SUSTAINABLE PUBLIC BUS TRANSPORT FINANCING: INDIA

Summary Report

2020

Janaagraha Centre for Citizenship and Democracy
About Shakti Sustainable Energy Foundation:

Shakti Sustainable Energy Foundation works to facilitate India’s transition to a cleaner energy future by aiding the design and implementation of policies that promote clean power, energy efficiency, sustainable transport, climate policy and clean energy finance.

About Janaagraha Centre of Citizenship & Democracy:

Janaagraha Centre for Citizenship and Democracy (Janaagraha) is a Bengaluru based not-for-profit institution that is a part of the Jana group. Janaagraha’s mission is to transform quality of life in India’s cities and towns. It defines quality of life as comprising quality of infrastructure and services and quality of citizenship. To achieve its mission, Janaagraha works with citizens to catalyse active citizenship in city neighborhoods and with governments to institute reforms to City-Systems.

Shakti Sustainable Energy Foundation (SSEF) supported Janaagraha in 2019 to design a sustainable bus transport financing mechanism for India.

Janaagraha and SSEF collaborated during the 1st phase of the project to estimate the funding gap in select states/cities and develop an institutional framework that can help sustainably finance bus operations for both capital and O&M spends. Janaagraha immensely benefited from the continuous dialogue, brainstorming and co-creation with the SSEF team.
India is urbanizing rapidly; cities are likely to house 41% of India’s population by 2030* from 31% in 2011 (census). This rapid urbanization has led to the growth of private-vehicle ownership, thereby creating several issues such as traffic congestion, increased road accidents, air pollution and declining share of public transport.

Public Bus Transportation is the backbone of mobility for both, urban and rural areas in India. Out of total 1.6 million buses registered in India; the public bus sector operates around 1,70,000* buses carrying 70 mn people per day. The avg. age of fleet ranges from 2 yrs to 11.8 yrs*.

As per ICRA estimates (2016), 100 of the largest Indian cities require ~ $ 15.4 billion to procure 1,50,000 new buses and upgrade allied infrastructure. To bring in this scale of investment is a big challenge as most of the Indian State Transport Units (STUs) are financially constrained.

In this context, Shakti Sustainable Energy Foundation has appointed JCCD to undertake study on “Sustainable Financing of Public Bus Transportation in India” to assess the quantum of fund required for 5 Public Bus Transportation systems for next 10 years and to recommend a funding structure or mechanism for the same.

As a part of the study, 5 selected STUs were analyzed to understand their bus procurement and financial needs in the next 10 years. Their financial health, current sources of funding, and various schemes and supporting mechanisms in place were analyzed to further come up with a sustainable funding structure.
**APPROACH AND METHODOLOGY**

Selected STUs - TSRTC (rural/district), TSRTC (urban), KSRTC, MTC Chennai and BMTC

**Approach**

The study is undertaken in two parts -

• Demand estimation
• Assessing Financing mechanism

The study is undertaken with combination of primary and secondary research

**Secondary research involved**

- Review of various studies, reports and documents on – public transportation, e buses, financing urban infrastructure etc.
- Review of global and Indian STUs including five selected STUs – in terms of procurement models, revenue sources, role of private players, key enablers and challenges etc.
- Analysis of unaudited finances of 5 selected STUs in terms of trends in revenue and operating costs, their interlinkages

**Primary research involved**

- Interaction with key experts and OEMs
- To seek insights and validate findings of secondary research
- Review meetings with Shakti Energy Foundation’s team to validate and present findings
FLEET AND FUNDING ESTIMATION SCENARIOS

To analyze the fleet and funding demands for the selected 5 STUs, three scenarios were taken into consideration. These range from the Business As Usual (BAU), where estimates were directly drawn based on today’s status quo without factoring in any other changes, to an optimistic scenario assuming increase in demand due to service improvement to a more ambitious one involving e-buses in the fleet along with increased demand.

**Scenario 1
Business as Usual (BAU)
Demand and supply conditions**

- Fleet demand for the future is estimated based on past trends of operations (vehicle km operated per day; daily vehicle utilization, share of hired buses), assuming no change in vehicle technology.
- Additionally, in the case of TSRTC, the BAU is compared with a scenario of adopting 100% hired buses instead of the current scenario of a mix of owned and hired services.

**Scenario 2
Optimistic
Increased bus demand induced by improved service levels**

- For city level assessment: Bus fleet needs are estimated for the targeted mode share for buses derived from the public transport mode share targets set as a part of the sustainable mobility vision of the city’s Comprehensive Mobility Plan (CMP).
- For state level assessment: Bus fleet needs are estimated for a shift of 25% of the passenger rides from auto rickshaws to public transport, along with a steady rise of bus ridership.
- All buses are assumed to be BS-VI Non AC Diesel buses owned and operated in-house.

**Scenario 3
Ambitious
Scenario 2+ Electric buses**

- This scenario uses the fleet estimation from scenario 2 with the additional assumption of inducting electric buses along with diesel buses to fulfill the demand.
- Further, the scenario also assumes 100% electric bus procurement after 2023.
NEEDS ASSESSMENT FOR STUS
TSRTC STATE (RURAL/ DISTRICT)

The STU incurs losses across the scenarios analyzed, ranging from Rs. 13,670 Cr. to Rs. 38,228 Cr.

The deficit to be funded is found to be the least (Rs. 13,670 Cr.) under BAU when the buses are not totally owned by the STU, and highest (Rs. 38,228 Cr.) under the optimistic scenario.

Operating Expenditure (Opex) amounts to 97%, 99%, 94% and 82% of the Total Expenditure for the four scenarios respectively.
The STU incurs losses across the scenarios analyzed, ranging from Rs. 8,785 Cr. to Rs. 64,321 Cr.

The deficit to be funded is found to be the least (Rs. 8,785 Cr.) under BAU when the buses are not totally owned by the STU, and highest (Rs. 64,321 Cr.) under the ambitious scenario.

Operating Expenditure (Opex) amounts to 92%, 99%, 90% and 74% of the Total Expenditure for the four scenarios respectively.
NEEDS ASSESSMENT FOR STUs
MTC CHENNAI (URBAN)

The STU incurs losses across the scenarios analyzed, ranging from Rs. 28,093 Cr. to Rs. 1,14,859 Cr.

The deficit to be funded is found to be the least (Rs. 28,093 Cr.) under BAU and highest (Rs. 1,14,859 Cr.) under the optimistic scenario.

Operating Expenditure (Opex) amounts to 98%, 96% and 88% of the Total Expenditure for the three scenarios respectively.
The STU incurs losses across the scenarios analyzed, ranging from Rs. 31,119 Cr. to Rs. 57,506 Cr.

The deficit to be funded is found to be the least (Rs. 31,119 Cr.) under BAU and highest (Rs. 57,506 Cr.) under the ambitious scenario, which includes 100% e-buses after 2023.

Operating Expenditure (Opex) amounts to 95%, 94% and 80% of the Total Expenditure for the three scenarios respectively.
Needs Assessment for STUs
BMTC Bangalore (Urban)

<table>
<thead>
<tr>
<th>FLEET PROCUREMENT</th>
<th>Improved Public Transport + Electric bus Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 2031</td>
<td>17,853</td>
</tr>
</tbody>
</table>

The BMTC Vision plan envisages the growth for the next 10 years. According to the plan, the viable scenario for BMTC is the improved public transport scenario with procurement of only electric buses after the year 2023.

The deficit to be funded here is Rs. 20,862 Cr.

Operating Expenditure (Opex) amounts to 64% of the Total Expenditure.
Across STUs, the BAU trend points at stagnant service levels and increasing financial losses due to steady increase in staff and fuel costs. These costs are not matched with commensurate increase in fare levels due to affordability considerations of bus users. MTC Chennai and KSRTC, under BAU trend, incur losses worth Rs. 28,093 Cr. and Rs. 31,119 Cr. Respectively in next 10 years.

Meeting the sustainable transport vision identified by Hyderabad, Chennai and Bangalore points to the need for a 2-4-fold increase in the bus fleet size of these cities. As per our analysis, even rural and intercity service providers such as TSRTC and KSRTC will need to procure up to 18,645 and 29,958 in fleet size to cater the estimated demand for bus transport in the next 10 years.

Improving bus service levels and their transition to zero emission electric buses requires sustainable non-fare funding sources that support STUs’ Capital and Operational expenditure needs.

Further, the transition to electric buses would require higher investments given the higher capital needs of electric buses due to higher vehicle cost and supporting infrastructure needs such as charging and electric infrastructure.

For example, in the case of KSRTC, Capex required for the e-bus scenario (ambitious) is Rs. 40,555 Cr as against Rs. 10,884 Cr. otherwise. Similarly Opex for e-bus scenario for KSRTC reduces to Rs. 1,64,233 Cr from Rs. 1,74,152 Cr otherwise. This trend is constant across STUs.

A state level facility that funds STUs in-lieu of meeting the improved service and emissions performance needs to be set up. As discussed in the subsequent sections, this fund is designed after careful analysis of bus procurement trends, sources of funds, financial health of the STUs, and the existing guidelines and mechanism in place.

**KEY TAKEAWAYS**

1. Meeting the sustainable transport vision identified by Hyderabad, Chennai and Bangalore points to the need for a 2-4-fold increase in the bus fleet size of these cities. As per our analysis, even rural and intercity service providers such as TSRTC and KSRTC will need to procure up to 18,645 and 29,958 in fleet size to cater the estimated demand for bus transport in the next 10 years.

2. Across STUs, the BAU trend points at stagnant service levels and increasing financial losses due to steady increase in staff and fuel costs. These costs are not matched with commensurate increase in fare levels due to affordability considerations of bus users. MTC Chennai and KSRTC, under BAU trend, incur losses worth Rs. 28,093 Cr. and Rs. 31,119 Cr. Respectively in next 10 years.

3. Improving bus service levels and their transition to zero emission electric buses requires sustainable non-fare funding sources that support STUs’ Capital and Operational expenditure needs.

4. Further, the transition to electric buses would require higher investments given the higher capital needs of electric buses due to higher vehicle cost and supporting infrastructure needs such as charging and electric infrastructure.

5. A state level facility that funds STUs in-lieu of meeting the improved service and emissions performance needs to be set up. As discussed in the subsequent sections, this fund is designed after careful analysis of bus procurement trends, sources of funds, financial health of the STUs, and the existing guidelines and mechanism in place.
## Trend in Procurement of Buses

**Although GCC/NCC Models have been introduced but their adoption has been quite limited**

<table>
<thead>
<tr>
<th>Predominant Public Bus Procurement Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Outright purchase of buses continued to be priority for most of the STUs. However, policy push through NUTP-2006 and funding support under JnNURM scheme incentivized many STUs to adopt GCC and NCC kind of models, and in some cases hybrids of these models.</td>
</tr>
<tr>
<td>• Under GCC and NCC models, the bus is procured by either the STU or the private player, but the bus operations is with the private player</td>
</tr>
<tr>
<td>• The type of contract is decided based on key parameters – bus ownership, bus operation, responsibility for revenue collection and fare fixation</td>
</tr>
<tr>
<td>• Under FAME 1 scheme, launched in March 2015, 50% of the cities/STUs adopted GCC model while remaining 50% cities adopted Outright Purchase model (Total buses ~ 450)</td>
</tr>
<tr>
<td>• FAME-II scheme, launched in 2019, recommended GCC model. As electric bus is still a nascent technology with high capital cost and the STU capacity is inadequate to manage its operations, GoI recommended GCC Model (Total buses- 5545 for 64 STUs)</td>
</tr>
<tr>
<td>• GCC model promotes major role for the private players and to reduce the risk of capital and O&amp;M cost on STUs; and at the same time improve efficiency and service levels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comparison of various models across key parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model-</strong></td>
</tr>
<tr>
<td><strong>Functions</strong></td>
</tr>
<tr>
<td>Procurement of Vehicle</td>
</tr>
<tr>
<td>Bus operation</td>
</tr>
<tr>
<td>Bus maintenance</td>
</tr>
<tr>
<td>Route Planning and Scheduling</td>
</tr>
<tr>
<td>Monitoring</td>
</tr>
<tr>
<td>Fare Collection</td>
</tr>
<tr>
<td>Fare Fixation and revision</td>
</tr>
<tr>
<td>Provision of Infrastructure</td>
</tr>
</tbody>
</table>

- Only TSRTC shows wider adoption of GCC (>20% of fleet), BMTC, KSRTC and MTC Chennai, who have combined fleet of 28,743 buses are exploring GCC model only for FAME-II e- buses as its mandated by GoI. 
- Although GCC and NCC models promote larger participation of private players to improve service levels and reduce operating costs, STUs have still refrained from adopting them at scale. This may be attributed to no periodic revision in tariff, inadequate operational planning and absence of robust institutions. 
- As evident from above, these 5 STUs will need significant investment for outright purchase of buses as per the estimated demand.

JnNURM: Jawaharlal Nehru Urban Renewal Mission; FAME: Faster Adoption and Manufacturing of Hybrid and Electric vehicles
KEY TAKEAWAYS-2
WHY SPECIFIC PROCUREMENT MODELS ARE PREFERRED BY STUs

Many STUs continue to adopt **outright purchase and leasing models** because of –

- Lack of willingness to change existing procurement systems, influence by automobile industries and political decision makers as auto industry in India is a major industrial investor and job creator
- Resistance to change by legacy worker unions, opposition to PPP and outsourcing contracts

However, some STUs preferred **GCC and NCC models** because of -

- Push by funding and reforms under JnNURM during 2016-2014, many STUs adopted GCC and newly formed smaller STUs preferred NCC models
- In case of e - buses: the risk of high upfront cost, nascent technology and inadequate capacity of STUs to manage e buses, was transferred to private player through GCC model

Proactive STUs like Ahmedabad and Pune chose GCC model for diesel and CNG buses (part of the fleet) where the local ecosystem of various stakeholders and leadership played a major role in decision making

Although **OEMs** prefer Outright purchase, they are adopting other models such as GCC and NCC due to upfront subsidy available from government and to withstand market competition
Major source of own revenue for STUs is a Fare Box Revenue or traffic revenue, which constitutes 80% to 90% of their total revenue. However, most of these STUs incur operating losses and the funding for procurement of buses is largely done through:

- Government grants either through budgetary provisions or through state / centrally sponsored schemes like JnNURM, FAME etc.
- Borrowing from various financing entities, with state guarantees

Therefore, it is necessary to analyze the finances of select STUs to assess their financial health and explore alternative financing entity structure/ mechanism to fund the CAPEX and OPEX to meet the future demand.
MOST OF THE STUs INCUR OPERATING LOSSES AND NEED TO PAY FURTHER TAXES ON A COMMERCIAL BASIS DESPITE OF THEIR SOCIAL OBLIGATIONS

- There are 50+ government-run SRTCs in India and in FY17, combined operating losses of these STUs were INR16,400 cr, which is >33% that was in FY16 & 8 times that was in FY07), highlighting that managing OPEX is a big challenge
- Low non-traffic income at 5% of STU’s revenues (FY17) while the Manpower cost (35% to 60%) is a major component of the operating cost
- Financially constrained Indian STUs pay govt. taxes in the range of 1- 10 % of their revenue, (study year 2015)
- STUs pay 13 types of taxes, out of which 3 are from center
- Most significant direct taxes are Motor Vehicle Tax & Passenger Tax

Source: Taxation & its impact on Public Transport, Overview, Policy Distortions, and Potential Reforms, WRI India


ANALYSIS OF FINANCES OF STUS - KEY OBSERVATIONS

- Cumulative losses of five STUs is **INR 5,442 cr (FY17-19)**
- Wide range of operating losses to gross revenue: 4% (KSRTC) to 42% (MTC)
- Very less non-operating revenue (< 10%)
- State subsidy for concessions (8% to 13% of total Rev.)
- Manpower cost is a major component of the operating cost: manpower cost to Op. cost is 41% (KSRTC) to 61% (MTC, Chennai)

### Operating Performance of 5 STUs

<table>
<thead>
<tr>
<th>STUs</th>
<th>FY17 Gross Revenue (INR crore)</th>
<th>FY18 Gross Revenue (INR crore)</th>
<th>FY19 Gross Revenue (INR crore)</th>
<th>FY17 Operating Cost (INR crore)</th>
<th>FY18 Operating Cost (INR crore)</th>
<th>FY19 Operating Cost (INR crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMTC</td>
<td>2,293</td>
<td>2,643</td>
<td>3,724</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>KSRTC</td>
<td>5,811</td>
<td>4,883</td>
<td>3,859</td>
<td>7</td>
<td>1,546</td>
<td>21</td>
</tr>
<tr>
<td>TSRTC</td>
<td>1,546</td>
<td>1,859</td>
<td>8</td>
<td>-</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>MTC, Che.</td>
<td>4,000</td>
<td>3,724</td>
<td>3,859</td>
<td>43</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>AICTSL</td>
<td>6,000</td>
<td>5,811</td>
<td>4,883</td>
<td>43</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

### Non-Operating to Gross Revenue %

<table>
<thead>
<tr>
<th>STUs</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMTC</td>
<td>6%</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>KSRTC</td>
<td>5%</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>TSRTC</td>
<td>5%</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>MTC, Che.</td>
<td>8%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>AICTSL</td>
<td>4%</td>
<td>14%</td>
<td>7%</td>
</tr>
</tbody>
</table>

### HR cost/Operating cost

<table>
<thead>
<tr>
<th>STUs</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMTC</td>
<td>53%</td>
<td>53%</td>
<td>53%</td>
</tr>
<tr>
<td>KSRTC</td>
<td>43%</td>
<td>42%</td>
<td>41%</td>
</tr>
<tr>
<td>TSRTC</td>
<td>52%</td>
<td>50%</td>
<td>49%</td>
</tr>
<tr>
<td>MTC, Che.</td>
<td>61%</td>
<td>61%</td>
<td>61%</td>
</tr>
</tbody>
</table>

Source: Unaudited finances of BMTC, KSRTC, TSRTS, MTC and AICTSL

Telangana State Road Transport Corporation (TSRTC), Karnataka State Road Transport Corporation (KSRTC), Bengaluru Metropolitan Transport Corporation (BMTC), Metropolitan Transport Corporation (Chennai) Ltd. (MTC, Chennai), Atal Indore City Transport Services Limited (AICTSL)
Although STUs heavily rely on state and central grants, they also borrow from various agencies like commercial banks, state finance intermediaries etc.

- For instance, BMTC swapped Commercial loan (@10%) to KUIDFC loan (@6.5%) under Mega City Scheme Fund
- The interest rate on borrowing varies substantially from 6.5% to 10.75% and in some cases goes up to 14% (Delhi’s DTC)
- KSRTC and BMTC have availed loans under Mega City Scheme (till 2015) & then Mega City Revolving Fund (MCRF), apart from central schemes
- All 5 STUs have availed grants under central schemes like JnNURM and FAME

<table>
<thead>
<tr>
<th></th>
<th>BMTC</th>
<th>MTC Chennai</th>
<th>KSRTC</th>
<th>TSRTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int. Rate for Borrowing</td>
<td>6.5%</td>
<td>8% - 9%</td>
<td>8.5%-9%</td>
<td>10.5%-10.75%</td>
</tr>
<tr>
<td>Lending Agency</td>
<td>KUIDFC*</td>
<td>TFDC*</td>
<td>Banks, Fls, KUIDFC</td>
<td>Banks</td>
</tr>
<tr>
<td>Loan outstanding, INR Cr.</td>
<td>1,614</td>
<td>347</td>
<td>748</td>
<td>249</td>
</tr>
</tbody>
</table>

*Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC)
Tamil Nadu Transport Development Finance Corporation Ltd. (TDFC Ltd.)
Financial health of STUs doesn't allow them to access the kind of capital needed not only for supporting procurement of buses but also for managing their operating deficit. Although, STUs might procure buses under grant from government schemes but for bridging the operational losses they need continuous support.

STUs also lack other capacities* (project management, contract structuring etc.) which further impacts their operations and finances. As STUs can't deploy buses for future demand with available financial resources, we need alternative financing mechanism for supporting STUs.

There is need for alternative Financing Mechanism such as State level Bus Transport Fund (SBTF) to support the CAPEX and OPEX of the Public Bus Transportation system.

TRANSPORT FINANCING ENTITY - EXISTING GUIDELINES & MECHANISM

There is a recognised need to create or use alternate financial structures such as State level Bus Transport Fund (SBTF) to address capital requirement and financial operating gap of STUs. To frame the structure and functions of the SBTF, we evaluated various existing initiatives, guidelines and state level transport specific funds. In this regard, we have evaluated following -

MoHUA guidelines UTF


• There are around 15 UMTAs formed under this and most of them are not functional.

• Some states like Punjab and Andhra Pradesh are charging cess on petrol and diesel to fund the UTF.

Karnataka STF

• Karnataka has set up State Transport Fund (STF) under Dept. of Land Transport (DULT).

• It supports - Traffic, Capacity building, awareness on traffic related issues - Projects aimed at popularizing NMT, innovative pilot projects, lending soft loans to govt. agency/ statutory body.

• State allocates INR 50 to 60 Cr annually to STF.

Tamil Nadu TDFC Ltd.

• Tamil Nadu - Transport Development Finance Corporation Ltd. (TDFC Ltd.), established in 1975, with objective of developing fund for capital and working capital requirements of STUs in Tamil Nadu.

• It takes deposits from citizens and lend it to STUs at 8%-10% interest rates.

• TDFC received interest-free loan of INR 713 Cr. from GoTN, later it converted into equity in 2019.

Gujarat Viability Gap Funding

• Gujarat Viability Gap Funding scheme -To support Urban Bus Services in Gujarat, Govt. of Gujarat has launched a scheme to provide Viability Gap Funding (VGF) to TA & ULBs.

• Known as Gujarat – Chief Minister Urban Bus Service Scheme.

• Only operations cost with PPP mode will be part funded for a period of 7 years.

• VGF of 50% or INR 12.50 per km will be given to ULBs.

MoHUA: Ministry of Housing and Urban Affairs, Govt. of India
# KEY TAKEAWAYS-4:
LEARNINGS FROM UTF GUIDELINES AND EXISTING STATE FUNDS

<table>
<thead>
<tr>
<th><strong>MoHUA guidelines on UTF</strong> are very comprehensive in nature for setting up the Fund Division within UMTA. Some of these guidelines related to sources of funds, its utilisation are considered while drafting recommendations for the proposed SBTF.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Karnataka SUTF</strong> is set up under Department of Urban Land Transport (DULT) and functions as one of the departments of DULT. Thus, it has very limited autonomy, complete reliability on state budget, smaller scale of funding (upto INR 100 Crores) and limited or no access to private capital. Learning from this, we have proposed – (a) trust and fund manager like structure for the proposed SBTF and (b) recommended a mechanism to access the capital from IFIs.</td>
</tr>
<tr>
<td><strong>In case of Tamil Nadu - TDFC,</strong> key challenges are - concentrated deposit profile, weak profitability, modest risk profile given TDFC’s borrower segment i.e. STUs. It does not leverage on its large equity and deposit base to access private or IFI’s capital from market thus limiting its reach. Learning from this, we have recommended in SBTF, a mechanism to access the capital from IFIs.</td>
</tr>
<tr>
<td><strong>Gujarat VGF model</strong> is a unique model of funding the operating cost of STUs for their PPP models of bus operations for 7 years. We have adopted key features of this model in our recommendations for the SBTF, to fund the operating deficit of the STUs.</td>
</tr>
</tbody>
</table>
It is proposed that SBTF needs to be formed by equity contribution from the State Govt. and IFIs and/or commercial banks.

The fund will raise grants and loans from various government sources and IFIs.
Two major sources of fund for SBTF:

1. **Government sources** at three levels – Central, State and ULBs or UDA

2. **Borrowing** from International Finance Institutes (IFIs)
   - Access low cost capital from Development Banks with government guarantee

**EXPLORE:**
- Land monetization to ensure financial sustainability, state govt. will provide policy guidelines on this
- Part of the revenue generated through Transit Oriented Development – and further develop Terminals and Stations on PPP/commercial basis

PROPOSED SBTF - SOURCES OF FUND: GOVERNMENT SOURCES

The sources of fund should be sustainable and remain available for a long period of time i.e. the revenue keeps flowing continuously over a long period. Following are the sources that will be available for long period of time:

**NATIONAL LEVEL**

1. Funds from Central Road & Infra. Fund (CRIF)
2. Grants under Finance Commission
3. Funds from National Investment Fund (NIF)
4. Funds from National Investment & Infrastructure Fund (NIIF)
5. Funds from centrally sponsored schemes (such as AMRUT/ Smart City/ FAME-II/ Green Mobility)

**STATE LEVEL**

1. Green tax
2. Additional vehicle registration charges
3. Additional charges on registration of more than one ‘motor car’ with an existing ‘motor car’ owner
4. Cess on fuel sold
5. Additional levy on conversion of land use charges
6. Transfer of land parcels to SBTF to develop on commercial basis

**ULBS/RLBS**

1. Cess on property tax in influence zone of Transit-Oriented Development corridor
2. Additional parking charges
3. Additional charge on advertising fee/ tax
4. Tax on employers
5. Congestion Charge
6. % of capital expenditure by ULBs on road and infra. to be allocated to SBTF
## Proposed SBTF - Sources of Fund: Summary

### What Goes Into Potential SBTF from Government & Other Sources

<table>
<thead>
<tr>
<th>Sources</th>
<th>Source can be tapped in the -</th>
<th>Source can be used as -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short or long term</td>
<td>Grant</td>
<td>Debt</td>
</tr>
<tr>
<td><strong>Central Govt. level sources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Central Road and Infrastructure Fund</td>
<td>LT</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2. Finance Commission grant</td>
<td>ST</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>3. Current Central schemes (AMRUT/ Smart City/ Green Mobility Scheme)</td>
<td>ST</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>4. Funds from National Investment Fund (NIF)</td>
<td>LT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Funds from National Investment &amp; Infrastructure Fund (NIIF)</td>
<td>LT</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>State Govt. level sources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Green Tax</td>
<td>ST</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>2. Additional Vehicle Registration Charges</td>
<td>LT</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>3. Surcharge on owning &gt; 1 motor vehicle</td>
<td>LT</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>4. Cess on fuel sold</td>
<td>ST</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>5. Additional levy on conversion of land use charges</td>
<td>LT</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>6. In lieu of above, certain % on revenue under State MV Act and MV tax Act</td>
<td>ST</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>7. Premium on development of land parcel by SBTF on commercial basis</td>
<td>LT</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

- Initial equity capital can be provided through State budget and/or Central Govt
- Contribution + equity capital from IFIs and/or Commercial Banks + equity contribution from NIF and NIIF can be explored
- E.g. TNUDF has total equity of INR 200 Cr with contribution from GoTN (72%) and Banks/ NBFC (28%)
- Enhancing equity by infusing more capital in future
- Cost of land parcel allocated by State govt. can go as equity of State Govt.
- Potential fund size for Tamil Nadu is around 2550 crore per annum considering IFI and government sources (click here for more details)

<table>
<thead>
<tr>
<th>Sources</th>
<th>Source can be tapped in the -</th>
<th>Source can be used as -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short or long term</td>
<td>Grant</td>
<td>Debt</td>
</tr>
<tr>
<td><strong>ULB level sources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cess on property tax in influence zone of Transit-Oriented Development corridor</td>
<td>ST</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>2. Additional parking charges</td>
<td>LT</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>3. Additional charge on advertising fee/ tax</td>
<td>LT</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4. Tax on employers</td>
<td>LT</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>5. Congestion Charge</td>
<td>LT</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>6. % of capital expenditure by ULB on road and infra. to be allocated to SBTF</td>
<td>ST</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>7. In lieu of above, % of total annual revenue of all ULBs in the state</td>
<td>ST</td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

- Short Term | ST | Long Term | LT |
PROPOSED SBTF — FUNCTIONS OF FUND

UTILIZATION OF FUNDS FOR CAPEX AND OPEX & PROJECT PREPARATION ECOSYSTEM

SBTF can be utilized for thrust sectors for supporting their Capex and Opex requirements. It will also help in creating/strengthening the project preparation ecosystem whereby project development grant will be provided.

1 Capex support
Grant & loan for procurement of buses & allied infra., VGF for STUs.

2 Opex subsidy
For STUs as VGF grant for operational losses, debt servicing

3 Conducting studies/DPRs
Appoint consultants for preparation of CMP, Business Plan of STUs, route rationalization, capacity building etc.

4 Intermodal integration
common ticketing, public information

5 Financial support
To take up initiatives to increase Non op. income - land monetization, TOD, Advt. revenue etc.

6 Others
Project preparation, structuring, procurement & contract mgmt., Transaction Advisory, support in capital market access to STUs

Thrust sectors
- Buses and allied infrastructure
- BRTS
- Last mile connectivity
- E buses and allied infra. (charging infra., solar system)
- Intelligent Transport Systems (ITS) and other IT and technology interventions
- Training and capacity building
## PROPOSED SBTF – MOBILIZATION OF FUND

SBTF can be utilized for thrust sectors for supporting their Capex and Opex requirements, and for project development activities through various ways, which are explained below:

<table>
<thead>
<tr>
<th>Utilisation mechanism</th>
<th>Activities/ Components</th>
<th>Existing examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loan</strong></td>
<td>• Debt can be used for creating assets, e.g. Purchasing buses, developing - Bus Depot, BRTS system, ITMS system etc.</td>
<td>• Govt. sources, IFIs or Commercial Banks provide loans to STUs for bus procurement and supporting infrastructure development</td>
</tr>
</tbody>
</table>
| **Capital grant**     | • Capital grant for procurement of buses under various models  
• Viability Gap Funding (VGF) for developing other TDF Ltd. Provides allied infrastructure such as bus depot/ terminal, bus stops, ITMS system etc. which can be developed on EPC or PPP model  
• E.g. VGF grant upto 25% of the total project cost for allied infrastructure projects | • TDFC Ltd. provides loan to STUs in TN, Mega City Revolving Fund provides loans to Bangalore and Chennai metropolitan areas |
| **VGF – Operations** | • As a subsidy for covering annual operating deficit of STUs either fully or partially  
• In case STUs opt for PPP models for bus procurement like GCC or NCC models, then for the new procurement, the VGF can be provided as a grant (upto 50% of project cost) to support the operating cost for 5-7 years. This is to promote PPP (GCC and NCC) models. | • Project Sustainability Grant Fund (PSGF) managed by TNUIFSL, through which GoTN provides VGF for Urban Infra. projects of ULBs  
• VGF by Gujarat for procurement of new buses on PPP (GCC, NCC models) |
| **Project Preparation Grant (PPG)** | • Conducting studies/ DPRs - appointing consultants for preparation of CMP, Business Plan of STUs, route rationalization, technical studies and bid processes, capacity building etc.  
• To take up initiatives to increase Non operating income of STUs e.g. for land monetization – grant support for preparation of policy, carrying out Transaction Advisory Services etc.  
• E.g. Developing action plan for exploring newer sources or strengthening existing sources of revenues of STUs | • IFIs or Commercial Banks contribute 5-10% of their overall financing commitment  
• Project Development Grant Fund (PDGF) managed by TNUIFSL |
| **Other partnerships** | • Leveraging on other partnerships such as Technical support available for capacity Building and training from various organisations | • GIZ provides technical assistance for e mobility and Urban Transportation in select Smart Cities in India |
PROPOSED SBTF — INSTITUTIONAL STRUCTURE
ASSESSMENT OF EXISTING SUCH INSTITUTIONS IN URBAN SECTOR

Now the question is - how to Institutionalise the SBTF? In this context, we have analysed the following Urban Infrastructure Development Finance Corporations (UIDFCs) by assessing their structure, role, functions and funding mechanism.

KUIDFC
- KUIDFC manages projects worth ~ INR 8,500 Cr. including externally aided projects and government schemes.
- It’s major sources of income are Management fees representing the reimbursement received from GoK for operational costs incurred.
- However, it’s role is limited as a nodal agency which manages the projects without any margin over borrowings unlike TNUIFSL.

TUFIDCO
- TUFIDCO was incorporated in 1990, under the Companies Act, 1956 by GoTN (97%) and ULBS+ HUDCO (3%)
- It’s role is to provide financial assistance and guidance to Local bodies, Corporations, Boards, Authorities and parastatal agencies for their development schemes.
- It’s a nodal agency to implement Government programmes/schemes in the state through Tamil Nadu Urban Infrastructure Development and Renewal Fund (TNUIDRF)
- It’s role is limited as a nodal agency to manage government schemes such as JnNURM, UIDSSMT etc.

TNUDF and TNUIFSL
- TNUIFSL manages the main fund i.e. TNUDF plus strengthens the financing ecosystem and supports ULBs in developing financially viable projects by assisting project preparation activities and extending viability gap funding through support funds like PDGF and PSGF.
- TNUIFSL has 24+ yrs of experience in managing Multilateral funds, floating bonds, accessing capital markets and has expertise in project development and structuring.
- Therefore, existing institutional mechanism like TNUDF as a fund (registered as trust) and TNUIFSL as a fund manager (registered as public ltd. Company) is very appropriate for the proposed SBTF.

Some of the points that have to be considered while institutionalizing the fund:
- It can be housed in an existing institution with capability to act as fund manager
- It’s structure should allow it to access capital in form of loan from market/ IFIs
- It should have capabilities to make professional investment decisions

PROJECT DEVELOPMENT GRANT FUND (PDGF)
PROJECT SUSTAINABILITY GRANT FUND (PSGF)
The proposed SBTF is a state level entity and can be an independent fund. While a detailed organisation structure and nature of legal status of the SBTF depends on many factors which need to be evaluated, broadly two suggestions can be made for the institutional structure.

Option 1

SBTF can be registered as a **new Trust and a separate trustee company to be created to manage the trust.** An existing UIDFC in the state can act as a **Fund Manager or a separate entity** can be formed for the same.

**Eg:**
- Karnataka - KUIDFC acts as a fund manager for Karnataka Water and Sanitation Pooled Fund Trust (KWSPF Trust) and Megacity Revolving Fund (MCRF)
- Tamil Nadu - TNUIFSL acts as a Fund Manager for Tamil Nadu Urban Development Fund (TNUDF) and other supporting funds such as PDGF and PSGF

Option 2

SBTF can be a part of **existing government department, like Department of Land Transport (DULT).** The Functions of SBTF can be managed by a **fund management division under the department.** The FMD is envisaged to manage all matters pertaining to SBTF, including collection and disbursement of funds.

**Eg:**
As per MoHUA guidelines, UTF acts as a fund division within UMTA, which is set up at metropolitan level. Additionally UMTA looks after all modes of urban transportation including bus, metro rail, monorail, NMT etc.

In case, a metropolitan city forms UMTA, the SBTF can lend it to the UMTA instead of the respective STU based on a certain guideline to solely use that allocation for supporting Public Bus Transportation.
SBTF as a Trust with a separate Corporate Trustee managing it.

A separate existing or new entity can act as a fund manager for the SBTF.

- For instance, in case of Tamil Nadu - TNUIFSL act as a fund manager for TNUDF, similarly, it can act as a Fund Manager for SBTF.
- TNUIFSL manages other supporting funds such as PDGF for project development support and PSGF for viability grant funding. These funds can act as supporting funds for SBTF.
EXAMPLE FOR INSTITUTIONALIZING SBTF UNDER GOVT. DEPARTMENT

SBTF as a part of existing state level entity/authority on land transportation, eg. DULT, which will be responsible to look after it’s management.

A department within the chosen entity/authority, eg. A Fund Management Division (FMD) can act as a fund manager for the SBTF.

- Urban Transport Fund (UTF) acts as a fund division within UMTA and it’s Fund Management Division (FMD) acts as the fund manager for UTF.
PROPOSED SBTF — INSTITUTIONAL STRUCTURE

These two options are feasible under different enabling conditions as mentioned below:

• For Option 1- SBTF as a separate Trust requires Presence of active UIDFC like entity with previous experience of
  - managing sizeable funds/ projects, e.g. above INR 1,000 crore
  - raising funds from commercial lenders and external financing institutions
  - project development activity

• For Option 2- SBTF as a Division/ Department within govt. requires presence of existing department/ agency or potential for creating such department/division with
  - political buy in
  - making budget provision for creating a fund
  - potential for creating ecosystem for project development activity
ANNEXURES
Overview
The following approach was adopted to estimate:

1. **Fleet Estimation**
   - Bus fleet needs for the city/case state
   - Alternative Scenarios
   - Travel demand projections and Fleet estimation

2. **Infrastructure Needs**
   - Phasing of fleet procurement
   - Phasing plan for fleet induction and supporting infrastructure development
   - Infrastructure requirement for fleet inc. Depot, Stations, Workshops and TTMCs and total land requirement

3. **Fund Requirement**
   - Funds needed to meet the Capital and Operating expenses
   - Assessment of Capital Cost required
   - Assessment of Operating Cost required
   - Assessment of Revenue to be generated
   - Assessment of annual funding gap in OPEX and CAPEX
**Tamil Nadu Urban Development Fund (TNUDF) and Tamil Nadu Urban Infrastructure Financial Services Ltd. (TNUIFSL)**

**TNUDF:** In 1996, Govt. of TN converted Municipal Urban Development Fund (MUDF) into TNUDF

- It has total equity of INR 200 crore, with GoTN share 72% & rest by banks/NBFC (ICICI, HDFC Bank and ILFS), and TNUDF is managed by a Corporate Trustee viz., Tamil Nadu Urban Infrastructure Trustee Company Limited (TNUITCL) and TNUIFSL is a fund manager
- Objective: to fund urban infra. projects, facilitate pvt. Participation, support ULBs to access debt
- TNUDF is financing urban infra. projects by availing external funds.
- E.g. TN Sustainable Development Project (TNSUDP) assisted by World Bank

**TNUIFSL, a public Ltd. co. formed in 1996, with equity participation by GoTN, ICICI Bank, HDFC Ltd. & IL&FS**

- It is fund manager for TNUDF, PDGF, PSGF, WSPF and GoTN schemes; PDGF and PSGF funds support in project development and preparation, provide viability grant etc.
- TNUIFSL as a fund manager manages sources funds in the form of loan from WB (50%), KfW (30%), ADB (8%), JICA (7%) and Others (5%)
- Expected margin on lending is around 1%; TNUIFSL successfully mobilized bonds under WSPF
- TNUIFSL’s role as a fund manager is very effective in managing the main fund i.e. TNUDF and other supporting funds i.e. PDGF and PSGF for creating investment ecosystem. It has also managed a margin of 0.5% to 1% to ensure financial sustainability of its own organisation.

### MUDF to TNUDF

1988

**MUDF**

1996

**Trust - TNUITCL**

Shareholders/ Unit holders (GoTN, ICICI, HDFC, ILFS)

**TNUDF**

**TNUIFSL**

Fund Manager

- **Lenders**
  - Multi-laterals
  - FIs/Banks
  - Bond holders

### TNUIFSL - Key Finances

<table>
<thead>
<tr>
<th>Amount in INR crore</th>
<th>FY 2018</th>
<th>FY 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Income</td>
<td>222</td>
<td>196</td>
</tr>
<tr>
<td>Total Exp.</td>
<td>203</td>
<td>180</td>
</tr>
<tr>
<td>Net Income</td>
<td>11.4</td>
<td>9.9</td>
</tr>
<tr>
<td>Avg. Return on lending</td>
<td>8.83%</td>
<td>8.78%</td>
</tr>
<tr>
<td>Cost of funds</td>
<td>8.31%</td>
<td>8.29%</td>
</tr>
<tr>
<td>Total Assets</td>
<td>3,023</td>
<td>2,611</td>
</tr>
<tr>
<td>Net Worth</td>
<td>266</td>
<td>255</td>
</tr>
</tbody>
</table>

Source: TNUIFSL website, ICRA Rating Rationale
POTENTIAL SBTF FUND SIZE — CASE STUDY OF TN

An illustration for estimating the potential size of the SBTF in case of Tamil Nadu state.

1. The contribution from Govt. sources -
   - In case of TN, tapping govt. sources would contribute around INR 1,450 crore/ annum to the SBTF
   - This includes both grant and debt
   - Initial equity capital provided through
   - State budget and/or Central Govt contribution + equity capital from IFIs and/or Commercial Banks + equity contribution from NIF and NIIF can be explored
   - E.g. TNUDF has total equity of INR 200 cr with contribution from GoTN (72%) and Banks/ NBFC (28%)
   - Enhancing equity by infusing more capital in future
   - Cost of Land parcel allocated by State govt. can go as equity of State Govt.

<table>
<thead>
<tr>
<th>Sources (Amount in INR Cr)</th>
<th>Feasibility</th>
<th>Esti. Annual Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Govt.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Central Road Fund (CRF)</td>
<td>At 5% of annual state allocation</td>
<td>100</td>
</tr>
<tr>
<td>2. FC XV devolution</td>
<td>At 2% of annual state allocation i.e. 2% of INR 8,420 cr.</td>
<td>168</td>
</tr>
<tr>
<td>3. Funds from NIF</td>
<td></td>
<td>---</td>
</tr>
<tr>
<td>4. Funds from central schemes (such as AMRUT/ Smart City/ Green Mobility)</td>
<td>Expected INR 7,000 cr allocation for TN; 10% of INR 7,000 cr as loan &amp; grant (it’s divided into 5 yrs)</td>
<td>140</td>
</tr>
<tr>
<td><strong>State Govt.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. State MV Act and MV tax Act</td>
<td>5% of total annual receipts under State MV Act and MV tax Act. For TN: 5% of INR 6,019 cr in FY 21</td>
<td>300</td>
</tr>
<tr>
<td>2. Development of land parcels on commercial basis</td>
<td>State can develop land parcels on commercial basis on long term lease with upfront premium or PPP</td>
<td>100</td>
</tr>
<tr>
<td><strong>ULB sources</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Share of ULB revenue</td>
<td>In case of TN, 2% of ULBs’ estimated annual revenue of INR 32,231 cr. can be allocated to SBTF</td>
<td>645</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1,453</td>
</tr>
</tbody>
</table>
2. The contribution from IFIs as Loan + grant:

**Rationale**
- DFIs play an important role in lending to financially constrained State and Local Bodies.
- Provide cheaper finance (Int. 1-3% excl. hedging cost) with longer tenure (10-30 yrs) & moratorium (3-7 yrs).

**Challenges/ Disadvantages**
- Approval is routed through Department of Economic Affairs (DEA) and other relevant ministries of GoI, which is a cumbersome process.
- State borrowing is reaching a threshold for fiscal deficit to GSDP norms. E.g. TN's Fiscal Deficit to GSDP will be 2.84% in FY21, against the norm of 3%.

**Case study**
- TN has secured loan commitment of around INR 47,000 Cr from DFIs during 3-4 yrs.
- This amount will be disbursed over a period of 7-8 yrs, which translates to:
  - **Total annual commitment**: INR 6,700 Cr &
  - **Allocation for transport sector**: INR 3,300 Cr/yr

<table>
<thead>
<tr>
<th>DFI, (amount in INR Crores)</th>
<th>Loans/ fund committed, Last 3 - 4 yrs</th>
<th>Allocation for Transport</th>
<th>Transport allocation Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>JICA</td>
<td>20,626</td>
<td>8,715</td>
<td>Metro, Peripheral Ring Road, Intelligent Transport systems, Port dredging</td>
</tr>
<tr>
<td>ADB</td>
<td>6,623</td>
<td>800</td>
<td>TN Industrial road connectivity project</td>
</tr>
<tr>
<td>World Bank</td>
<td>8,463</td>
<td>2,271</td>
<td>Rural roads</td>
</tr>
<tr>
<td>KfW, Germany</td>
<td>1,575</td>
<td>1,575</td>
<td>Bus procurement - to procure 2,213 new buses under BSVI norms and 500 electric buses worth Rs 1,580 crore</td>
</tr>
<tr>
<td>Asian Infrastructure Investment Bank (AIIB)</td>
<td>10,000</td>
<td>10,000</td>
<td>Chennai Metro Rail, Ring Road</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47,287</strong></td>
<td><strong>23,361</strong></td>
<td><strong>–</strong></td>
</tr>
</tbody>
</table>

- In future, TN can secure 1/3rd of total transport commitment of around INR 1,100 Crores/yr for SBTF as a mix of loan + grant.
- The grant component will be very less (around 5-10%) which can be used for project preparation support and VGF for project CAPEX.
PROPOSED SBTF – POTENTIAL FUND SIZE
CASE STUDY OF TN

Illustration for estimating the potential size of the SBTF in case of Tamil Nadu state.

Government Sources (Debt + Grant)

INR 1,450 Cr/ Annum

IFIs (Debt + Grant)

INR 1,100 Cr/ Annum

Total Fund Size (Debt + Grant)

INR 2,550 Cr/ Annum

- Initial equity capital can be provided through State budget and/or Central Govt contribution + equity capital from IFIs and/or Commercial Banks + equity contribution from NIF and NIIF can be explored

- E.g. TNUDF has total equity of INR 200 cr with contribution from GoTN (72%) and Banks/ NBFC (28%)
**TREND IN PROCUREMENT OF BUSES**

**WE NEED TO LOOK AT DIFFERENT PROCUREMENT MODELS AND ASSESS FINANCIAL HEALTH OF STUs**

### 3 Predominant Public Bus Procurement Models

- Outright purchase of buses continued to be priority for most of the STUs. However, policy push through NUTP-2006 and funding support under JnNURM scheme incentivized many STUs to adopt GCC and NCC kind of models, and in some cases hybrids of these models.

- Under GCC and NCC models, the bus is procured by either the STU or the private player, but the bus operations is with the private player.

- The type of contract is decided based on key parameters – bus ownership, bus operation, responsibility for revenue collection and fare fixation.

#### Comparison of various models across key parameters

<table>
<thead>
<tr>
<th>Model-&gt; Functions</th>
<th>Open Market with regulations</th>
<th>NCC</th>
<th>GCC</th>
<th>Monopoly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement of Vehicle</td>
<td>P</td>
<td>P or G</td>
<td>P or G</td>
<td>G</td>
</tr>
<tr>
<td>Bus operation</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>G</td>
</tr>
<tr>
<td>Bus maintenance</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>G</td>
</tr>
<tr>
<td>Route Planning and Scheduling</td>
<td>P</td>
<td>P and G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>Monitoring</td>
<td>-</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>Fare Collection</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>G</td>
</tr>
<tr>
<td>Fare Fixation and revision</td>
<td>P and G</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>Provision of Infrastructure</td>
<td>P (if required)</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
</tbody>
</table>

---

**Advanced NCC**

Royalty based, Routes Sold

**STU owned & operated**

Cost Plus contract: Pune, Jaipur

Net Cost Contract (NCC): Indore, 11 more cities

Gross Cost Contract (GCC) - 1st Ver. - Ahm

GCC – 2nd & 3rd Ver.: FAME-II, TSRTC, BMRTC, Pune, Ahm

Outright purchase continued to be preferred model by many STUs

Promoted under JnNURM Scheme

JnNURM: Jawaharlal Nehru Urban Renewal Mission; FAME: Faster Adoption and Manufacturing of Hybrid and Electric vehicles
**FAME SCHEME: E-BUS PROCUREMENT: MIX OF OWN PURCHASE + GCC MODEL**

Faster Adoption and Manufacturing of Hybrid and Electric (FAME) Vehicles is part of the National Electricity Mobility Mission Plan (NEMMP)

### FAME-I scheme

- GoI launched the FAME-I program in Mar 2015 to provide a push for early adoption and market creation for both hybrids and EVs.
- Under FAME-I scheme, GoI provided subsidy to 11 cities for procuring > 450 buses: 12 m size bus: INR 100 Lakh subsidy and 9 m size bus: INR 74 Lakh subsidy
- Among them, 50% of the cities/STUs adopted GCC model while remaining 50% cities adopted Outright Purchase model
- Length agnostic subsidy resulted in STUs preference (65% of total buses) for 9 m buses

### Cities & procurement models adopted under FAME-I

<table>
<thead>
<tr>
<th>Model</th>
<th>Cities</th>
<th>No. of Buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC</td>
<td>Bangalore, Mumbai, Hyderabad, Ahmedabad, Jaipur</td>
<td>240 (mix of both 9m and 12m size; AC/ non AC)</td>
</tr>
<tr>
<td>Outright Purchase</td>
<td>Indore, Lucknow, Kolkata, Jammu, Guwahati</td>
<td>150 (mix of both 9m and 12m size; AC/ Non AC)</td>
</tr>
</tbody>
</table>

### FAME-II scheme

- FAME-II scheme was launched in 2019, where total 5,545 e buses were sanctioned for 64 STUs on GCC model. Electric bus is still a nascent technology with high capital cost and the STU capacity is inadequate to manage its operations.
- Therefore, GoI has recommended GCC model to promote major role for the private players and to reduce the risk of capital and O&M cost on STUs; and at the same time improve efficiency and service levels.
- The STUs will get subsidy of INR 50 lakh per e-bus. Many STUs have started bidding process for this.

Source: UITP Report on Electric buses procurement in India – Indian cities got the viable rates; RMI Report