provide cost efficiencies to the entire cargo value chain.
5. Cargo Village: Facilitate development of Cargo Villages at all major airports. This would help consolidate all government agencies, regulators and service providers within the airport's cargo facility and help decongest the cargo terminals.

8. Conclusion



8 The Road Ahead

The road ahead for India in its *Amrit Kaal* is exciting and promising. It's a testament to the nation's commitment to growth, excellence and innovation.

With a growing economy, rising incomes, supportive policy environment and intense competition among airlines, India's aviation growth story is likely to continue. The rapid expansion in India's airport and air navigation infrastructure and growth in leasing, MRO and skill development will fuel it further. India's commitment to a sustainable growth, supported by development of mega future-ready airports and airlines, innovation and quantum leaps in emerging technologies are key pillars for achieving global leadership.

The aspiration for India's leadership in aviation during Amrit Kaal is only as good as its execution. The policy makers, industry and academia will need to work closely together. There will be challenges, but we need to steer our way and consider these challenges as catalysts for innovation and progress.

With support and under guidance of the Ministry of Civil Aviation, a determined collaboration by all aviation stakeholders and a focus on results, we will achieve more than envisioned.

About KPMG

KPMG is a global network of professional services firms providing Advisory, Audit and Tax services. It has over 200,000 people working in over 150 countries.

KPMG in India, a professional services firm, is the Indian member firm affiliated with KPMG International and was established in September 1993. Its professionals leverage the global network of firms, providing detailed knowledge of local laws, regulations, markets and competition. KPMG has offices across India in Ahmedabad, Bengaluru, Chandigarh, Chennai, Gurugram, Hyderabad, Jaipur, Kochi, Kolkata, Mumbai, Noida, Pune, Vadodara and Vijayawada.

KPMG's aviation practice works with the entire spectrum of clients ranging from government, regulators, airlines, airports, government, regulators, 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, transaction, finance, IT, operations, and people issues.

KPMG has had the privilege of assisting the Ministry of Civil Aviation (MoCA), Government of India, in the drafting of the National Civil Aviation Policy (NCAP 2016) and the policy framework for the Regional Connectivity Scheme (RCS or UDAN). It had earlier assisted MoCA in drafting the 12th Five Year Plan for aviation.

Contacts:

Girish Nair
nairgirishg@kpmg.com

Jodhbir Sachdeva
jodhbir@kpmg.com

Sharad Gambhir
sharadgambhir@kpmg.com

Acknowledgements:

Abhishek Somani

Sameer Bhatnagar

Saswat Kedia

Siddharth Malhotra

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 industrialization, 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.

Contacts



Manoj Mehta,

Senior Director & Head – Civil Aviation

Email: manoj.mehta@ficci.com



Raunak Sharma

Consultant

Email: raunak.sharma@ficci.com

Image by Sky and Glass, brgfx, storyset, upklyak, macrovector on Freepik

FICCI

Asia's largest event on Civil Aviation
(Commercial, General and Business Aviation)

WINGS INDIA 2024

18th - 21st January 2024

Begumpet Airport, Hyderabad, India

KPMG