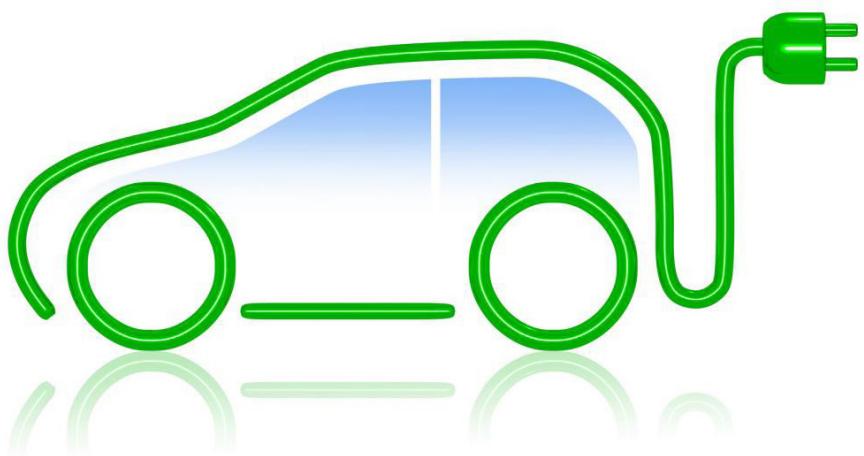




BHUBANESWAR E-MOBILITY PLAN

Expression of interest for availing grant
under FAME India scheme



Submitted by-

Bhubaneswar- Puri Transport Services
30.11.2017

TABLE OF CONTENTS

1.	PROJECT PROPOSAL.....	03
2.	ANNEXURE 1 DPR For Bhubaneswar E-Mobility Plan.....	06
3.	ANNEXURE 2 Undertaking from Bhubaneswar Development Authority	21
4.	ANNEXURE 3 Undertaking from Bhubaneswar Municipal Corporation	22
5.	ANNEXURE 4 Undertaking from Bhubaneswar Smart City Limited	23
6.	ANNEXURE 5 Undertaking form Ola	24
7.	ANNEXURE 6 Undertaking from Lithium	25
8.	ANNEXURE 7 Proceedings of BPTS related to deployment of E-Buses	26
9.	ANNEXURE 8 Proceedings of BMC related to E-Vehicle Policy	28

PROJECT PROPOSAL

BPTSL

Bhubaneswar - Puri
Transport Services Ltd.

No. : 682/BPTS
To



BMC Campus, Kalpana Square,
Vivekananda Marg, Bhubaneswar-751014
Ph. : 0674-2435655, Fax : 0674-2436655
E-mail : bptsbbsr@gmail.com

Date : 30.11.2017

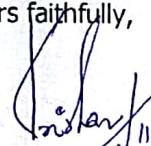
**The Under Secretary (AEI),
Department of Heavy Industry, Government of India,
Room no. 172-D, Udyog Bhawan, New Delhi -110011**

Sub: Pilot Project Proposal in response to EoI issued by Department of Heavy Industry

Sir,

1. Reference Department of Heavy Industry's Expression of Interest issued on 31st October 2017 for inviting pilot project proposals from cities, having population of Million Plus, for extending grant in connection with procurement of shared electric mass transportation comprising of electric buses, electric 4-wheelers passenger cars & electric 3-wheeler, we are hereby submitting our Expression of Interest, in the prescribed format, for consideration of the Department of Heavy Industry. We agree to abide by the conditions set forth in the said EOI.
2. We undertake that the vehicles supported through this EoI shall not be entitled to claim demand incentives under Demand Incentive Delivery Mechanism under FAME India Scheme of the Department of Heavy Industry separately.
3. We hereby declare that our proposal submitted in response to this EOI is made in good faith and the information contained is true and correct to the best of our knowledge and belief. If any of the information provided here is found to be misleading, we are liable to be disqualified from the EOI selection process.

Yours faithfully,


(Dr. Krishan Kumar, IAS)
MANAGING DIRECTOR, BPTS

PROJECT PROPOSAL

A. GENERAL DETAILS ABOUT THE CITY

1	Name of the City	Bhubaneswar
2	Population of the City (As per 2011 census)	Currently Bhubaneswar is having more than 1 million people.
3	Average PM 2.5 Level of the City (As per 2016 data of CPCB)	30 µm/ m ³ (OPCB- 2016)
4	No of Vehicle Registered in the City (As per 2012 data of MoRTH)	10.8 lakh registered vehicles (RTO -2016)
5	Ranking in Swachh Survekshan 2017 Report	94
6	Covered in Smart City or not	Yes. As the first ranked city in the Smart Cities Challenge, Urban Transport was envisaged as an integral component of the Smart City in the form of “Transit Oriented Development” as part of its vision statement. INR 10.5 crore is budgeted for investment under Bhubaneswar Smart City for deployment of 500 e-rickshaws, allied infrastructure and charging stations. In addition, augmenting the city's public transportation network and providing last mile connectivity were directions of the city's mobility strategic pillar.
7	Requirement of Charging Infrastructure: 1. AC Charges: 90% (2021 Target for e-rickshaws); 90 nos. for electric buses 2. DC Fast Charges: 10% (2021 Target for e-rickshaws); 40 for electric buses	It will be a mix of both

B. DESCRIPTION OF PROJECT PROPOSAL

Bhubaneswar, through strategic investments in public transit infrastructure and last mile connectivity modes, aims to induce a shift by 20% travel to public transport by 2021. As per its Bus Modernization Plan, 38.7kms of Priority Transit Corridors will require 148 new electric buses to move 192,000 daily passengers. For first-last mile connectivity within its ABD, the City proposes deployment of 500 e-rickshaws, allied infrastructure and charging stations by 2021. These two project proposals combined will act as a catalyst to help Bhubaneswar achieve its target of 30% of vehicle travel in the city through electric vehicles by 2030.

PROJECT PROPOSAL

C. FUNDING PATTERN

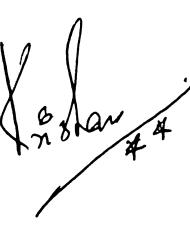
1	Total Project Cost	219.75 Cr. (Cost of Electric Vehicles – 208.62 Cr., Cost of Charging Infrastructure – 11.13 Cr.)
2	Contribution sought from DHI	116.13 Cr. (Cost of Electric Vehicles – 105 Cr., Cost of Charging Infrastructure – 11.13 Cr.)
3	Contribution from State Government	93.12 Cr.
4	Contribution from Bhubaneswar Smart City Limited	10.5 Cr.

D. ANY OTHER INFORMATION IN SUPPORT OF PROJECT PROPOSAL

Detailed Project Report for Bhubaneswar E-Mobility Plan is attached as an Annexure -1

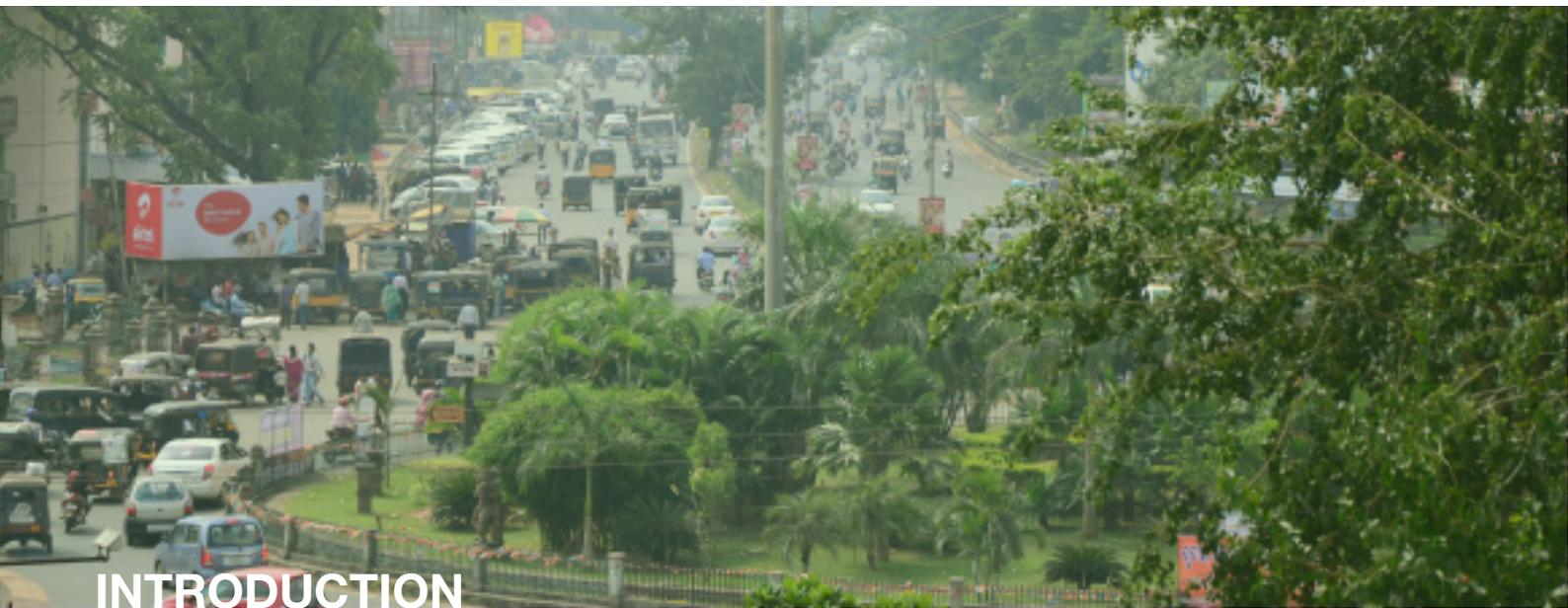
E. DETAILS OF ANNEXURES

1. Annexure - 1 : Detailed Project Report for Bhubaneswar E-Mobility Plan.
2. Annexure - 2 : Undertaking from Bhubaneswar Development Authority
3. Annexure – 3 : Undertaking from Bhubaneswar Municipal Corporation
4. Annexure – 4 : Undertaking from Bhubaneswar Smart City Limited
5. Annexure – 5 : Undertaking from Ola.
6. Annexure – 6 : Undertaking from Lithium.
7. Annexure – 7 : Proceedings of BPTS relate to deployment of E-Buses
8. Annexure – 8 : Proceedings of BMC related to E-Vehicle Policy.

Name	Dr. Krishan Kumar, IAS
Designation	Managing Director, Bhubaneswar-Puri Transport Service Limited (BPTSL)
Signature	

[AUTHORISED SIGNATORY'S SIGNATURE WITH SEAL]

ANNEXURES



INTRODUCTION

Over the last decade (2004-2014), the number of vehicles in Bhubaneswar have increased almost three-fold. Along with rapid increase in two-wheelers and four-wheelers, the city has observed a swift increase in 3-wheelers (auto rickshaws), which has increased at an alarming rate of 13% per annum, more than the national average. This is evident from the fact that auto rickshaws are sought after as primary mode of transport by the

citizens after private vehicles. Thus auto rickshaws in Bhubaneswar contribute to the 24% of total trips in the city which is far more than the desirable standard of 5% for a city of the size of Bhubaneswar. On the other hand city buses merely carry 6% of the total trips, and there is lack of any other robust public transport system in the city.

VISION

Bhubaneswar, through **participatory decision-making, responsible governance and open access to information and technology**, to be a:



Transit oriented city with a compact urban form that promotes active, connected and sustainable mobility choices



Livable city providing diverse range of housing, educational and recreational opportunities; while enhancing its heritage, arts and traditional communities



Child-friendly city providing accessible, safe, inclusive and vibrant public places



Eco-city co-existing in harmony with nature for nurturing a resilient, clean, green, and healthy environment



Regional economic centre attracting knowledge based enterprises and sustainable tourism activities by leveraging and empowering its institutions, local businesses and informal workforce



Aim towards sustainable mobility - With an intent to become Transit Oriented and Eco-City, the city governance endeavors to strengthen the city bus service, bring new legal framework for compact urban form, move towards cleaner technologies to minimize carbon footprint. The city aims to be a model of low-impact carbon neutral development using innovations in transportation and green infrastructure.

Mobility based strategic directions and city goals - The urban planning system in Bhubaneswar's context is expanded to include Integrated Land Use and Transport Planning, Infrastructure Planning, and Socio-Economic Planning. Accordingly, Bhubaneswar's Strategic Plan is built on 5 strategic pillars- Responsive Governance, Transit Oriented Development, Fiscal Sustainability, Infrastructure, and Socio- Economic Development. These pillars are guided by 10 Strategic Directions which are the key strategies for the plan. These together provide the foundation for creating a more inclusive, resource-efficient, and technology enabled future for the city. Under Strategic Direction of Mobility, the city plans to augment public transportation network and provide last-mile connectivity for the city residents. The City has further set following goals towards achieving the mobility vision: -

- a. Adopt principles of complete street design which supports pedestrians, cyclists, public transport and private vehicles in that order.
- b. Provide frequent, fast, reliable and affordable citywide bus service across the city

Essential projects from Smart City Proposal - The proposal further details the plan to achieve "Encouragement to non-motorized transport" in the form of projects such as: -

1

BBSR Cycle Highway

Creating of dedicated cycle paths along 32 Km stretch in the city to provide safe and smooth mobility to cyclists

2

Electric cycle-rickshaws

Dedicated routes, charging points and aggregation service is proposed as an eco-friendly solution.

3

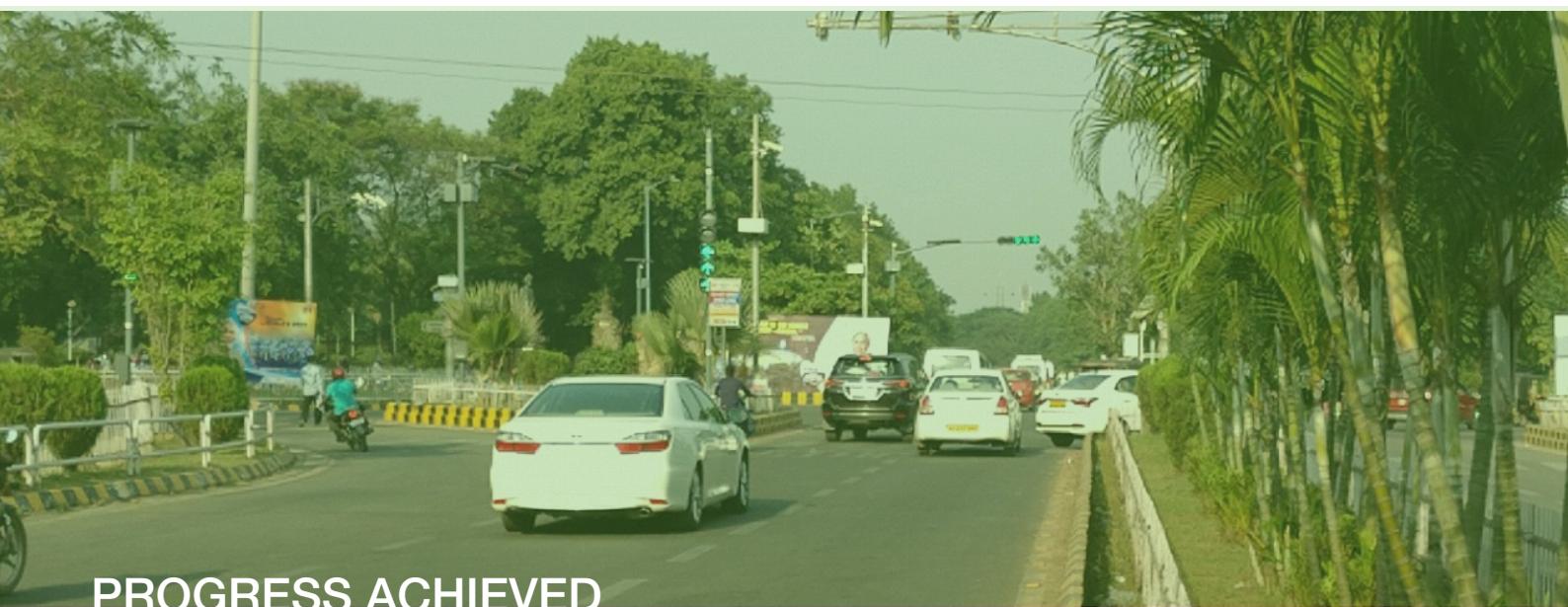
Public Bicycle Sharing Project

Implementation of city wide PBS project with deployment of 1000 e-bicycles and allied infrastructure.

4

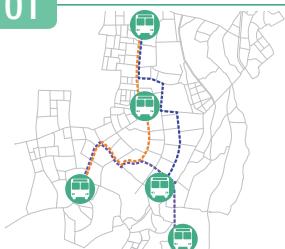
Intelligent Transportation System

Implement an intelligent transportation system in the city along with a Command Control Centre to provide safe and easy mobility solutions and seamless management of traffic on the city roads. This will provide traffic signaling with area based traffic control; traffic network flow monitoring; video surveillance and incident management; Variable message signs; video analytics supported traffic violation detection and e- challan; traffic analytics, simulation and modelling along transit corridors in the city.



PROGRESS ACHIEVED

01



Bus Modernisation Plan - In an attempt to strengthen the Bus Transit System in the city, a Bus Modernisation Plan is being developed comprising of methodology for procurement of additional 500 buses, institutional restructuring of the city agency, policy framework and strategies for operationalization of buses. It further includes formulation of modus operandi to undertake “Gross Cost Based Bus Operations” in the city. The roll out of Bus Modernisation Plan by Bhubaneswar Puri Transport Services (the city agency for bus transportation) is expected to start in January 2018.

03



Transit Infrastructure Corridor - As part of this initiative, development of 32 km stretch of road network with necessary infrastructure is being developed for plying e-buses on these routes. Also, these routes are planned to cater to multi modal transit infrastructure facilities.

02



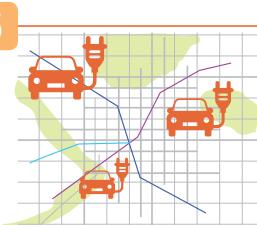
Public Bicycle Sharing - The City has already started procurement of Public Bicycle Sharing project with an aim to bring 1000 Bicycle with requirement to provide a minimum of 25% as e-bicycles. The bidders shall be at liberty to provide all 1000 cycles as e-bicycles as part of the project. It will be City's prerogative to provide the power charging infrastructure. The topographical profile of the city

04



Amendment to Building Regulations - An amendment to the Bhubaneswar Development Authority (Planning and Building Standards) Regulations 2008 has already been initiated to incorporate e-vehicle charging facilities in the buildings. The draft amendment to the regulations has already been released for obtaining objections from public.

05



E-Mobility Plan - The city has initiated the implementation through various intervention for achieving e-mobility vision. An e-mobility plan is being formulated in association with International Finance Corporation. The e-mobility plan will aim to congregate all initiatives by City Authorities and derive a plan for joint implementation for achievement of common goal.



THE E-MOBILITY PLAN

In order to realise various proposals mentioned above, the city has undertaken various steps in conceptualizing the overall approach to attain and develop e-mobility infrastructure and transportation services in the city. Many experts engaged by the city authorities are working to analyze the mobility need of the city and accordingly propose an integrated mobility solution primarily addressing following major areas: -

A. Statutory

E-vehicle Policy - The government of India has launched a number of schemes and policies to promote EV adoption. Central government is pushing e-rickshaws via FAME and NITI Aayog. There has been reduction in one-time registration tax from 6% to 3% by Government of Odisha for promoting electric vehicles. So, in order to stimulate electric vehicle market further in Bhubaneswar, Bhubaneswar Development Authority (BDA) and Bhubaneswar Municipal Corporation (BMC) decided to develop policy outline. Currently City authority in coordination with International Finance Corporation (IFC) is formulating the implementation plan for electric vehicles in the city and also preparing an e-vehicle policy, which will guide the city in adoption and smooth transition from present conventional vehicles to electrical vehicles.

Under IFC Eco-cities program, IFC is promoting the use of electric vehicles in Indian cities. As a part of this initiative, IFC along with Deloitte developed a policy framework with detailed implementation plan. The responsibilities of various departments are aligned to the steps that need to be taken to promote vehicle electrification in the city.

Annexure

1

The e-vehicle policy details the key interventions by State / City Governments as follows:-

- » Determination of the appropriate area/ routes for operating electric rickshaws within the city
- » Identifying the regulatory requirements for the electric rickshaws within Odisha to ensure comprehensive coverage
- » Finalisation of draft regulations for electric rickshaws
- » Determination of tariff to be charged for electric vehicles
- » Approval of the tariff from the Odisha Electricity Regulatory Commission
- » Identify sustainable operating models for charging infrastructure
- » Identify amendments required in the building bye-laws
- » Setting up the structure of the air ambience fund
- » Defining the structure of the auto-rickshaw buyback program

Auto rickshaw buyback program

Provide rebates on exchanging auto rickshaws for e-Rickshaws

Development of Licensing & Regulations

Determination of routes, training, registration fees & licensing for e-rickshaws

Development of Charging Hubs

Develop charging hubs in selected BMC Parking Lots and Railway Station Multimodal Hub

Swapping of batteries

Promoting battery standardization to facilitate battery swapping

Building By-Laws Amendment

Amend building regulations to mandate certain level of charging access in new buildings (in line with section 7 of the Hong Kong Planning & Standards Guidelines 2011)

Reduced electricity rate

Provide reduced electricity rate for electric vehicle charging to improve its business case

Additional Tax on Fossil Fuel Vehicles

Increase the tax charged on fossil fuel vehicles, eg Air Ambience Fund, New Delhi (notified as per 31(A), read with section 17(1) of the Air (Prevention and Control of Pollution) Act, 1981)

BDA and BMC strengthening the enabling environment

Initiated formulation of an EV policy

Steering committee set up to anchor EV adoption

Stakeholder engagement through workshops

Initiative under E-vehicle Policy

Regulatory – Amendment to Bhubaneswar Development Authority (Planning and Building Standards) Regulations, 2008 for inclusion of provisions to reserve a minimum of 30% of the parking spaces with Electric Vehicle Charging Facilities in the parking spaces of residential, commercial, industrial buildings and Multi Level Car Parking. The amendments will further enable Authority to get implemented such facility in existing buildings and integrate such parking / charging areas with the Smart Parking Management System of the City to enable guidance mechanism for users of electric vehicles to the facility.

B. Institutional

Government of Odisha in Housing & Urban Development Department designated Bhubaneswar Puri Transport Services (BPTS) as the nodal agency to provide public transportation and implementation of e-mobility in the city. BPTS has further initiated its organizational restructuring through selection of resources for Key Managerial Positions in the organization and engagement of Project Consultant, Urban Mass Transit Company (UMTC) for roll out of its key project, Bus Modernisation Plan.

C. Intelligent Systems

This project has been envisaged to be a pioneer project in transforming city's mobility future, where the city is looking for improvising its public transit system by adopting cleaner, cheaper and environment friendly technologies and integrating services through intelligent technology (IT) and service planning. This project will also help the e-vehicle users to identify and navigate to e-charging points / facilities developed within the city.

D. Infrastructure

As an initiative to augment the available infrastructure in the city to cater to operations of e-vehicles, a total stretch of 32 km has been identified as the priority transit corridor. This corridor will have multimodal infrastructure facilities for all kinds of vehicles including e-vehicles. The corridor will facilitate separate bicycle lanes, charging stations for e-bikes, e-cars and e-rickshaws, electrical supply / charging facility for plying of e-buses, dedicated on / off street parking areas for e-vehicles etc. A stretch of 5.5 km as Smart Janpath (the main retail corridor of Bhubaneswar connecting to the Railway Station) has already been tendered out at a contract value of Rs. 80 Crores. Other stretches are in different stages of planning and implementation.

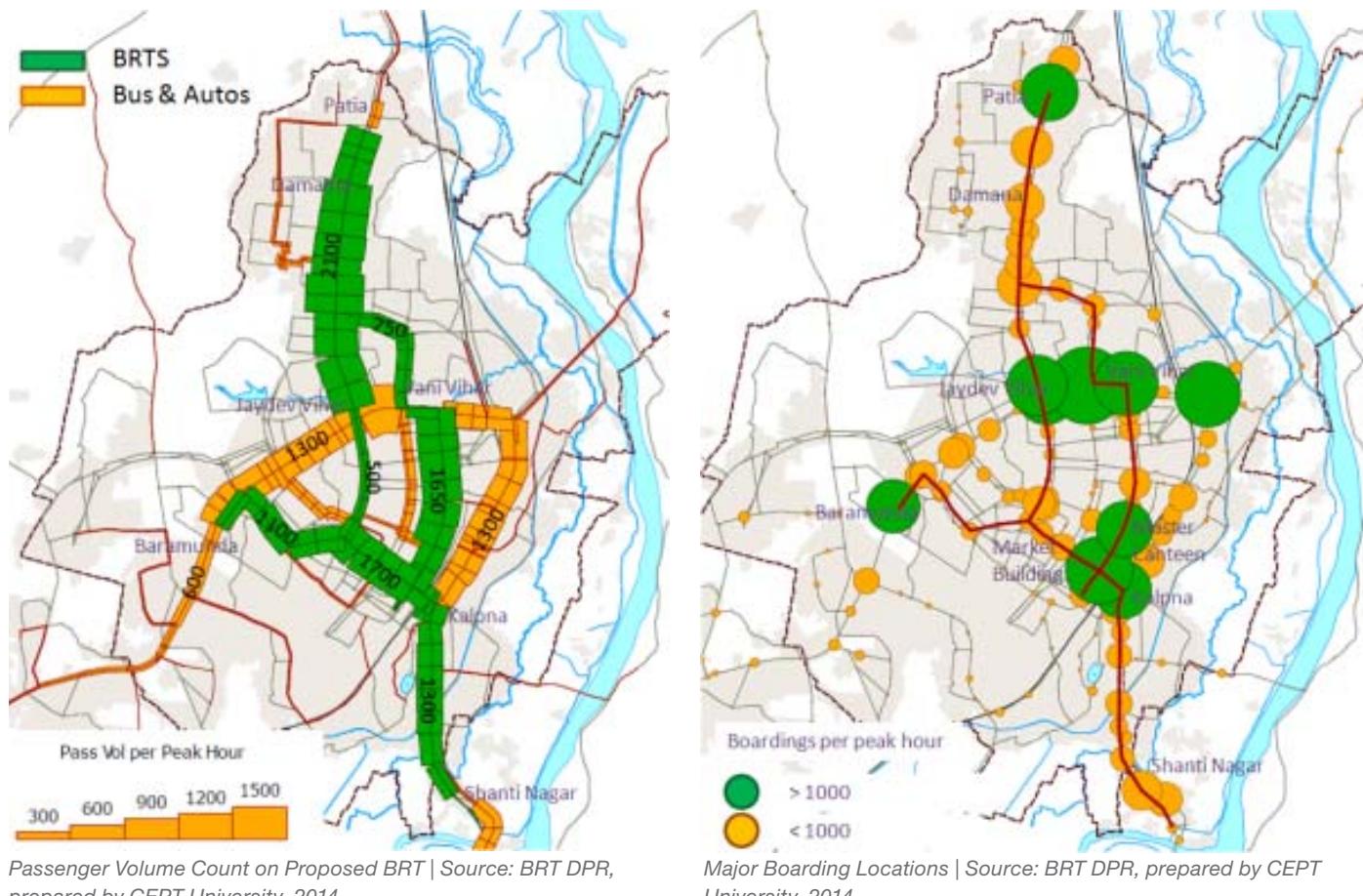
E. Rolling Stock

BPTS will bring e-vehicles in different categories to cater to the transportation needs of the city. These e-vehicles will include electric buses, electric rickshaws, electric bicycles and electric cars.

ELECTRIC BUSES AS THE MAIN TRUNK SERVICE

A. Selection of trunk corridors:

In order to develop a holistic public transport network city has prepared a Detailed Project Report with CEPT University in 2014. After conducting detailed demand and spatial analysis the report suggests major corridors for Bhubaneswar BRT, in form of three major corridors. The image below explains these corridors:



Passenger Volume Count on Proposed BRT | Source: BRT DPR, prepared by CEPT University, 2014

Major Boarding Locations | Source: BRT DPR, prepared by CEPT University, 2014

The table below presents the corridors with the maximum Passenger Peak Hour Per Direction (PPHPD) traffic on the corridors as identified in the BRT DPR.

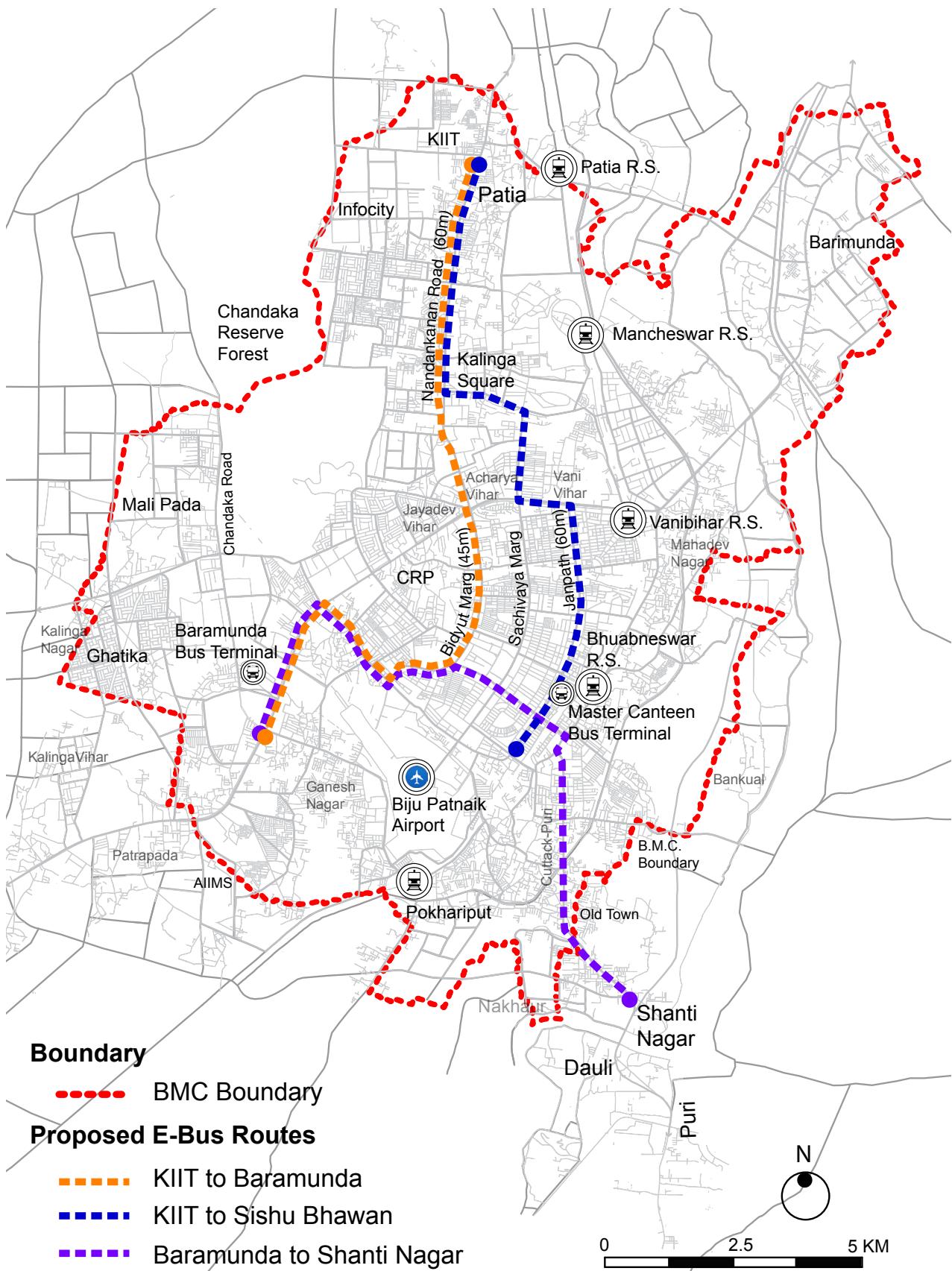
Corridor	Origin	Destination	Route Length (In kms)	Max PPHPD
Corridor 1	KIIT	Shishu Bhawan	11.5	2147
Corridor 2	Damana	AG Square	11	2080
Corridor 3	Baramunda	Shanti Nagar	12.2	1288

Source: BRT DPR, prepared by CEPT University, 2014

As a big push towards modernizing its bus services, these proposed corridors are considered to be developed as high capacity corridors with high quality services which provides utmost comfort to its commuters, only comparable to the envisaged BRT system.

Annexure

1



Map showing Trunk Route

B. Selection of bus technology:

Selection of most appropriate bus technology for the proposed corridors has been done after a comparative assessment of all the available technologies, which can be broadly classified into two broad categories:

1. Internal Combustion Engines (ICE) vehicles:

- » Diesel based buses.
- » Compressed Natural Gas (CNG) based buses.
- » Biofuel/ Ethanol mix buses
- » Hybrid buses

2. Electric Buses

Detailed comparison of all the technologies are provided below:

Sl. No	Parameters	Diesel Buses	CNG Buses	Bio Fuels powered Buses	Hybrid Buses	Electric Buses
1	Power Source	Diesel	CNG	Biofuels mix	Electricity + fuels	Electricity
2	Fuel Dispensing Infrastructure	Readily Available	Unavailable (High cost)	Unavailable (Marginal Cost)	Unavailable/ Available (Medium cost)	Unavailable (Medium Cost)
3	Fuel Efficiency (INR/km)	15-23	13-20	18-Dec	13-17	10
4	Emissions	High (baseline)	Low (equal CO ₂ , less SO _x , NO _x and NMHC)	Low (less CO ₂ , SO _x , NO _x and NMHC)	Low (less CO ₂ , SO _x , NO _x and NMHC)	Zero (local)
5	Noise	High (baseline)	High	High	Low (at slow speeds)	Minimum
6	Maintenance	High	High	Higher	Higher	Lowest
7	Maturity of Technology	High	High	Medium/ Trial runs performed	High/ not deployed on large scale	High/ deployed on large scale outside India
8	Government Policies	No specific benefits	No specific benefits	Not established	Fiscal incentives on rolling stock in the past (FAME Policy)	Fiscal incentive. Govt. push for faster adoption of technology and lowering cost of rolling stock

After analyzing various technologies for buses, and based on the overall benefits in terms of operational costs and environmental benefits, electric buses seem to be the favourable option and hence are opted for operations on these corridors.

C. Estimation of Fleet Size:

Details of fleet estimation has been given below:

Corridor	Origin	Destina-tion	Route Length (kms)	Headways (In min)
Corridor 1	KIIT	Shishu Bhawan	11.5	3
Corridor 2	Damana	AG Square	11	3
Corridor 3	Baramunda	Shanti Nagar	12.2	3

Total requirement of e-buses

Calculation is based on: 1. Average speed of the bus – 20 kmph, 2. at 90% Fleet Utilization

D. Implementation Strategy:

The proposed e-buses shall operate under the supervision of present city bus authority, Bhubaneswar Puri Transport Services (BPTS) along with other buses. BPTS shall engage competent bus operator/s on Gross Cost Contract model. Separate Depot facilities shall be created for e-buses to suit the appropriate infrastructural requirements.

E. Estimated Cost

1. Cost of electric buses

Type of Electric Bus	No of Buses	Unit Cost (INR.)	Total Cost (INR.)
Standard Size (36+D)	92	2,00,00,000/-*	184,00,00,000/-
		Total	296,00,00,000/-

*Considering the e-buses has minimum following features:

- a. Lithium-ion based battery.
- b. Range 140 to 150 km in single charging.
- c. 100% charging within 4-5 hr. whereas 70% in first hr.

2. Cost of Charging Infrastructure development:

Type of Charger	Location	Nos.	Unit Cost (INR.)	Total Cost (INR.)
AC slow charger	Depots	72	2,00,000/-	1,44,00,000/-
DC fast charger	Terminal	20	25,00,000/-	5,00,00,000/-
		Total		6,44,00,000/-

ELECTRIC AUTO SERVICES AS COMPLEMENTARY FEEDER SERVICES

A. Coverage Area:

City aspires to shift to e-rickshaw from the existing conventional rickshaws over the next 10 – 15 years. To initiate the transition from conventional to e-rickshaw and to organize the rickshaw operators in Bhubaneswar, the city authority has decided to implement a pilot project. It will also act as complementary feeder service to the main trunk services improving the last mile connectivity. Initiating the experimental pilot, the city authority has decided to introduce 500 e-rickshaws. In later stage city will encourage and provide necessary support to rickshaws owners/operators to shift to e- rickshaws from the conventional rickshaws.

180 km of feeder network, consist of 36 routes, has been identified after analyzing exiting travel pattern of the citizen and present auto routes.

B. Implementation Strategy:

The e- rickshaws shall be operated as aggregator services like other rickshaws aggregators “Jugnoo” or “Ola” etc.

C. Estimated Cost

1. Cost of electric rickshaws

Particular	No	Unit Cost (INR.)	Total Cost (INR.)
Electric Rickshaws	500	1,80,000/-*	9,00,00,000/-
		Total	9,00,00,000/-

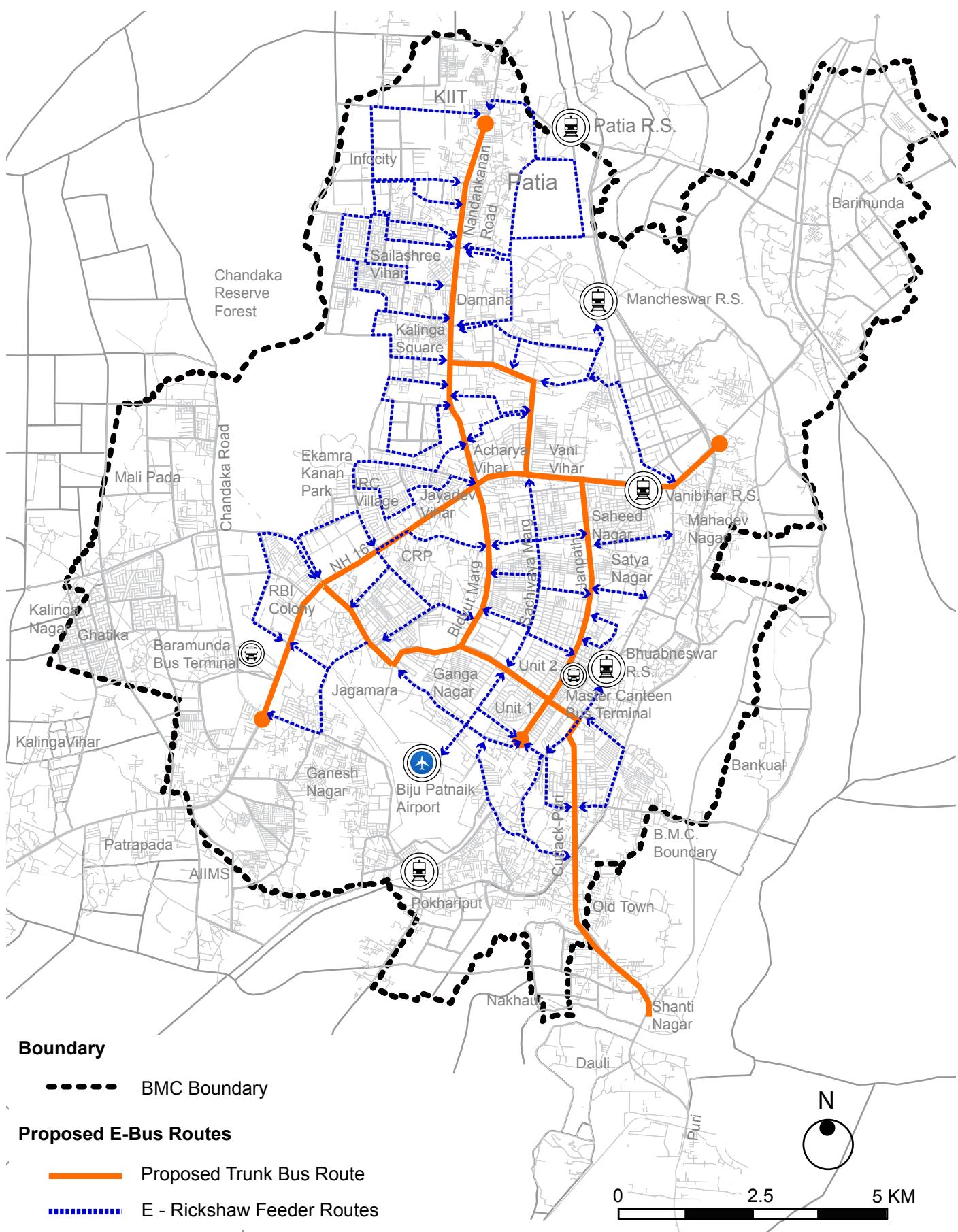
*Considering lithium- ion battery vehicle

2. Cost of Charging Infrastructure development:

Type of Charger	Nos.	Unit Cost (INR.)	Total Cost (INR.)
AC slow charger	400	48,000/-	19,20,000/-
DC fast charger	50	3,60,000/-	1,80,00,000/-
	Total		1,99,20,000/-

Annexure

1



Map showing E-Rickshaw Routes feeding to main Bus Trunk Route

PUBLIC BICYCLE SHARING

To achieve the sustainable mobility goals defined in the vision statement of Bhubaneswar Smart city proposal, city has identified various mobility interventions. Out of which, Public Bicycle Sharing (PBS) system shall act as the key element of the city's strategy to expand the use of more active-green modes of transport. It is also expected that Bhubaneswar PBS project will boost and operate as a complementary services to the city bus system by providing last mile connectivity and simultaneously expanding the service area of the existing bus system. Further considering the hilly terrain of the city, provision of e-bicycles is also mandated in the overall PBS system.

A Request for Proposal has already been floated to Design, Procure, Install, Operate and Maintain Public Bicycle Sharing System in Bhubaneswar. The RfP

seeks proposals for min. 1000 bi-cycles, with min. 25% (275+10% extra) of total bi-cycles as e-bicycles. The proposal gives flexibility to the bidder to propose as many as e-bicycles. It is anticipated that more number of e-bicycles in the PBS system, would further encourage the use of bicycles in the city.

In addition, city has conducted adequate market study prior to floating the RfP for PBS system in Bhubaneswar. Based on the feedback from the major agencies in this field, it seems to be a feasible proposal to include as many as e-bicycles in the PBS System. The broad market study suggests cost of each e-bicycle around INR 1.50 lakh. The supporting infrastructural costs would be separate. City seeks the support to set up the necessary infrastructure to support the any additional number of e-bicycles.

REQUEST FOR PROPOSAL

RFP No.: BSCL/17/17/3055
Date: 10th November, 2017

Project Name: Implementation of Smart City Projects under Smart City Mission in Bhubaneswar City

Name of Assignment: Selection of Agency to Design, Procure, Install, Operate and Maintain Public Bicycle Sharing System in Bhubaneswar



Bhubaneswar Smart City Limited,
 2nd Floor, Block – 1, BMC Bhawani Office Complex,
 Saheed Nagar, Bhubaneswar – 751 007,
 Odisha

PBS Tender, uploaded on 10th November, 2017

Section 5 – Technical Requirements

3. Project Components

3.1 Bicycles:

- 3.1.1 The Contractor has to procure newly manufactured bicycles as per minimum specification mentioned in the clause no 4 of this section. These bicycles shall not have been put to commercial use anywhere previous to the commercial operations date, except those used in pilot testing within this project.
- 3.1.2 The Contractor has to procure a total of 1000 bicycles (authorised fleet size). **25% of the bicycles should be electric assisted (Pedelec), based on contractor's solution.**
- 3.1.3 The Contractor shall also procure additional bicycles (at least 10% extra) as standby, to maintain the bicycle availability as per the minimum requirement specified in the Service Level Agreement of this section.
- 3.1.4 The client may decide to increase the fleet size of cycles based on demand requirement. Such decision will be based on assessment as per methodology provided below: -

if " $r/f > 6$ " where,

" r " is the average number of rides during the previous 30 days; and
" f " is the authorised fleet during the previous 30 days.

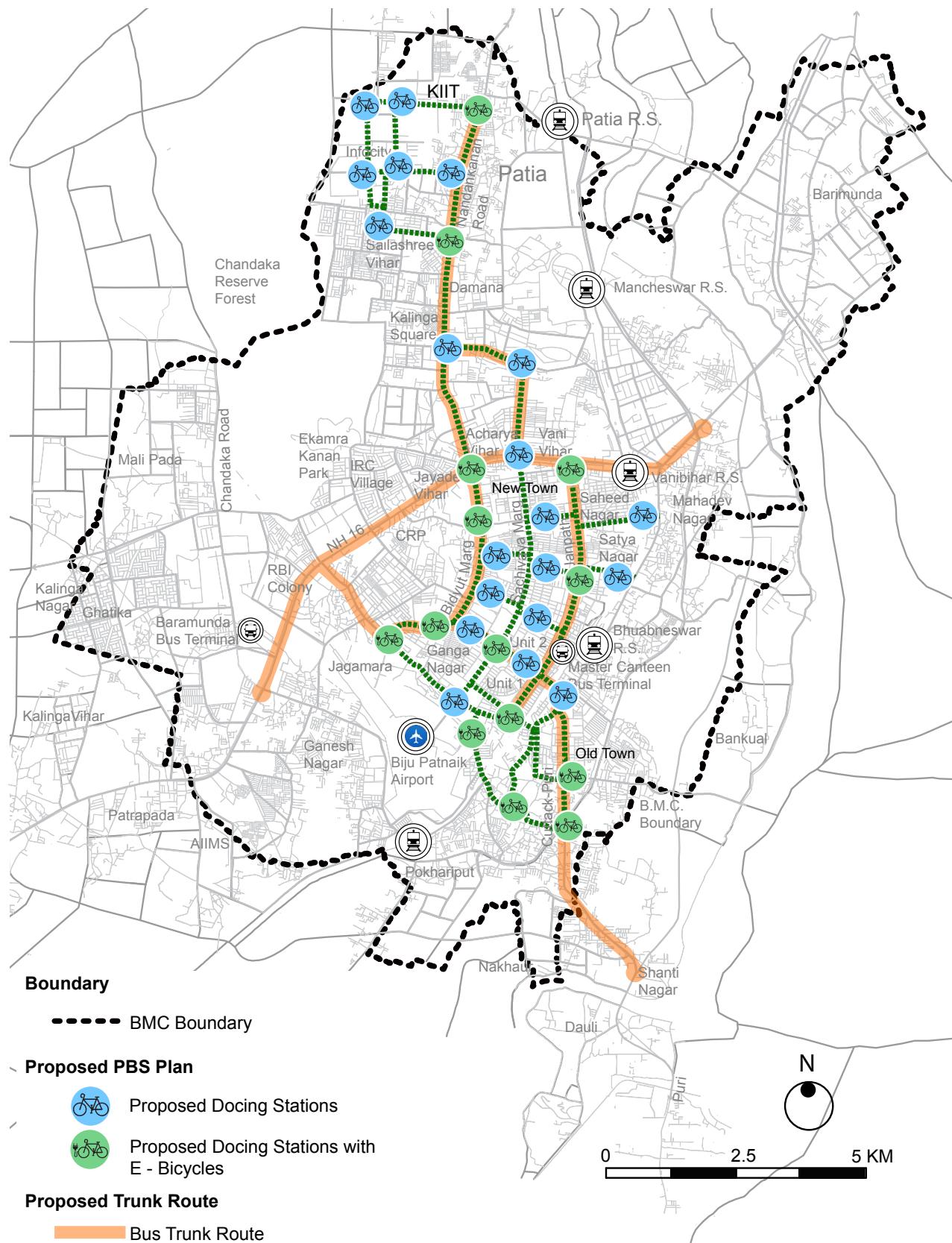
Generally, the incremental changes will be made for at least 100 bicycles at a time. However, the client shall reserve the right to decide exact quantity and which shall be final and binding on all.

PBS Tender talks about electric assisted bicycles

Annexure

1

The PBS System spread/locations for stations, etc. shall be worked out by the selected bidder, however a tentative network for PBS along with the stations is being worked out for preliminary analysis and feasibility purpose. The PBS network is planned to complete the trunk network and provide the last mile connectivity to the citizens. Below is the city map showing PBS network along with the e-bicycle docking stations;



ELECTRIC 4 WHEELER PASSENGER CARS

A. Estimation of Fleet Size

Various city agencies in Bhubaneswar have deployed four wheeler vehicles for their officials on hire basis from private agencies. The number of vehicles hired for various city agencies are as follows:

1. Bhubaneswar Municipal Corporation (BMC) – 45 Vehicles
2. Bhubaneswar Development Authority (BDA) – 40 Vehicles
3. Bhubaneswar Smart City Limited (BSCL) – 8 Vehicles
4. Bhubaneswar Puri Transport Services (BPTS) – 2 Vehicles

Total number of vehicles- 95

It is proposed that the above mentioned requirement of city agencies which is currently fulfilled by conventional vehicles shall be shifted to electric 4-wheeler passenger cars. This shall help in encouraging multi-modal public transportation system through shared electric mobility in the city and thereby, helping better air quality of the city. In this regard, all four agencies have shown their interest for the same and Letters of Intent to this effect have been attached as Annexure 2,3 and 4.

It must be noted that none of these vehicles are owned by the city agencies and are hired from private agencies on contractual basis. Hence, it shall not be difficult for the city agencies to shift the electric 4-wheeler passenger cars for their requirement.

B. Implementation Strategy:

The electric 4-wheeler passenger cars shall be procured by the city agencies utilizing the subsidy provided under this scheme and shall be operated and managed by private agencies who will be hired through competitive bidding process.

C. Estimated Cost

1. Cost of electric cars:

Particular	No	Unit Cost (INR.)	Total Cost (INR.)
4W EV Sedan (with in-built Telematics/GPS + Fast Charging Port) (including taxes, insurance and 1 year AMC)	100	10,50,000/-*	10,50,00,000/-
Fleet Management System Software, Mobile apps	100	1,00,000/-	1,00,00,000/-
Mobile devices	100	8,000/-	80,000/-
		Total	11,50,80,000/-

*Considering lithium- ion battery vehicle

2. Cost of Charging Infrastructure development:

Type of Charger	Nos.	Unit Cost (INR.)	Total Cost (INR.)
DC-FC Station (includes telematics/GPS, RFID, Bluetooth support) charging unit cost, taxes, installation, commissioning, transport, and insurance) with 1 year AMC	15	5,00,000/-	75,00,000/-
Smart AC Charger (with net-metering and cloud connected)	50	2,00,000/-	1,00,00,000/-
Auxiliary Equipment - All-weather shelter, 3phase 415V 4-core cabling and other ancillary infrastructure (couplers, filters, meters)	15	2,00,000/-	30,00,000/-
Charging Station Management Software	65	1,00,000/-	65,00,000/-
		Total	2,70,00,000/-

Undertaking from Bhubaneswar Development Authority

Dr. Krishan Kumar, IAS
VICE-CHAIRMAN, BDA &
MUNICIPAL COMMISSIONER
BHUBANESWAR MUNICIPAL CORPORATION



ତା. କ୍ରିସନ୍ କୁମାର, ଡା.ପ୍ର.ସେ.
ଉପାଧୀକ, ଭୁବନେଶ୍ୱର ଉତ୍ସୁକ କର୍ତ୍ତ୍ତୁପତ୍ର ଏବଂ
ମୁୟନିସିପାଲ କମିଶନର,
ଭୁବନେଶ୍ୱର ମୁୟନିସିପାଲ କର୍ପାରେସନ

Letter No: ୨୩/Vc /BDA

Dated the ୩୦. th, Nov,2017

To

The Managing Director,
Bhubaneswar Puri Transport Services,
BMC Campus, Vivekananda Marg
Kalpana Square, Bhubaneswar - 751014

Sub: Letter of Intent to shift to Electric 4-wheelers Passenger Cars for all BDA requirement

Sir,

Bhubaneswar Development Authority (BDA) has currently taken 40 conventional vehicles on hire from various private agencies. To encourage comprehensive air quality solutions of cities and to promote multi-modal public transportation system through shared electric vehicle in the cities, we would like to shift to Electric 4-wheelers Passenger Cars for all our current and future requirement. As all our vehicle requirement is fulfilled by hired vehicles from private agencies rather than owning them, we shall be glad to shift to Electric 4-wheelers Passenger Cars at the earliest.

Yours' faithfully,


Vice Chairman,
Bhubaneswar Development Authority (BDA)

BHUBANESWAR DEVELOPMENT AUTHORITY

Akash Shova Building, Pandit Jawaharlal Neheru Marg,

Bhubaneswar-751 001, Odisha

Tel: +91-674-2396124, Fax: +91-674-2390633

E-mail: vc@bdabbsr.in, Website: www.bdabbsr.in

Undertaking from Bhubaneswar Municipal Corporation

Dr. Krishan Kumar, IAS
MUNICIPAL COMMISSIONER &
VICE-CHAIRMAN, BDA, BHUBANESWAR



ଡା. କ୍ରିଷ୍ଣ କୁମାର, କା.ସ୍ଟ.ସେ.
ମୁନିଶିପାଲ କମିଶନର ଏବଂ
ଉପାସ୍ତ, ଭୁବନେଶ୍ୱର ଉତ୍ସବ କର୍ତ୍ତାଙ୍କ

No. 28395 / Date: 30-11-2017

To

The Managing Director,
Bhubaneswar Puri Transport Services,
BMC Campus, Vivekananda Marg
Kalpana Square, Bhubaneswar - 751014

Sub: Letter of Intent to shift to Electric 4-wheelers Passenger Cars for all BMC requirement

Sir,

Bhubaneswar Municipal Corporation (BMC) has currently taken 45 conventional vehicles on hire from various private agencies. To encourage comprehensive air quality solutions of cities and to promote multi-modal public transportation system through shared electric vehicle in the cities, we would like to shift to Electric 4-wheelers Passenger Cars for all our current and future requirement. As all our vehicle requirement is fulfilled by hired vehicles form private agencies rather than owning them, we shall be glad to shift to Electric 4-wheelers Passenger Cars at the earliest.

Yours' faithfully,


Commissioner

Bhubaneswar Municipal Corporation (BMC)

Undertaking from Bhubaneswar Smart City Limited



Bhubaneswar Smart City Limited

Block-1, 2nd Floor, BMC- Bhawani Mall, Saheed Nagar, Bhubaneswar- 751007,
E-mail Id: bbsr.bscl@gmail.com | CIN: U74990OR2016PLC020016

Letter No: 3297/BSCL

Date: 30.11.2017

From:

Managing Director,
Bhubaneswar Smart City Ltd. (BSCL)

To:

Managing Director,
Bhubaneswar Puri Transport Services,
BMC Campus, Vivekananda Marg
Kalpana Square, Bhubaneswar - 751014

Sub: Letter of Intent to shift to Electric 4-wheelers Passenger Cars for all BSCL requirement

Sir,

Bhubaneswar Smart City Ltd. (BSCL) has currently taken 08 conventional vehicles on hire from private agency. To encourage comprehensive air quality solutions of cities and to promote multi-modal public transportation system through shared electric vehicle in the cities, we would like to shift to Electric 4-wheelers Passenger Cars for all our Current and future requirement. As our current vehicle requirement is fulfilled by hired vehicles form private agency rather than owning them, we shall be glad to shift to Electric 4-wheelers Passenger Cars at the earliest.

Yours' faithfully



Managing Director,

Bhubaneswar Smart City Ltd. (BSCL)

Undertaking from Ola.



ANI TECHNOLOGIES PRIVATE LIMITED.
CIN - U72900KA2010PTC086596

Registered Office : Regent Insignia, # 414, 3rd Floor,
4th Block, 17th Main, 100 Feet Road,
Koramangala, Bangalore - 560034
Landline: +91 080 6735 0900
Fax: +91 080 6735 0904

www.olacabs.com

Date: 30th Nov, 2017.

To
The Managing Director,
Bhubaneswar Puri Transport Services (BPTS),
Bhubaneswar.

Sub: Proposal for collaboration with Bhubaneswar Puri Transport Services and other government departments for promotion and introduction of Electric 4-wheelers Passenger Cars and Electric 3-Wheelers in the city of Bhubaneswar

Dear Sir,

ANI Technologies Pvt. Ltd., operating under the trade name Ola Cabs, is a mobile technology platform which is working towards solving the mobility challenges of the citizens of India by integrating city transportation for customers and driver partners. Ola has a network of over 8,00,000 vehicles (including 4 wheelers and auto-rickshaws) providing ride services to over 1.5 mn passengers on a daily basis across 115 cities. Ola launched India's first multimodal electric vehicle project in Nagpur on 26th May, 2017. Bringing key stakeholders of the EV ecosystem together, Ola has built an electric mobility ecosystem at scale that includes world-class battery charging and swapping infrastructure and a range of vehicle fleet, in a short span of time.

We are glad to know that Bhubaneswar is submitting its proposal in response to the "Expression of Interest inviting Proposals for availing incentives under FAME India Scheme of Government of India from State Government Departments/ Undertakings/ Municipal Corporation for Million Plus Cities". We are happy to inform that we would like partner with Bhubaneswar Puri Transport Services and any other government agencies for promotion and introduction of Electric 4-wheelers Passenger Cars and Electric 3-Wheelers in the city.

Sincerely,

Name: Solomon Dheeraj Mudumala

Designation: Sr Manager, Community Relations

Branch Office : Maruthi Infotech Center, 5th Floor, 11/1, 12/1, Koramangala Inner Ring Road,
Bangalore - 560 071, Tel : 080 46655300 Fax : 080 3085 3042

ANI Technologies Private Limited

Scanned by CamScanner

Undertaking from Lithium



Date: November 1, 2017

Dr. Krishan Kumar, IAS
Managing Director
Bhubaneswar Puri Transport Services,
BMC Campus, Kalpana Chhak,
Bhubaneswar, 751014

Subject: Letter of support: FAME India Scheme of Department of Heavy Industries, Government of India

Dear Sir,

Further to our discussions with your team, Lithium Urban Technologies Private Limited ("Lithium") is pleased to confirm its support to Bhubaneswar Development Authority in implementing the vision of enhancing mobility through deployment of electric vehicles.

Lithium is India's first 100% Electric Vehicle (EV) based Fleet Management Services Provider. The company's objectives have been to bring in sustainable urban mobility to cities, professionalize the blue-collared driver ecosystem, and build a high-tech fleet management technology and analytics platform.

Lithium started in June 2015, and in the past 2.5 years, we have deployed a fleet of 400+ company owned EVs and 900+ drivers, and have already clocked 20+ million "green" kilometres, serving marquee corporate clientele across Bangalore and NCR. We are now expanding into Pune, Hyderabad, Chennai and Mumbai in the coming 2 quarters, and are expected to grow to 1000 EVs in next 18-24 weeks.

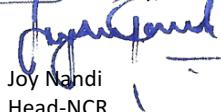
Lithium currently operates 60+ captive DC-Fast Charging stations for its clients, and recently has signed an MoU with the Department of Heavy Industries (DHI) for a partnership to set up 60 public EV Fast-Charging Infrastructure across the NCR region to cater to 4W, 3W and 2W EVs.

Our operational experience, backed by technology platforms we have developed, allows us to operate EVs running 300-350km/day despite any range constraints of EVs, and run EV Charging stations with over 67% utilisation. Our technology platform, which includes embedded in-vehicle telematics and GPS systems in all EVs, allows for remote tracking and monitoring of these EVs which adds to the safety and security of passengers, especially women.

From predominantly operating 4W EVs in our fleet until now, Lithium is also exploring using EV Buses for Corporate Employee Transport, and 3W EVs and 2W EVs for cargo and logistics delivery services.

In the event Bhubaneswar city is able obtain incentives under the FAME India scheme, we will be delighted to support the city in the implementation of the program, and operate EV 4W cars, and help install and operate the DC-Fast Charging network required for supporting EVs in the city.

Yours sincerely,


Joy Nandi

Head-NCR

Lithium Urban Technologies, Pvt. Ltd.



Lithium Urban Technologies Private Limited

CIN: U74900KA2014PTC076835

Registered Office: 158, 1st Floor, Seetaramapalya Village, Mahadevapura, Bangalore 560048, Karnataka

NCR Office: A9, Sector 2, Noida 201301, Uttar Pradesh

Proceedings of BPTS related to deployment of E-Buses

MINUTES OF MEETING OF THE REVIEW MEETING CONDUCTED ON 13/09/17
AT 11:00 AM IN THE CONFERENCE HALL OF VC, BDA FOR BHUBANESWAR
CITY BUS MODERNIZATION PLAN PROJECT.

Members Present: As per list attached.

VC, BDA-cum-MD, BPTS welcomed all the members and invitees to the meeting. Thereafter the meeting started with presentation by UMTCL on the present status of Bhubaneswar City Bus Modernization Plan. The presentation broadly covered following parameters of the project:-

- (i) Brief findings from Actionable Strategy Report and what actions shall be taken for optimizing the use of infrastructure and reduce losses.
- (ii) Assessment of existing institutional frameworks and policies.
- (iii) Major decision points which may affect the project timelines.

Following Observations were made after the detail discussion on the abovementioned areas:-

1. Looking at the need of improvised city bus services before the Hokey World Cup in 2018, it was decided that the project shall be divided into two phases.
2. In Phase – I, the project consultant shall estimate immediate requirement of buses to enhance the service quality, as per SLB-1 prepared by MoUD covering existing major road networks in Bhubaneswar.
3. In Phase – II, the project consultant shall prepare a Detailed Project Report on the basis of demand analysis and others as mentioned in the contract agreement.
4. For priority corridor of 32 kms. (approx.), it was suggested that UMTCL should explore various technological options in bus services including battery operated, opportunity charging, battery swapping, trolley buses etc. with broad cost estimations for implementing those services in Bhubaneswar. All the options shall be compared with the comfort level of BRT services.
5. Prepare a detailed presentation with 3-4 possible options of contractual framework for BPTS bus operation, including option explaining the implications on the SPV or the Govt. if the buses are procured by them. The

Proceedings of BPTS related to deployment of E-Buses

model shall have the flexibility of changing or modifying different key parameters, like percentage of public funding.

6. Prepare and submit a draft RFP for engaging bus operator by the mid October i.e. 15th Dec'17.
7. The operator selection RFP shall have 3-4 different packages including no of buses and depot-cum-terminal space for each package.
8. Identify the different sources of funds for creating and sustaining of the proposed Urban Transport Fund (UTF). UTF preferably should be at city specific supported by State budget.
9. Submit a detailed institutional structure required for BPTS to operate and maintain the future operations as part of Institutional framework report
10. Prepare a term sheet of operator selection RFP with all other important discussion points for the next review meeting which shall be organized on 25th Sep'2017.

[Action: UMTCL]

11. RFP for selection of Programme Management Consultant for managing different operations of BPTS shall be prepared by BDA PMU.

[Action: BDA PMU]

The meeting ended with vote of thanks to the chair and vice versa.



Chairman
VC, BDA-cum-MD, BPTS

Proceedings of BMC related to E-Vehicle Policy

Proceedings of the Meeting

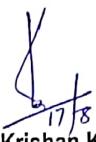
1	Meeting	:	1 st meeting on Market Assessment Study for adoption of Electric Vehicles in Bhubaneswar
2	Chairman	:	Dr. Krishan Kumar, IAS, Vice Chairman, BDA
3	Date	:	18.07.2017
4	Time	:	4:30 PM
5	Venue	:	New Conference Hall, BDA

The meeting was held under the Chairmanship of Vice Chairman, BDA. It started with a brief introduction by Project Coordinator, IFC and followed by a detailed presentation on the above mentioned project. After detailed discussion following decisions were made for more focused and improved study on the subject:

1. Bhubaneswar e-vehicle policy should be comprehensive in nature including all types of vehicles.
2. The Consultant shall prepare a 5 year roll-out plan of electric autos in Bhubaneswar, which includes but not limited to:
 - i. Phase-wise implementation plan.
 - ii. Migration plan from existing diesel autos to e-autos.
3. The consultant shall prepare a detailed report on Institutional framework and handholding support required to Bhubaneswar Municipal Corporation to roll-out the e-autos in Bhubaneswar.
4. The consultant shall prepare a detailed pilot implementation plan, which includes but not limited to:
 - i. Delineation of e-auto plying area.
 - ii. No of e-autos required.
 - iii. Details of Infrastructure requirement, i.e. charging points, locations, capacity etc.
 - iv. Preferred development model for e-auto infrastructure.
5. The consultant shall share the required notifications/ regulations adopted by various city authorities to regulate e-autos, i.e. a) E-auto licensing in Pondicherry, b) Notification for Air Ambience Fund for Delhi, c) Building Regulation of Hongkong etc.
6. IFC shall share the detailed list of all the stakeholders with BDA, required for successful pilot implementation.

- 19
7. A meeting shall be organized with top ten e-auto manufacturers to understand the proper requirements.
 8. The consultant shall evaluate the Nagpur model i.e. one operator for the pilot implementation area.
 9. Mr. Sayan Roy shall be the nodal person from BDA for providing coordination with IFC & their consultant for UMTA.

The meeting ended with vote of thanks to and from the chair.



(Dr. Krishan Kumar, IAS)
VICE-CHAIRMAN, BDA



BHUBANESWAR PURI TRANSPORT SERVICES