

## Editor's Note

It has been a sobering time for all. A horrifying assault on innocent civilians in Pahalgam, retaliatory attacks by India, and tensions between India and Pakistan escalating to war. As everyone prays for peace, remember that infrastructure is often weaponised in times of trouble, whether it is water or roads. So keeping an eye on the ball during calm is the smart thing to do.

How do you measure influence in the infrastructure space? In the building of roads, bridges, ports, airports, metros and freight corridors? Yes, but also in the conversations that ensure these changes are part of our collective reality. As The Infravision Foundation enters its third year, it sees its ideas reflected in multiple dialogues between citizens and the government through the Pradhan Mantri Surya Ghar Yojana; among thought leaders in the debate around urban metros and their financial viability; and in the government on the Compensatory Afforestation Management and Planning Authority (CAMPA).

# MAKING CHANGE HAPPEN >>

# TIF Quadruple Impact

How does a think tank evaluate its impact? Sometimes it is a shift in the conversation, at other times it is a tweak in policy. This month, The Infravision Foundation (TIF) had both. A detailed article in Bloomberg echoed the findings of TIF's recent report authored by Geetam Tiwari and Deepty Jain of IIT Delhi on A Framework for Selecting an Appropriate Urban Public Transport System in Indian Cities. Many metros are struggling, said the Bloomberg article authored by Mihir Mishra and quoting TIF's study. "Mumbai's ridership is about 30 per cent of its original target, and Bengaluru's is 6 per cent. Other than New Delhi and Kolkata, actual ridership in metros across India is less than 20 per cent of desired levels."



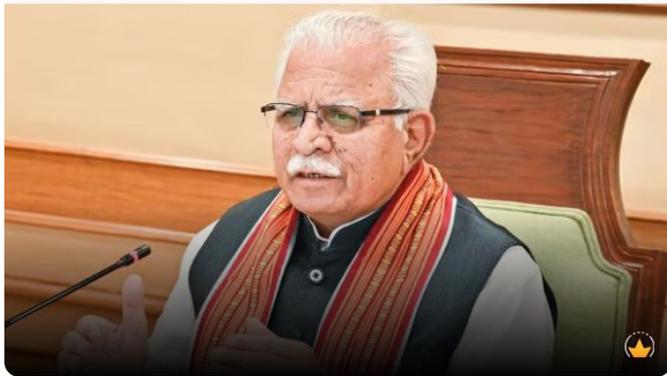
Union Housing and Urban Affairs Minister Manohar Lal also proposed cargo compartments for small businessmen to transport goods across the city to save time, reduce energy use and enhance business efficiency. This was a specific suggestion by TIF's study by Sandip Chakrabarti of IIM Ahmedabad on Strategies to Improve the Financial Performance of Metro Rail Systems in India.

TIF's Sooraj se Rozgari study which was one of the inputs for the Prime Minister's Surya Ghar Muft Bijli Yojana continues to show results. According to Yasin M Choudhary, IAS, who wrote in The Indian Express, 8,000 consumers across Jammu and Kashmir have come on board the yojana which is helping the power deficit region. Other states have also done well in adopting the scheme. Chandigarh and Daman & Diu have achieved 100 per cent of their government building rooftop solar targets, leading the nation in clean energy adoption. States like Rajasthan, Maharashtra, Gujarat, and Tamil Nadu are also performing exceptionally well, contributing significantly to the overall installation figures.

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## Minister calls for cargo compartments, expansion of green energy use in metro

Swarnali Mukherjee | 1 min read | 04 May 2025, 09:41 PM IST



The Indian EXPRESS  
JOURNALISM OF COURAGE

## A silent solar energy revolution in J&K

With a cumulative installed capacity of around 75 MW of rooftop solar power plants, the Union Territory has already exceeded its renewable power obligation



TIF Co-founder and Managing Trustee Rumjhum Chatterjee, CEO Jagan Shah, and Head, Advocacy, Kaveree Bamzai presented a study recommending an overhaul of the Compensatory Afforestation Management and Planning Authority (CAMPA) to Bhupender Yadav, Union Minister for Environment, Forest and Climate Change. The report by TIF and TERI addresses issues of weak enforcement and lack of integration between various monitoring systems. Yadav has promised to look into the actionable agenda. He also spoke in favour of the scheme and mentioned how he encouraged its adoption in his constituency, Alwar. ▶



# TIF@Media

TIF believes in thought leadership on infrastructure issues and its founder Vinayak Chatterjee plays a major part in this focus. Whatever he writes and says is taken seriously by those who matter in this space in particular. His INFRATALK in Business Standard emphasises the expected commencement of Air Taxi operations in 2026 - and the issues surrounding the initiative. It promises to be an exciting addition to urban commuting options, he says.

**Business Standard** NEW DELHI | FRIDAY, 18 APRIL 2025

## Flying commutes: Air taxis set for takeoff

**I**magine a future where busy commuters soar above congested roads in sleek, electric-powered air taxis, reaching their destinations in minutes rather than hours. From Gunagram to Connaught Place, and from Mumbai Airport to Nariman Point, a new dimension of urban transport is set to unfold as electric-Vertical-Take-off-and-Landing (eVTOL) aircraft, also known as air taxis, prepare to transform city travel.

According to the Directorate General of Civil Aviation (DGCA), VTOLs are defined as aircraft powered by unconventional energy sources, with a maximum takeoff weight of less than 5,700 kg, operated by a pilot, and restricted to daytime operations under visual flight rules.

Such eVTOLs look like large drones and evoke images of floating bubbles. Unlike conventional aircraft that require runways, they can take off and land vertically, making them well-suited for dense urban environments where space is limited. These aircraft use electric propulsion, making them quieter and more environment-friendly than traditional helicopters. Advanced air traffic management systems aim to ensure safe and efficient operations. In time, pilotless capabilities are expected to take over.

Internationally, the air-taxi business is evolving rapidly. Dubai is set to begin full-scale commercial operations with four vertiports by 2026. Other cities actively gearing up for commercial operations include Los Angeles, New York, Chicago, Paris and Singapore.

India's regulatory landscape is also preparing to accommodate eVTOLs. The DGCA has formed six dedicated working groups to develop rules and establish an operational framework. Each group focuses on a specific area: Vertiports (take-off and landing points), aircraft type certification, crew licensing, operating permits, air traffic management, and MRO (maintenance, repair, overhaul) and safety. Reports from these working groups have been submitted, and in September 2024, the DGCA issued comprehensive guidelines on its website, which are publicly accessible. However, no operational licenses have been issued to date.

Along with the DGCA, the Indian private sector is already actively engaged with this technology. The ITI Madras-incubated ePlane Company has made history by becoming the first private Indian firm to secure Type Certification approval from the DGCA for its eVTOL aircraft, the e200X.

Similarly, InterGlobe Enterprises, the parent company of IndiGo, and US-based Archer Aviation are getting set to launch their eVTOL services by 2026. Other Indian startups, including Ubify Technologies and Nalwa Aero, are also developing eVTOL solutions, while global players like SkyDrive and JetSetGo are working on commercial eVTOL routes in India. Ubify Technologies is the first private Indian company to receive Design Organisation Approval from the DGCA for an electric aircraft.

In step with these developments, major Indian airports are preparing to develop vertiports as specialised hubs for VTOL aircraft, complete with dedicated airspace corridors, advanced air traffic management systems, and charging stations. A new cadre of dedicated air traffic controllers may also be needed to coordinate low-altitude craft, such as drones and air taxis.

A key problem area is that the development of supporting infrastructure remains underdeveloped, which is a source of concern. The sector's growth depends on the strategic selection of vertiport locations. These takeoff and landing sites must be situated in high-demand areas, primarily urban centres and their surrounding regions. However, limited urban space, high real estate costs, and air traffic restrictions around sensitive areas pose challenges for building multiple landing zones and parking facilities.

Another challenge is power supply. Unlike electric vehicles, eVTOLs rely on larger and heavier bat-

teries. To keep operations viable, these aircraft require rapid turnaround times, necessitating ultra-fast charging within a 10-12-minute window. Additionally, various eVTOL manufacturers use different battery configurations, each designed to optimise flight range and efficiency. These varying charging needs must be accommodated.

Thus, establishing this new category of base-infrastructure to support eVTOLs requires a multi-disciplinary approach, combining urban planning, energy management, vertiport construction, and regulatory expertise.

But rolling out the technology is only half the battle; the other half lies in gaining public acceptability. With fares expected to be significantly higher than conventional transport options, will even time-stressed commuters find eVTOLs worth the premium? Preliminary studies suggest that a seven-minute flight from Connaught Place to Gunagram could cost around ₹4,500 for a single passenger, whereas an Uber ride today takes about two hours and costs around ₹1,700.

Then there's the charge of "elitism". Critics may accuse the establishment of pandering to the elite in a situation where mass urban transportation is struggling. The debate here would echo some of the negative sentiments expressed during the introduction of the Bullet Train project. The saving grace is that the air taxi initiative is expected to be a 100 per cent private enterprise with no public expenditure. The UDAN scheme has already shifted the perspective, viewing air travel not as a luxury but as a necessity for providing connectivity. Additionally, medical emergency transportation will be a big boon.

Finally, the eVTOL evolution needs to be seen as another futuristic part of an integrated transport ecosystem. If it can, even partly, ameliorate the pain of urban commuting, eVTOLs will have done their job.

Get set for the first Air Taxi ride in 2026!

*The author is an infrastructure expert. He is also the founder & managing trustee of The Infravision Foundation. Research inputs from Vrinda Singh*



**INFRATALK**  
VINAYAK CHATTERJEE

# TIF@ITDP

TIF CEO Jagan Shah was appointed to the board of directors of the Institute for Transportation & Development Policy. Shah joins an esteemed group of urban development, mobility, and sustainability experts and advocates on the ITDP Board, including Ellen Lou (Skidmore, Owings & Merrill); Janette Sadik-Khan (Bloomberg Associates); Jules Flynn (Zoomo); Bob Hambrecht (Allotrope Partners); Justine Lee (ClimateHaven); Philipp Rode (LSE Cities); Gerhard Menckhoff (formerly World Bank Group); Heather Thompson (ITDP CEO); and Michael Replogle (ITDP Founder). ITDP is a global nonprofit that works with cities around the world to design and implement high-quality transport systems and policy solutions that make cities more livable, equitable and sustainable.

# TIF@The Edge

TIF Co founder and Trustee Rumjhum Chatterjee who is also chairperson of the CII Centre for Women Leadership delivered an inspiring address at The Edge: The Inclusion and Competitiveness Summit in Mumbai. She emphasized how the gender dividend represents the vast potential of returns that businesses, economies and societies can realize by embracing gender diversity, particularly in leadership and across the workforce. She also chaired a session on Metric and Mindsets for Women-Led Development at The Edge. The Inclusion and Competitiveness Summit, organised by CII, in Mumbai. The session had Director NGMA. Ministry of Culture, Government of India, Nidhi Choudhuri IAS, Finland's Consul General Erik Af Hallstrom, and Senior Programme Manager, Gates Foundation, Saachi Bhalla. The speakers also launched a report on A Framework for Women-Led Development authored by Prof Vidya Vemireddy of IIM, Ahmedabad.



# TIF Family@Media

- TIF Adviser and former member, Planning Commission of India, Arun Maira has a new book out in June. Reimagining India's Economy: The Road to a More Equitable Society (published by Speaking Tiger Books) is a timely book. As Maira writes, "Independent India is at a turning point. Will it turn off the path to the destiny it set out towards at the midnight hour of 15th August 1947? Will it provide poorna swaraj--full freedom (political, social, and economic)--to all its citizens? Or will it be a nation in which some citizens are more equal than others: the rich more equal than the poor; Hindus more equal than Muslims; upper castes more equal than lower?"
- India's climate-tech ecosystem is at an inflection point. While energy and mobility dominate policy discourse, critical sectors like waste, circularity and sustainable agriculture remain underserved despite their potential to accelerate Net Zero goals. Akhilesh Tilotia, Distinguished Fellow, TIF, was one of the experts who wrote in a study from The Climate Guys on Unlocking Green Capital: Policy Levers to Drive Climate-Tech Innovation in India.
- Chairman of the Governing Council of CAIRA Siraj Hussain spoke at India Today's State of States in Madhya Pradesh in Bhopal on Fields of Fortune: Agriculture as Enterprise in Madhya Pradesh; at the session on agriculture at the Isaac Centre for Public Policy's Growth Conference hosted by Ashoka University; and to CNBC AWAAZ about kharif prospects.



Arun Maira



Akhilesh Tilotia



Siraj Hussain

## QUIZ: Test Your Infra Power

1. Where was Netflix's The Royals filmed?
2. What is the name of the capital of Andhra Pradesh which Prime Minister Narendra Modi re-inaugurated recently?
3. What is India's air defence system called?
4. Regardless of sceptics, the Central Government has approved two more greenfield airports in Tier 2 cities. Where are they?
5. When was India's National Infrastructure Pipeline inaugurated?



1. Jaipur City Palace and Rambagh Hotel.
2. Amaravati
3. S-400, bought from Russia
4. Kota and Puri
5. 2019



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