

Building electric public transport infrastructure

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In a country largely dependent on public transportation, it is important to adopt eco-friendly modes of transportation. The government has set a target of running 100% electric vehicles in public transport by 2030. Achieving this appears to be a challenge as replacing conventionally fuelled vehicles alone may not encourage people using other forms of transportation to adopt public transport.

The government has actively taken steps in this direction by launching the Green Urban Transport Scheme (GUTS) and Faster Adoption and Manufacturing of Hybrid & Electric Vehicles (FAME) to promote the adoption of electric mobility in the country. The Ministry of Urban Affairs launched GUTS in 2017 to address infrastructure and financing in e-mobility, and to reduce carbon emissions from vehicles, especially government-owned public transportation.

The scheme proposes reforms like establishing a Unified Metropolitan Transport Authority and an Urban Transport Fund, and, adopting and implementing transit-oriented development, travel demand management measures, policy for urban street vendors etc. Similarly, FAME was introduced to enhance electric vehicle production and to facilitate the creation of electric transportation infrastructure.

The Ministry of Heavy Industries and Public Enterprises has notified the second phase of the FAME (FAME II) to boost clean mobility. Under the scheme, the government has decided set aside INR 100 billion (USD 1.45 billion) as subsidies to buy 7,000 buses over the next three years. The scheme offers various incentives to manufacturers, such as exemption from paying road tax, registration fee and parking charges for various categories of electric and strong hybrid vehicles. FAME II lays emphasis on charging infrastructure.

The government has sanctioned ₹85.96 billion for incentives, of which ₹10 billion has been earmarked for setting up charging stations for electric vehicles in India. FAME II has been proposed to provide one slow-charging unit for every electric bus and one fast-charging station for every 10 electric buses. Given the amount of capital required for the procurement of electric buses, a feasible way to accelerate growth is through public private partnership (PPP). Under the PPP model, the government would select a private entity to perform some or all of its functions.

PPPs are an effective mechanism as they aid the government in getting the infrastructure by partnering with private entities, which have the finances and the expertise. This can be put into practice through a gross cost model where the operator (selected through a competitive bid process) operates and maintains the project for a mutually decided term. The capital cost for procurement of buses along with the maintenance and charging infrastructure would be borne by the operator. Revenue from users would be collected and appropriated by the government, thereby, absorbing the revenue risks for the operator. The operator can be compensated through an annuity payment calculated on the basis of the total distance covered, adjusted for any deductions on account of failure to comply with performance parameters.

Another model that may be adopted is shifting the onus of revenue risks on the private participant, where the revenue generated through user fare, advertising at the depots and bus stops and real estate development, etc., is collected and appropriated by the operator. Additionally, the capital cost

may be offset through viability gap funding (VGF). The VGF scheme, initiated by the Ministry of Finance, lends support to projects that are economically justified but not financially viable. The usual grant amount is up to 20% of the total capital cost of the project and funds for VGF are provided from the government's budgetary allocation, which is revised annually.

With the available technology, buying an electric bus is capital intensive but the costs are likely to reduce with technological advancements. However, the biggest operating cost for electric buses would be electricity and the operator would require some sort of protection. This may be achieved by compensating the operator for any increase in cost of electricity exceeding a prescribed threshold, calculated at periodic intervals.

Certain states such as Karnataka, Kerala and Maharashtra have already set out electric vehicle policies. These policies lay down rules for charging infrastructure, road tax, motor vehicle tax etc. There is a need to provide robust policy framework at the national level. The NITI Aayog (the government think tank) has developed a model concession agreement on the gross cost model and it is up to the state transport authorities to take the initiative and adopt the PPP model.