

## How EVs Can Complement UDAN Scheme

**Vivek V Gavimath and Spurthi Ravuri**

The government has recently set a target to operationalise 100 airports in the country by 2024 to cater to the growing demands in the aviation sector. The passenger volume stood at 10.5 million during FY 2021–22, close to pre-pandemic levels of 11 million. Considering this growing demand, it is vital to provide affordable access to airports, in addition to ensuring reasonably priced airfares.

### **Ude Desh ka Aam Naagrik (UDAN) scheme**

The UDAN scheme launched in 2016 identifies routes for enhancing regional air connectivity to unserved/underserved airports and encourages operators to fly on these routes with affordable airfares (capped at Rs 2,500/passenger for a distance of 500–600km). In return, the scheme provides viability gap funding and other incentives to the operators. By ensuring affordable airfares for passengers, this scheme attempts to make air transport accessible to all sections of society, in line with the United Nation’s sustainable development goals of promoting inclusive and sustainable economic growth.

Kalaburagi, Kurnool, and Vidyanagar airports are a few airports around Bengaluru that have been revived under this scheme and are operational. Compared with the fares across other regular/commercial routes, the airfares between Bengaluru and these airports are affordable (Table 1).

Table 1. Airfares from the Kalaburagi, Kurnool, and Vidyanagar airports to the Kempegowda International Airport (KIA), Bengaluru.

<b>From</b>	<b>To</b>	<b>Airfares* (Rs/Passenger)</b>
Kalaburagi	Bengaluru	2300
Kurnool		2300
Vidyanagar		2100

\*Airfares of tickets booked 2 weeks or earlier from the date of journey

### **Are affordable airfares enough?**

Newly-operationalised airports improve connectivity, boost tourism and trade, and generate employment (infrastructure and airport-allied services). But the success of the UDAN scheme rests on the footfall witnessed by these airports over time. Although affordable airfare is a prime factor for travellers, the question remains whether this aspect alone is sufficient to make air travel feasible for the common man.

Most airports in the country are located far from city centres. Moreover, except for the Chennai and New Delhi airports, which have metro-rail connections, other airports are accessible predominantly by road. The absence of reliable public transport (such as bus) service and exorbitant taxi fares result in a high door-to-door cost of air travel. This is, therefore, counterproductive to the provision of affordable airfares under the UDAN scheme.

For instance, consider a passenger travelling on any of the Regional Connectivity Scheme (UDAN) routes to (or from) Bengaluru. On landing at KIA Bengaluru, passengers usually avail a bus or taxi to reach the city. Bengaluru Metropolitan Transport Corporation bus fares from KIA to various parts of the city range between Rs 2.5 and 3.5 per kilometre per passenger and are reasonable. However, bus services have their own limitations (such as fixed routes and timings) and may not be convenient for all travellers. Taxis offer the convenience of door-step drop-off and pick-up, and their fares are in the range of Rs 8–14 per kilometre per passenger (assuming occupancy of 3 passenger), which are relatively costlier (at least 200% higher) than bus fares, thus increasing the door-to-door air travel cost. This adds to the disadvantage of air travel relative to other modes like train and bus, as the stations/terminals for the latter are typically located within the city perimeter.

### **Electric vehicles (EVs): The missing link**

To make air travel more affordable, the overall door-to-door cost has to be lowered. This can be facilitated by providing cheaper access to the airport. Until all airports in the country are connected through the metro-rail network or other mass transit services, EVs (e-cabs) can provide cheaper accessibility to airports.

Currently, the fares and total cost of ownership (TCO) of fossil-fuel run taxis (with occupancy of 3 passenger) is Rs 10.31 per kilometre and Rs 3.34 per kilometre respectively. Their earning per kilometre (EPKM), difference between fare and TCO, is Rs 6.97 per kilometre (200% of TCO). Theoretically, assuming the same EPKM (200% TCO) is maintained with e-cabs as well, the fares would go down by 13% compared to conventional cabs, primarily due to the lower TCO of the former. In fact, a study estimates that fares of e-cabs can be Rs 4.66 per kilometre (3 passenger occupancy), resulting in 50% reduction in fares compared to internal combustion engine (ICE) vehicles. Thus, e-cabs can further contribute to making overall air travel affordable for the masses, complementing the UDAN scheme.

However, operationally, the charging time of EVs, even with a DC fast charger, will be greater than the refuelling time of an ICE vehicle, which needs to be accounted for and can be a good trade-off to low operating costs of EVs.

Charging infrastructure, concession in parking fees, and other incentives at airports will create a conducive environment for e-cabs. Moreover, several airports in the country have already undertaken measures such as water recycling and solar power plant installation to build their green charter. Airport access through EVs would be a significant addition to these initiatives by airport authorities.

With EVs (e-cabs or e-buses) enabling cheaper fares for airport access, air transport can become more affordable for the general public—the core objective of the UDAN scheme. In addition, this would ensure inclusive growth and may lead to higher footfall at airports, which can be a major boost to the aviation sector in the country.

*The authors work in the area of Electric Mobility at the Center for Study of Science, Technology and Policy (CSTEP), a research-based think tank.*