

ELECTRIC BUSES PROCUREMENT IN INDIA – INDIAN CITIES GOT THE VIABLE RATES

1. INTRODUCTION

Last 2 months has witnessed a greater action in the space of electric buses. Department of Heavy Industries (DHI), Government of India sanctioned INR 4.37 billion (US\$ 67 million) for the procurement of electric buses, e-taxis and e-autos in December 2017. The department has selected 11 cities with one million-plus population for the procurement of 390 electric buses, and is providing funds to the tune of INR 10 million (US\$ 150,000) per bus.

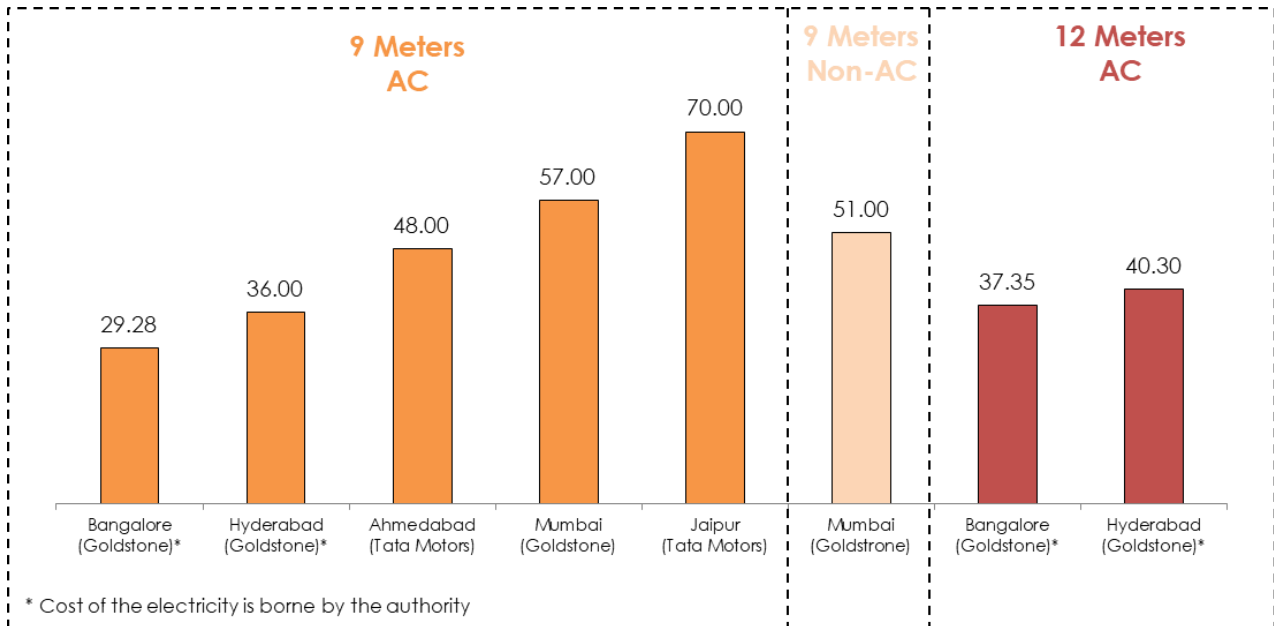
The department has sanctioned 40 buses for every city under the pilot project, except 15 buses each for Guwahati and Jammu. However, BMTC (Bengaluru Metropolitan Transport Corporation) in Bengaluru is considering 150 buses and TSRTC (Telangana State Road Transport Corporation) in Hyderabad has decided to take 100 buses. 10 out of 11 cities floated the tender within 15 days, except Delhi which is planning to procure 700 e-buses separately using state budget. Interestingly, all 10 cities completed the tender process within one month and received good response from the industry.

The department allowed the cities to choose the procurement method from the options of Outright Purchase or Gross Cost Contract (GCC).

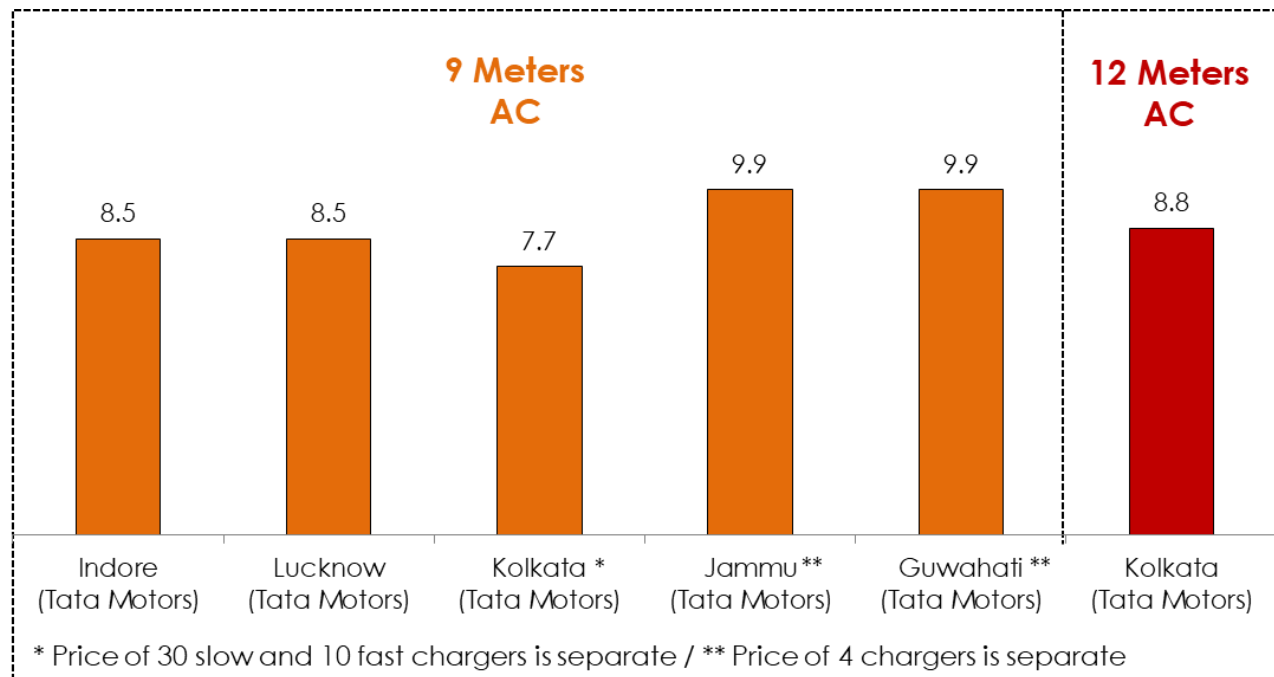
- In case of outright purchase, DHI provides 60 percent subsidy and the rest is provided by the State road transport corporations. 5 cities (Indore, Lucknow, Kolkata, Jammu and Guwahati) released tenders under outright purchase model.
- On the other hand, the buses would be operated and maintained by the supplier at a fixed cost per km under GCC. Under the FAME Scheme, the city expects to receive subsidy of upto 60% of the capital cost of Electric Bus over a period 3 years in three instalments of 20% each in each fiscal starting from the current fiscal year of 2017-18. 5 cities (Bengaluru, Mumbai, Hyderabad, Ahmedabad, and Jaipur) have decided to invite bids under GCC.

2. TENDER DETAILS

Bid Price in Different Cities – INR PER KM



Bid Price in Different Cities – INR MILLION PER BUS



The details of the tender floated are as follows:

City, State	Number of Buses	Agency	Contract Type	Lowest Bidder
Bangalore, Karnataka	150 Non-AC (Midi) or 150 AC (Standard)	Bengaluru Metropolitan Transport Corporation	Gross Cost Contract	Goldstone-BYD
Mumbai, Maharashtra	20 AC (Midi) 20 Non-AC (Midi)	BEST Undertakings	Gross Cost Contract	Goldstone-BYD
Hyderabad, Telangana	40 AC (Midi / Standard) 60 AC (Midi / Standard)	Telangana State Road Transport Corporation	Gross Cost Contract	Goldstone-BYD
Ahmedabad, Gujarat	40 AC (Midi)	Ahmedabad Janmarg Limited (AJL)	Gross Cost Contract	Ashok Leyland Limited
Jaipur, Rajasthan	40 AC (Midi)	Jaipur City Transport Services Limited	Gross Cost Contract	Tata Motors Limited
Indore, Madhya Pradesh	40 AC (Midi)	Atal Indore City Transport Services Limited	Outright Purchase	Tata Motors Limited
Lucknow, Uttar Pradesh	40 AC (Midi)	Lucknow City Transport Services Limited	Outright Purchase	Tata Motors Limited
Kolkata, West Bengal	20 AC (Midi) 20 AC (Standard)	West Bengal Transport Corporation Limited	Outright Purchase	Tata Motors Limited
Jammu, J&K	15 AC (Midi)	Jammu and Kashmir State Road Corporation	Outright Purchase	Tata Motors Limited
Guwahati, Assam	15 AC (Midi)	Assam State Transport Corporation	Outright Purchase	Tata Motors Limited

Tata Motors will supply 190 electric buses to 6 cities, Goldstone-BYD will supply 290 buses to 3 cities and Ashok Leyland will supply 40 buses to 1 city. Ahmedabad could not able to issue Letter of Acceptance (LoA) by 20 March 2018.

3. KEY LESSONS

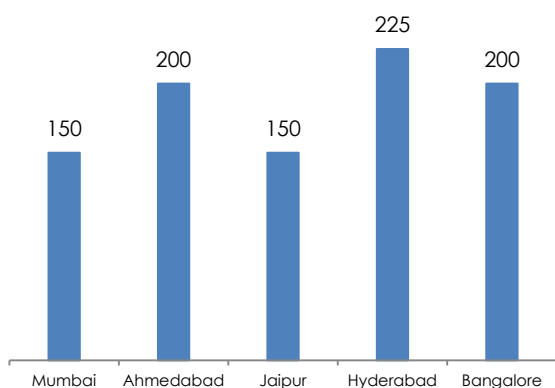
These buses may be deployed in a phased manner over the next three to six months. Some of the key findings from the latest bidding rounds are as follows:

1. **Length agnostic subsidy** resulted in STU preference for 9 meters buses. The subsidy was based on the localisation components, rather than on the bus size. The government should encourage the procurement of 12 meters buses also as they can be used on truck routes.

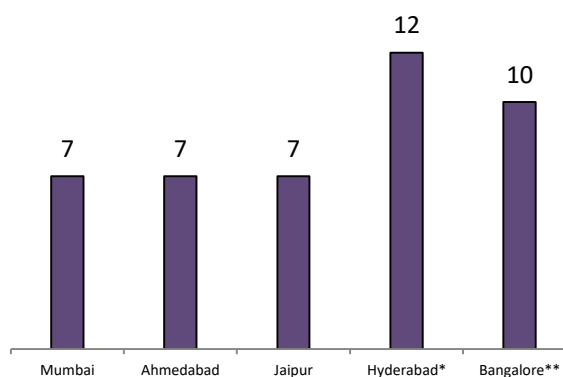
Percentage of Localization	Level-1 (Minimum 15% Localization)	Level-2 (Minimum 35% Localization)
Subsidy available	60 % of purchase cost or ₹85.00 Lacs (whichever is lower)	60 % of purchase cost or ₹ 1.00 Cr. (whichever is lower)

2. All cities completed the **bidding process within one month** to avail the subsidy under FAME-I Scheme. Most of the cities are procuring or renting the buses without detailed operation plan. The authority and the manufacturer/operator will need to work closely to ensure the deployment of e-buses on city routes.
3. There is huge **variation in tender conditions** in different cities which results into big variation in price for both GCC and outright purchase contract.

Minimum Assured Kms – Per Bus Per Day
(Figures in Km per day)



Contract Period for the Bus Operation
(Figures in Years)



* Hyderabad – Initial contract will be for 6 years and can be extended to 4 more years.

** Bangalore – Initial contract will be for 7 years and can be extended to 3 more years.

4. The bidding round experienced very **aggressive pricing** from limited players to crowd out market. The authority should evaluate the bid price logically to find out the long term sustainability of the project.
5. **Timely execution** is essential given only two bidders has won all the tenders and will have advantaged position compared to other players. Further, technical capability of bidders also needs to be ascertained to ensure successful execution of contracts.

6. **Deployment of electric buses** is an opportunity for the cities to introduce new technology and change the face of public transport. Unfortunately, cities have not planned any special marketing efforts to popularise the use of electric buses.

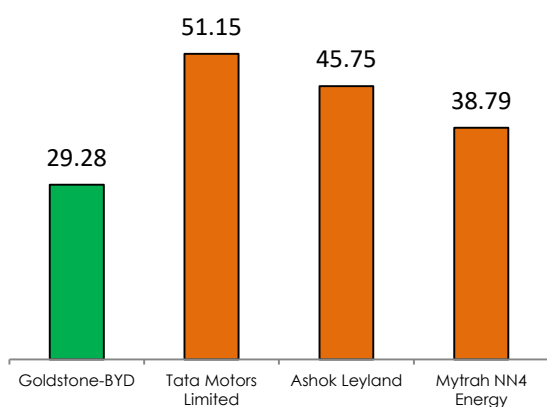
4. PRICE ANALYSIS

The detailed analysis of each city is as follows:

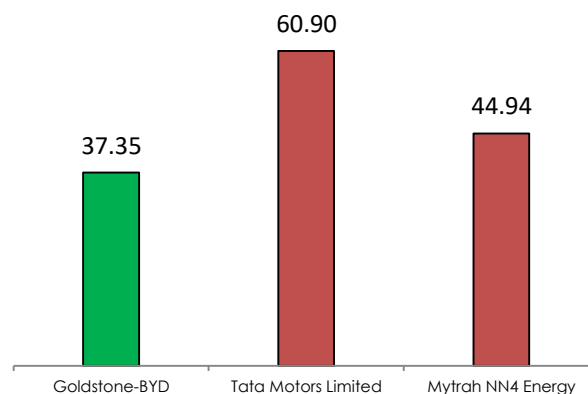
BENGALURU, KARNATAKA

Bengaluru received the approval for the procurement of 40 electric buses. However, the city planned to procure 150 buses on gross cost. The tender was released by Bangalore Metropolitan Transport Corporation (BMTc) for the hiring of 150 AC electric buses along with charging station. The city has not finalised the ratio of 9 meters Non air-conditioned e-buses and 12 meters air-conditioned e-buses. BMTc agreed to consider the experience of bus operation outside the country. BMTc has proposed a contract period of 10 years, which will be reviewed after 7 years. The assured average km is 200 kms per day per bus. The cost of electricity for the charging of the buses will be borne by BMTc.

9M Non-AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



12M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



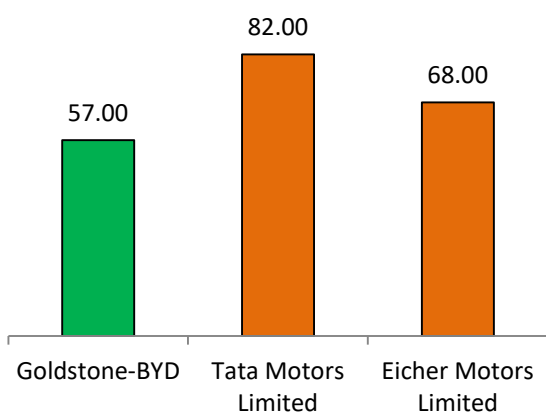
Goldstone Infratech Limited emerged as the lowest bidder for both 9 meters AC e-bus and 12 meters AC e-bus, quoted INR 29.28 per km and INR 37.35 per km, without the cost of the electricity.

MUMBAI, MAHARASHTRA

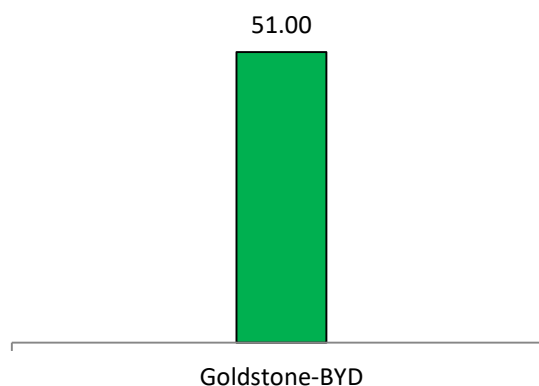
Mumbai received the approval for the procurement of 40 electric buses from DHI. The city is already running 5 electric buses (Midi) for last 3 months, financed by Bombay Municipal Corporation (BMC). The tender was released by BEST Undertakings for the hiring of 40 electric buses under GCC. The city decided to hire 20 AC and 20 Non-AC buses.

BEST has proposed a contract period of 7 years. The assured average km is 4,000 kms per month per bus (i.e. 150 kms per day). The operator is responsible for the electricity and charging of the buses.

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



9M Non-AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



Goldstone Infratech Limited emerged as the lowest bidder for both 9 meters AC e-bus and 9 meters Non-AC e-bus, quoted INR 57.00 per km and INR 51.00 per km.

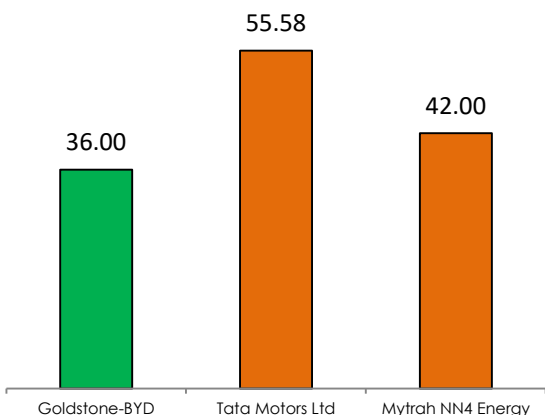
HYDERABAD, TELANGANA

Hyderabad received the approval for the procurement of 40 electric buses from DHI. However, the city planned to procure 100 buses on gross cost. In the Phase-I, the city will procure 40 buses and will procure remaining buses in Phase-II. The tender was released by Telangana State Road Transport Corporation (TSRTC) for the hiring of 40 AC electric buses. The city has not finalised the ratio of 9 meters and 12 meters air-conditioned e-buses.

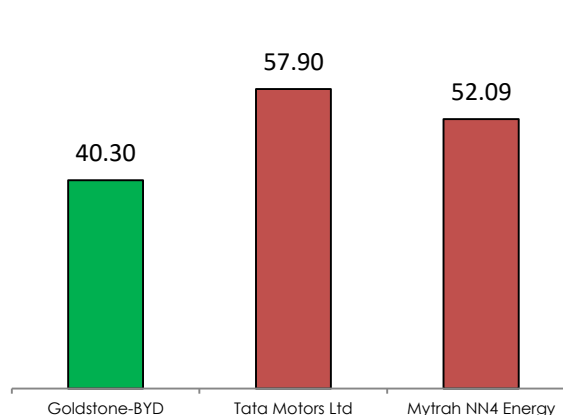
TSRTC has proposed a contract period of for 6 years initially and extendable for further 6 years in two spells 7-9th year and 10-12th year of agreement period subject to satisfactory performance and fitness of the vehicle.

The assured average km is 225 kms per day per bus. The cost of electricity for the charging of the buses will be borne by TSRTC.

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



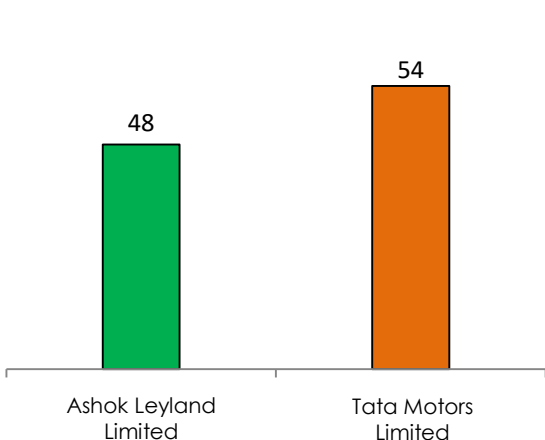
12M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



Goldstone Infratech Limited emerged as the lowest bidder for both 9 meters AC e-bus and 12 meters AC e-bus, quoted INR 36.00 per km and INR 40.30 per km, without the cost of the electricity.

AHMEDABAD, GUJARAT

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)



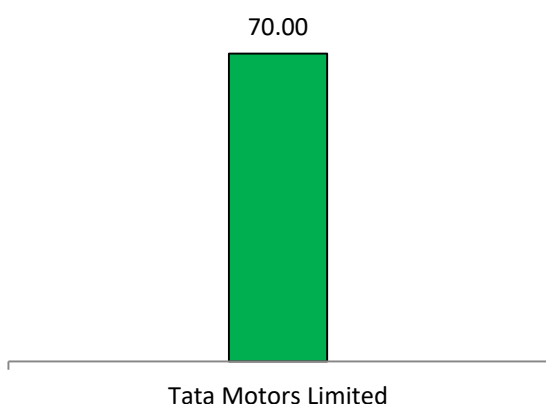
Ahmedabad received the approval for the procurement of 40 electric buses from DHI. The tender was released by Ahmedabad Janmarg Limited (AJL) for the hiring of 40 AC Midi electric buses under GCC. AJL has proposed a contract period of 7 years. The assured average km is 72,000 kms per bus per year (i.e. 200 kms per day). The operator is responsible for the electricity and charging of the buses.

The city conducted first bidding round, where Tata Motors Limited emerged as the lowest bidder for 9 meters AC e-bus and quoted INR 59.00 per km. Initially, the authority disqualified Goldstone Infratech Limited for the lack of technical experience. However,

the city decided to cancel the full process and invite fresh bids. Ashok Leyland emerged as the lowest bidder with INR 48.00 per km.

JAIPUR, RAJASTHAN

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Per Km)

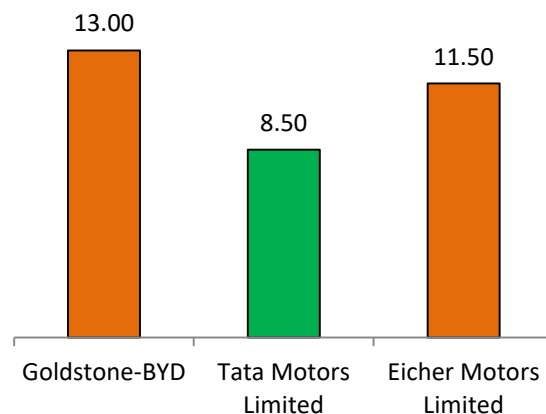


Jaipur received the approval for the procurement of 40 electric buses from DHI. The tender was released by Jaipur City Transport Services Limited (JCTSL) for the hiring of 40 AC Midi electric buses under GCC. AJL has proposed a contract period of 7 years. The assured average km is 54,000 kms per bus per year (i.e. 150 kms per day). The operator is responsible for the electricity and charging of the buses.

Tata Motors Limited emerged as the lowest bidder for 9 meters AC e-bus and quoted INR 70.00 per km. The city received 4 bids but rejected 3 bids on the technical ground. Tata Motors was the sole bidder which qualified in technical process.

INDORE, MADHYA PRADESH

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Million)

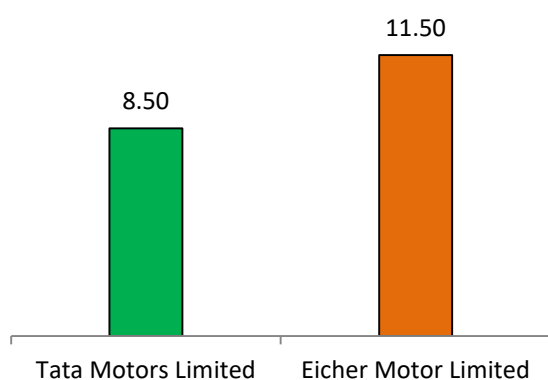


Indore received the approval for the procurement of 40 electric buses. The tender was released by [Atal Indore City Transport System Limited \(AICTSL\)](#) for the procurement of 40 Non-AC electric buses along with charging station. The city decided to opt for 9 meters air-conditioned e-buses.

Tata Motors Limited emerged as the lowest bidder to supply 40 electric buses. The price includes the FAME Subsidy component.

LUCKNOW, UTTAR PRADESH

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Million)



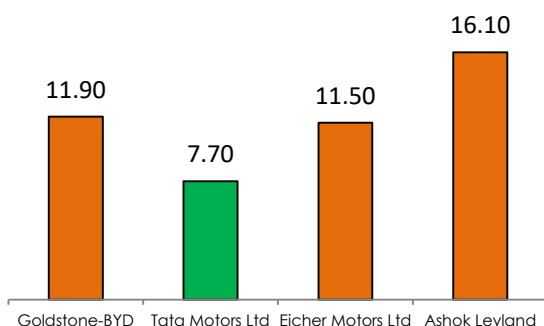
Lucknow received the approval for the procurement of 40 electric buses. The tender was released by [Lucknow City Transport Services Limited \(LCTSL\)](#) for the procurement of 40 AC midi (9 meters) electric buses along with provisioning and installation of charging station. LCTSL decided to procure the buses with 10 years Annual Maintenance Contract (AMC) with battery replacement. Further, E-Bus should consume less than 175 KWh energy per 100 Km.

Tata Motors Limited emerged as the lowest bidder to supply 40 electric buses. The price includes the FAME Subsidy component.

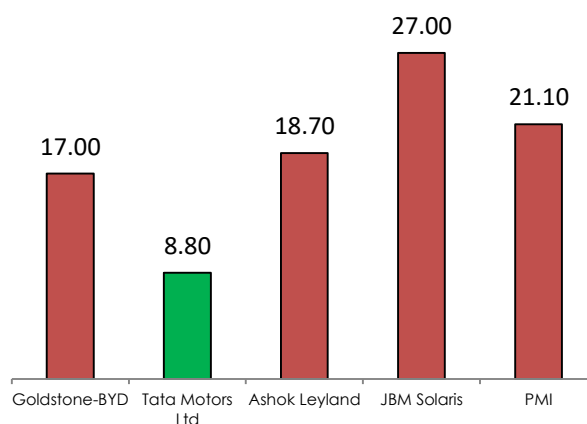
KOLKATA, WEST BENGAL

Kolkata received the approval for the procurement of 40 electric buses. The tender was released by West Bengal Transport Corporation Limited (WBTCCL) for the procurement of 20 AC midi e-buses and 20 AC standard e-buses, with 7 years warranty. The seating capacity of 26 and 31 passengers was fixed for midi and standard bus respectively.

9M E-Bus Rates Quoted by different manufacturers (Figures in INR Million)



12M E-Bus Rates Quoted by different manufacturers (Figures in INR Million)

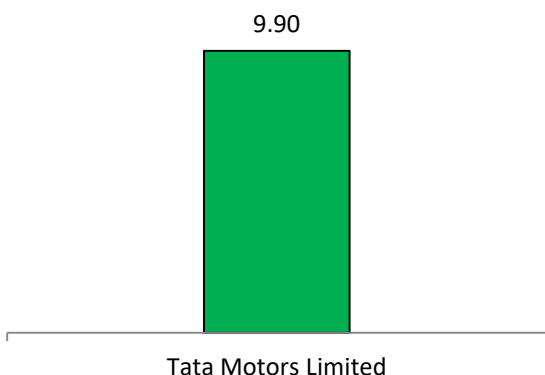


The authority asked for the Supply, installation and commissioning of 30 slow charging and 10 fast charging facilities stations for midi and standard buses. Minimum range of the vehicle with battery should not be less than 150km per charge.

Tata Motors Limited emerged as the lowest bidder to supply 40 electric buses. The price includes the FAME Subsidy component. The price of chargers will be paid separately by the authority.

JAMMU, JAMMU AND KASHMIR

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Million)

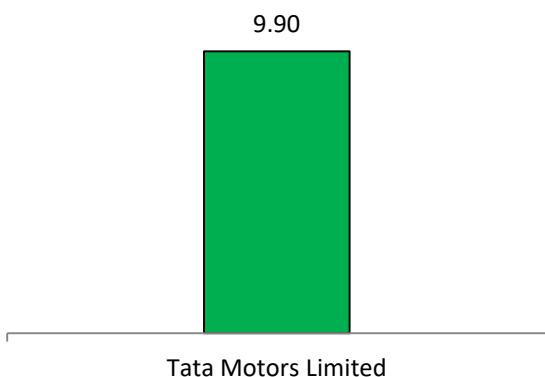


Jammu received the approval for the procurement of 15 electric buses from DHI. The tender was released by Jammu and Kashmir State Road Transport Corporation (JKSRTC) for the procurement of 15 AC midi (9 meters) electric buses. The cost of provisioning and installation of charging station is asked separately.

Tata Motors Limited emerged as the lowest bidder to supply 15 electric buses at the price of INR 9.9 million per bus and will supply 4 chargers with the buses at the cost INR 1.6 million per charger. It was sole bidder.

GUWAHATI, ASSAM

9M AC E-Bus Rates Quoted by different manufacturers (Figures in INR Million)



Guwahati received the approval for the procurement of 15 electric buses from DHI. The tender was released by Assam State Transport Corporation for the procurement of 15 AC midi (9 meters) electric buses. The cost of provisioning and installation of charging station is asked separately.

Tata Motors Limited emerged as the lowest bidder to supply 15 electric buses at the price of INR 9.9 million per bus and will supply 4 chargers with the buses at the cost INR 1.6 million per charger. It was sole bidder.



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Appendix 1 – Comparison of e-Buses Specification

Sr. No.	City, State	Agency	Number of Buses (Floated)	Number of Buses (Sanctioned)	Type of Bus	AC / Non-AC	Floor Height	Seating Capacity	Assured Kms (Per Day)	Contract Period / Warranty	Battery Capacity		Contract Type	Tender Price (In INR)		Electricity	Lowest Bidder
											Onboard	Fast Charging		Cost of Bus	Rate Per Kms		
1	Bangalore, Karnataka	Bengaluru Metropolitan Transport Corporation	150	40	Midi	Non-AC	650/900	31	200	7+3			Gross Cost Contract		29.30	Without electricity	Goldstone-BYD
					Standard	AC	400	42	200	7+3					37.35		
2	Mumbai, Maharashtra	BEST Undertakings	20	40	Midi	AC	650/900	26-31	150	7			Gross Cost Contract	16,800,000	50.84	With electricity - INR 57 per km	Goldstone-BYD
			20		Midi	Non-AC	650/900	26-31	150	7					46.60	With electricity - INR 51 per km	
3	Hyderabad, Telangana	Telangana State Road Transport Corporation	100	40	Midi	AC	650/900	-	225	12			Gross Cost Contract		36.00	Without electricity (Charged INR 8.81 per km)	Goldstone-BYD
					Standard	AC	400-900	-	225	12					40.30		
4	Ahmedabad, Gujarat	Ahmedabad Janmarg Limited (AJL)	40	40	Midi	AC	900	29	200	7			Gross Cost Contract	13,500,000	59.00	with electricity	Tata Motors Limited
5	Jaipur, Rajasthan	Jaipur City Transport Services Limited	40	40	Midi	AC	650	29	150	8			Gross Cost Contract		70.00	with electricity	Tata Motors Limited
6	Indore, Madhya Pradesh	Atal Indore City Transport Services Limited	40	40	Midi	AC	900	31	-	5	180 km with each charge	2 Fast chargers on the route	Outright Purchase	8,500,000			Tata Motors Limited
7	Lucknow, Uttar Pradesh	Lucknow City Transport Services Limited	40	40	Midi	AC	900	29	-	10	170 to 200 km in single charge	-	Outright Purchase	8,500,000			Tata Motors Limited
8	Kolkata, West Bengal	West Bengal Transport Corporation Limited	20	40	Midi	AC	400-900	26	-	5	Minimum 150 km per charge	30 slow charging and 10 fast charging facilities	Outright Purchase	7,700,000			Tata Motors Limited
			20		Standard	AC	400-900	31	-	5				8,800,000			
9	Jammu, J&K	Jammu and Kashmir State Road Corporation	15	15	Midi	AC	650-900		-				Outright Purchase	9,900,000			Tata Motors Limited
10	Guwahati, Assam	Assam State Transport Corporation	15	15	Midi	AC	900	34	-	5	>180 km per charge	2 Fast chargers on the route	Outright Purchase	9,900,000			Tata Motors Limited

Appendix 2 – Tender Conditions in different cities

Sr. No.	City, State	Number of Buses	Type	Technical Experience			Financial Capability		Bid Security (In INR Crores)	Performance Security (In INR Crores)
				Manufacturer	Operator	Consortium	Average Turnover (In INR Crores)	Net worth (In INR Crores)		
1	Bangalore, Karnataka	150	Registered company under the Companies Act 1958/2015	manufacturing capacity of 25 number of electric buses/month	operations of a minimum of 150 buses for a consecutive period of two years anytime during the previous five years. Experience of bus operation outside the country will also be considered	Consortium was allowed with 3 companies. The developer can provide the support letter from the manufacturer	275	50	0.75	5.72
2	Mumbai, Maharashtra	40	Vehicle Manufacturer or Individual Operator or a Joint Venture or Consortium of Companies or Proprietorship Firm	Executed/undertaken at least one Project reference of minimum operation of 50 buses in single order or at least two Project references of minimum operation of 35 buses in each Project in any part of India or Abroad during last 3 years.	The Operators who tie up in Consortium with Vehicle Manufacturers shall be exempted from minimum experience.		20	Positive	0.20	0.20
3	Hyderabad, Telangana	100	Individual, Partnership firm, Company, Consortium / Joint Venture	Manufacturing capacity of 10 numbers of electric buses/month	-	Bidder/ Consortium is not an Original Equipment Manufacturer. He should get, Manufacturer Consent / authorization Form and submit it	20	10	0.25	50
4	Ahmedabad, Gujarat	40	Company, Partnership firm and registered proprietary firm. Any foreign firms constituted under respective foreign law not registered in India are not allowed to participate in the Bidding as single bidder or consortium member	registered Bus Manufacturer with bus manufacturing facilities in India having experience of manufacture in India and delivery of at least 1000 Electric / Diesel / CNG buses over the last five financial years including the financial year of 2017-18.	Ownership and/or Operation Experience or combined Ownership and Operation Experience of at least 100 buses in India for at least one year in last three years immediately preceding the Bid Due Date		-	100 (OEM) + 5 (Operator)	0.50	10
5	Jaipur, Rajasthan	40	Company, Partnership firm and registered proprietary firm. Any foreign firms constituted under respective foreign law not registered in India are not allowed to participate in the Bidding as single bidder or consortium member	registered Bus Manufacturer with bus manufacturing facilities in India having experience of manufacture in India and delivery of at least 1000 Electric / Diesel / CNG buses over the last five financial years including the financial year of 2017-18.	Ownership and/or Operation Experience or combined Ownership and Operation Experience of at least 100 buses in India for at least one year in last three years immediately preceding the Bid Due Date		-	100 (OEM) + 5 (Operator)	1.5	10
6	Indore, Madhya Pradesh	40	Registered company under the Companies Act 1958/2015	The bidder should be a registered Bus Manufacturer based in India	-	-	75 150 (Consortium)	50 100 (Consortium)	0.72	An amount equivalent to 20 % of the contract value

7	Lucknow, Uttar Pradesh	40	Registered company under the Companies Act 1958/2015	shall be an Original Equipment Manufacturer (OEM) /engaged in manufacture and supply of Electric Fueled Internal combustion (IC) Engine propelled Bus chassis and/ or Fully-built Electric fueled IC Engine Propelled Buses. The financial and technical qualification of the Bidder and its foreign technology partner/ holding company will be considered for evaluation of the bid.	-	-	75	Positive	0.50	An amount equivalent to 10 % of the contract value
8	Kolkata, West Bengal	40	Registered company under the Companies Act 1958/2015	should have experience in manufacturing global standard buses	-	-	70	-	1.50	10% of total value of the contract (cost of buses and charging stations)
9	Jammu, J&K	15	individual, Partnership firm, Company, Consortium /Joint Venture	shall have manufacturing capacity of 10 units of electric buses/month	-	-	10	10	0.10	4.50
10	Guwahati, Assam	15	Registered company under the Companies Act 1958/2015	should be a registered Bus Manufacturer based in India	-	-	75 150 (Consortium)	50 100 (Consortium)	0.50	An amount equivalent to 20 % of the contract value