



Metro

Los Angeles County  
Metropolitan Transportation  
Authority  
One Gateway Plaza  
3rd Floor Board Room  
Los Angeles, CA

## Board Report

File #: 2016-0881, File Type: Contract

Agenda Number: 21.

### EXECUTIVE MANAGEMENT COMMITTEE MARCH 16, 2017

**SUBJECT: CONTRACT OP29199, BYD BATTERY ELECTRIC ARTICULATED TRANSIT BUSES AND CHARGING EQUIPMENT FOR DEPLOYMENT ON THE METRO ORANGE LINE**

**ACTION: APPROVE CONTRACT OP29199 WITH BYD MOTORS FOR FIVE ARTICULATED BATTERY ELECTRIC BUSES**

#### **RECOMMENDATION**

CONSIDER:

- A. FINDING that compliance with PUC sections 130232 and 130233 does not constitute a method of procurement adequate for the operation of prototype equipment and herewith approves the procurement of prototype buses under PUC section 130236 without further observance of any provisions regarding contracts, bids, advertisement or notice;
- B. APPROVING the **Advanced Transit Vehicle Consortium's (ATVC) Award and Execution of a non-competitive Contract No.OP29199 with BYD Motors, Inc. (BYD), for the purchase of five (5) prototype 60 foot articulated battery electric vehicles and charging equipment at a firm fixed price of \$6,594,771, including applicable taxes;**
- C. AUTHORIZING the Contract Modification credit in the amount of \$3,000,000 under Contract No. OP33202790, with BYD, resulting from the buy-back of five (5) battery electric 40 foot vehicles delivered to Metro to be expended on the five prototype articulated battery electric vehicles in recommendation B; and
- D. CLOSING project 201071 Bus Acquisition 30 Zero Emission/Super Low Emission and utilize unused funds from this project to establish a Life-of-Project (LOP) Budget of \$8,109,500 for project 201074, BYD 60 foot Articulated Zero Emission Bus.

(REQUIRES TWO-THIRDS VOTE)

#### **ISSUE**

ATVC and Metro are committed to deploying zero emission vehicles and transitioning the Metro bus fleet to zero emissions as vehicle capabilities and fiscal capacity allow.

In October 2016, Metro's Board of Directors directed staff to develop an implementation plan to use all electric buses on the Metro Orange Line (MOL) Bus Rapid Transit (BRT) by 2020 (Attachment C - Motion by Directors Garcetti, Krekorian and Antonovich, October 27, 2016). Metro staff intends to present the requested implementation plan to the Board in April 2017.

To address the Board's directive, Metro plans to test various Zero Emission Bus (ZEB) technologies and charging strategies to determine which technology best suit Metro's operational environments and needs. To maximize the evaluation of emerging technologies, Metro has developed a strategy to procure prototype vehicles under four separate contract awards; two procurements on a single source basis, and two competitively awarded procurements. This approval for a non-competitive procurement to BYD will address the first of the four contract actions.

The second prototype contract will be a single source to New Flyer for five 60' articulated ZEBs and en-route charging equipment utilizing a recently awarded FTA LoNo grant. The third and fourth prototype contract awards will be competitively procured under RFP No. OP28367 Forty-Foot (40') and Sixty-Foot (60') Low Floor CNG or Zero Emission Bus Procurement. These other awards will be brought to the Board for consideration in Spring 2017.

## **DISCUSSION**

### **Metro Strategic ZEB Program**

Metro is working to transform what is already one of the cleanest CNG transit fleets in the nation to an entirely zero emission fleet as quickly as technologically and fiscally possible.

Metro's strategic plans include transforming the Metro Orange Line (MOL) into a 100% ZEB line by 2020 followed by the Metro Silver line shortly thereafter. The MOL BRT has been identified as the top candidate line to be converted to electric ZEB operation. The MOL operates on a 19 mile dedicated right-of-way, that utilizes platform fare collection, and operates at a higher average speed with less frequent stops. The operating profile of battery electric vehicles is well suited for this type of duty cycle. Passengers and residents along the line will benefit from the inherent quietness and zero emission aspects of these battery electric vehicles. Staff believes that placing BYD 60' articulated battery electric buses into service on the MOL will provide an ideal environment for demonstrating the capabilities of these zero emission electric vehicles.

Once the Orange and Silver lines have begun ZEB service, staff will continue to identify lines suitable for ZEB operation and implement those conversions. Eventually as the technical capabilities of vehicles advance and become more mature, a full conversion to ZEB will occur. Metro intends to only procure ZEB vehicles in the near future.

Approval of recommendation B ratifies the ATVC contract award action taken in March 2017 and will provide the first vehicles necessary to convert the MOL to ZEB operation.

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Background: Metro's ZEB Experience

Under a contract with BYD that was competitively awarded in June 2013, Metro tested five BYD 40' ZEBs. These buses were deployed at Metro Division 1 (Downtown Los Angeles) in April 2015. The operating performance of these initial 40' prototype buses did not meet Metro's daily operational requirements, and after a full year of operation, were removed from active revenue service at BYD's request.

In February 2016, BYD presented ATVC and Metro with an unsolicited proposal to repurchase the five 40' ZEBs in exchange for a \$3,000,000 credit towards the non-competitive purchase of five new 60' ZEB's that utilize BYD's latest generation technology and are manufactured to BYD's improved quality standards.

Staff's recommendation requests approval of the expenditure of the Contract Modification credit amount of \$3,000,000 to be used toward the purchase of five new, 60' battery electric buses that will be deployed on MOL BRT corridor.

Procurement Process

To procure the five 60' prototype ZEB's under a non-competitive procurement and to apply the proposed \$3 million credit, the Board must first find that the normal competitive methods of procuring these ZEB's are inadequate and that staff is directed to procure these prototype vehicles without observance of the normal competitive means. It is important to note that Metro is currently conducting two procurements for 40' and 60' ZEB's that are following normal competitive methods. Those two competitive procurements are for five (5) 40' and five (5) 60' ZEB vehicles, with options that could total up to 100 40' ZEBs and 100 60' ZEBs.

Technical Improvements at BYD

To address the original quality and reliability issues experienced at startup in April 2014, BYD has undergone a transformation at their Lancaster, CA facility. BYD has added quality engineers and inspectors and implemented a quality assurance program that tracks each vehicle as it moves through the assembly process. BYD is also pursuing ISO 9001:2008 certification, which is expected to be complete by mid-2017. The five 60' articulated buses proposed for Metro would be built in Lancaster and would meet BYD's updated quality assurance requirements.

BYD has also gained significant experience manufacturing buses locally. They are currently manufacturing 31 60' articulated buses at this facility for commercial orders with Antelope Valley Transit Authority and Albuquerque Rapid Transit, all of which are scheduled for delivery in 2017.

To address the suitability of their buses for Metro's operating environment, recent technological advances in battery capacity (range), and improvements in engineering and manufacturing capabilities at BYD are expected to provide next generation BYD articulated buses that are suitable for operation on high capacity BRT lines like Metro's Orange Line. The first of the 60' articulated electric buses will be delivered to Metro seven months after award of the contract and the fifth bus

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twelve months after award of the contract.

### BYD Battery Technology | Safety

BYD's 60' articulated buses are equipped with proprietary Lithium Iron Phosphate (LiFe PO<sub>4</sub>) batteries that offer a higher degree of safety over conventional Lithium Ion batteries. The BYD LiFe battery chemistry is not susceptible to thermal events (such as with the Samsung Galaxy 7 cell phone batteries). BYD batteries are non-flammable, non-combustible, and don't overheat. BYD's batteries offer a wide thermal operating range of -20°F through 140°F. Because they contain no caustic materials, heavy metals, or toxic electrolytes, they are also considered more environmentally friendly than most other Lithium Ion battery chemistries.

### BYD Prototype Experience

The bus type being proposed will be a prototype, but will have previous test and service experience. BYD demonstrated an early 60' battery electric prototype on Metro's Orange Line in December 2014. During the demonstration the bus was positively received by the operators, maintenance personnel, and passengers. In service vehicle performance was good, particularly in areas of acceleration and top speed. The bus also provided a smooth and very quiet ride. This bus has now accumulated 40,000 miles in demonstrations across North America. BYD has built two additional units in their Lancaster facility. One of these 60' buses was deployed to Altoona, PA for FTA's mandatory new bus testing. The second 60' bus was deployed to the Brazilian market. The new 60' BYD prototype bus proposed for Metro will have a new, more powerful rear axle drive motor assembly.

### Metro Operating Environment

While Metro learned a great deal about ZEB technology while testing the BYD's 40' ZEBs, the technology has advanced rapidly. Now, 21 months after those vehicles went into service it makes good business sense to test the latest generation of ZEB vehicles to fully assess the technologies against our operational environment and requirements.

### Cost/Price

The purchase price, per vehicle, for the original 40' BYD buses was \$756,316. The average net cost per vehicle was reduced to \$640,316 when Metro/ATVC received California Hybrid and Zero-Emission Truck and Bus Voucher credits. On June 2, 2016, BYD submitted an unsolicited offer to repurchase the 40' BYD vehicles and give the ATVC a credit of \$600,000 per vehicle to be used for the purchase of new BYD battery electric vehicles of ATVC's choice.

## **DETERMINATION OF SAFETY IMPACT**

There is no anticipated safety impact for operating zero emission electric buses on MOL. BYD is expected to utilize components and sub-systems that have been proven in heavy duty applications and have been mass produced, and used in buses currently in transit service.

Zero emission buses use high voltage electrical systems. While these systems are isolated from operator and passenger compartments, maintenance personnel will be provided with additional

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specialized training to ensure that they are prepared to maintain these higher voltage propulsion systems.

### **FINANCIAL IMPACT**

Upon Board approval, this action will establish an LOP budget of \$8,109,500 for the procurement of 5 BYD Articulated 60' battery electric buses. Unused funding from project 201071 will be transferred to cover expenses for the procurement of these buses starting in FY17. This funding is programmed in Cost Center 3320 - Vehicle Technology. Because this is a multi-year contract, the Cost Center Manager will be responsible for ensuring that future year funding is programmed.

#### **Impact to Budget**

The source of funds for this action is Measure R 35% which is eligible for clean fuel bus procurements. This funding source will maximize the use of funds for this activity. There is no anticipated impact to the FY17 budget.

### **ALTERNATIVES CONSIDERED**

Staff considered postponing this BYD project to purchase 60' ZE buses currently being solicited under RFP No. OP37267. This alternative is not recommended as it would delay the introduction of battery electric articulated buses into MOL. Further, it would limit Metro's ability to evaluate different technologies to determine which are the best fit for Metro's diverse operating environment. Metro does expect to purchase additional ZEB 60' buses under this solicitation, but there is no guarantee that BYD would prevail in this solicitation. If another vendor is selected for RFP No. OP38267, Metro would not be able to use the \$3,000,000 buy back credit offered by BYD. Given the significant value of the buy-back credit, staff recommends buying these five articulated buses from BYD.

### **NEXT STEPS**

When the Metro Board approves that ratification request, staff will obtain the \$3 million credit, execute the new contract with BYD and issue a Notice to Proceed.

In the Spring 2017, staff will return to the Board with a request for another non-competitive award to New Flyer for five prototype 60' articulated ZEBs and en-route charging equipment partially funded with a FTA LoNo grant award. Staff will return again with recommendations for additional prototype ZEB contract awards under a competitive procurement.

### **ATTACHMENTS**

Attachment A - Procurement Summary

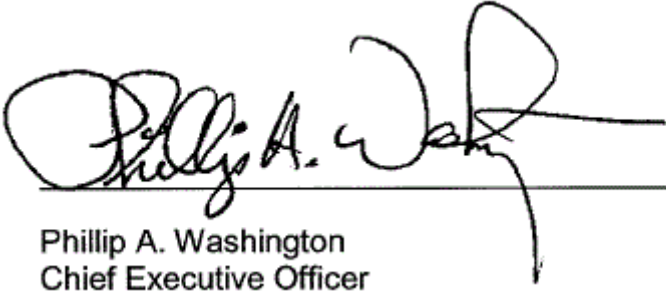
Attachment B - ATVC BR BYD Electric Bus Buy Back Proposal Dated, June 22, 2016

Attachment C - Motion by Directors Garcetti, Krekorian and Antonovich, Oct. 27, 2016

Attachment D - DEOD Summary

Prepared by: Steve Schupak, Sr. Manager, Project Control (213) 617-6294

Reviewed by: Jesus Montes, Sr. EO, Vehicle Acquisition (213) 922-3838  
James T. Gallagher, Chief Operations Officer (213) 922-4424  
Debra Avila, Chief Vendor/Contract Management Officer  
(213) 418-3051



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Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

## BYD BATTERY ELECTRIC ARTICULATED TRANSIT BUSES AND CHARGING EQUIPMENT FOR DEPLOYMENT ON THE METRO ORANGE LINE/OP29199

1.	<b>Contract Number:</b> OP29199	
2.	<b>Recommended Vendor:</b> BYD Motors, Inc.	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input checked="" type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	<b>A. Issued:</b> Not Applicable	
	<b>B. Advertised/Publicized:</b> Not Applicable	
	<b>C. Pre-Proposal Conference:</b> Not Applicable	
	<b>D. Proposals Due:</b> July 29, 2016	
	<b>E. Pre-Qualification Completed:</b> TBD	
	<b>F. Conflict of Interest Form Submitted to Ethics:</b> February 21, 2017	
	<b>G. Protest Period End Date:</b> Not Applicable	
5.	<b>Solicitations Picked up/Downloaded:</b> Not Applicable	<b>Bids/Proposals Received:</b> Non-competitive offer
6.	<b>Contract Administrator:</b> Wayne Okubo	<b>Telephone Number:</b> (213) 922-7466
7.	<b>Project Manager:</b> Steve Schupak	<b>Telephone Number:</b> (213) 922-2170

**A. Procurement Background**

This Board Action is to approve Contract No. OP29199 for the non-competitive purchase of five 60-foot prototype battery electric buses and corresponding charging equipment from BYD Motors, Inc. (BYD). The Board action also recommends approval of the expenditure for the new prototype buses a credit in the amount of \$3,000,000 offered by BYD for the buy-back of five 40-foot battery electric buses delivered under Contract No. OP33202790. The unsolicited offer to buy-back the 40-foot buses was a result of BYD's ability to provide a newer generation of battery electric vehicles. The 60-foot prototype buses are not only of an improved generation, but also will be deployed at the Metro Orange Line where the operating conditions are more suitable for a battery-electric bus.

**B. Evaluation of Proposals**

Metro's Vehicle Technology and Acquisition department reviewed the technical proposal against the Zero Emissions Bus Technical Specification used in the current RFP solicitation for 60-foot buses. This evaluation was performed to ensure that the proposed prototype bus met basic Metro standards. Through a series of discussions and clarifications, the Vehicle Technology and Acquisition department determined that BYD's proposed bus substantially meets the Technical Specification requirements and appears to be acceptable for the Orange Line deployment. Final determination of suitability for Metro service use will be made after delivery of these prototype buses based on a pre-determined evaluation process that includes

capture of data for vehicle service range, maintainability, safety aspects and other factors.

### **Qualifications Summary of Firms within the Competitive Range:**

#### **BYD Motors, Inc.**

BYD is the largest manufacturer of Zero Emissions Buses in the world. In North America, their current deployment is a fleet of 40 buses, with confirmed orders exceeding 120 buses along with options for an additional 120.

These prototype articulated buses will be manufactured at BYD's assembly plant located in Lancaster, CA, and will utilize Iron Phosphate (Fe) batteries, which are thermally stable, nontoxic, completely recyclable, nonflammable, and noncombustible. The first of the 60' articulated electric buses will be delivered to Metro seven months after award of the contract and the fifth bus twelve months after award of the contract.

#### **C. Cost/Price Analysis**

The recommended price for the new 60-foot battery electric buses has been determined to be fair and reasonable based upon MAS audit findings, cost analysis, technical evaluation, and negotiations.

The recommended credit has been determined to be fair and reasonable based on a technical evaluation and price analysis of the depreciation, useful life and value of the five 40-foot battery electric vehicles returned to BYD. The recommended credit of \$3,000,000 exceeds the remaining value in these one year old vehicles that were no longer in operation. The remaining value to Metro, estimated at \$581,000 per bus, was determined to be less than the credit offered of \$600,000 each.

	<b>Proposer Name</b>	<b>Proposal Amount</b>	<b>Metro ICE</b>	<b>Negotiated Amount</b>
1.	BYD Motors	\$7,151,342	\$6,417,534	\$6,594,771

#### **D. Background on Recommended Contractor**

The recommended firm, BYD Motors, Inc., located in Los Angeles, CA, has been in business domestically for six years and is a leader in the zero emissions bus industry. Worldwide, BYD has been developing electric and hybrid vehicle since 2004, introducing the world's first production plug-in electric hybrid vehicle in 2008.



# ADVANCED TRANSIT VEHICLE CONSORTIUM

Los Angeles County Metropolitan Transportation Authority  
One Santa Fe Ave., MS 63-4-1,  
Los Angeles, CA 90012

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JUNE 22, 2016

**TO: BOARD OF DIRECTORS**

**FROM: JOHN DRAYTON  
EXECUTIVE VICE PRESIDENT**



**SUBJECT: BYD ELECTRIC BUS BUY BACK PROPOSAL**

## **RECOMMENDATION**

1. Authorize the ATVC President to Accept BYD's unsolicited proposal dated June 2, 2016 offering to buy back five (5) battery electric 40 foot vehicles for a credit of \$3,000,000
2. Authorize the ATVC President to negotiate a new sole source contract to purchase up to five (5) new 60 foot articulated battery electric vehicles and charging equipment at a cost not-to-exceed \$6,670,000, including applicable taxes.

## **ISSUE**

ATVC and Metro have been conducting a demonstration test of five BYD buses since June 2015. To date, performance has not met operational requirements, mechanical reliability has been subpar compared to typical CNG vehicles, and technological advances in manufacturing at BYD have made these five vehicles an ill fit for current Metro operation.

## **DISCUSSION**

In June 2015 five BYD battery electric buses were put into service at Division 1 in downtown Los Angeles. Although BYD has been working hard to support this project, full integration of the ZEB's into Metro's operating environment has not been fully successful. Over the last 12 months, Metro accumulated a total of 36,000 miles in operation from Metro's Division 1 in Downtown Los Angeles. Limited range between charges and poor hill-climbing ability of these buses severely limits the lines on which they may be operated. Additionally, the buses have experienced low reliability. Though these challenges are typical when introducing a new product in a new environment, it has significantly impacted these buses availability for service.

Given these challenges, operation of these buses was suspended April 2016. Metro and BYD are currently discussing options for BYD to buy-back these buses and to offer a credit for future ZEB buses.

On June 2, 2016 BYD submitted an unsolicited and unprecedented offer to repurchase the 40' BYD vehicles and give the ATVC a credit of \$600,000 per vehicle to be used for the purchase of new BYD battery electric vehicles of ATVC's choice.

The Metro Orange Line has been identified as the top candidate line to be converted to electric operation. The Metro Orange Line operates on a dedicated right of way, utilizes platform fare collection, operates at a higher average speed due to less frequent stops, and has Metro owned terminus stations that can be retrofitted with en-route rapid charge equipment. The operating profile of battery electric vehicles is well suited for this type of duty cycle. Passengers and residents along the line will benefit from the inherent quietness of battery electric vehicles. Staff believes placing BYD 60' articulated battery electric buses into service on the Metro Orange Line will provide an ideal line for electric vehicles.

In December 2014 BYD brought their 60' articulated bus to Metro for a one week test on the Metro Orange Line. The overall performance of the vehicle was impressive, and the bus was positively received by the operators, maintenance personnel, and passengers. Vehicle performance was very good particularly in areas of acceleration and top speed; the bus also provided a smooth and very quiet ride.

### **DETERMINATION OF SAFETY IMPACT**

There is no anticipated safety impact for operating zero emission electric buses on Metro's Orange Line. New Flyer is expected to utilize components and sub systems that have been proven in heavy duty applications and have been mass produced and used in buses currently in transit service.

Zero emission buses are expected to use high voltage electrical systems. While these systems are isolated from operators and passenger compartments, maintenance personnel will need additional specialized training to ensure they are prepared to maintain these higher voltage propulsion systems.

### **FINANCIAL IMPACT**

Total LOP funding of \$3 million is included in Cost Center 3320 - Vehicle Technology, in project 201071. For FY17, there is \$6.308 million programmed to cover expenses for purchasing these buses and other zero emission bus projects. Because this is a multi-year contract, the ATVC President and the Cost Center Manager will be responsible for ensuring that future year funding is programmed.

### Impact to Budget

There is no anticipated impact to the FY16 or FY17 budgets.

### ALTERNATIVES CONSIDERED

1. Staff considered relocating the test to the new Division 13. This alternative is not recommended as it will incur additional infrastructure costs in relocating the chargers to that facility, and the routes do not substantially differ in profile from those at Division 1.
2. Staff considered initiating a new open procurement for 60' articulated battery electric vehicles. In June 2016 Metro issued a Request for Information and Qualification (RFIQ) to ascertain which transit vehicle manufacturers produce a battery electric 60' articulated transit bus. The results of this RFIQ indicate that only New Flyer and BYD currently offer this type of vehicle in the United States.

In April, Metro was notified of a grant award to purchase five New Flyer 60' articulated battery electric buses. Since New Flyer will provide the vehicles under this grant and the \$3 million repurchase credit is only applicable to buses purchased from BYD, staff does not recommend this alternative.

### Next Steps

Once the Board approves the actions requested in recommendations 1 and 2 above, staff will transfer title and deliver the five existing buses back to BYD. Then the ATVC President will negotiate a new sole source contract for the purchase of five 60' battery electric articulated buses from BYD, and return to the Metro Board for Approval.

Prepared by: Steve Schupak, Program Manager, Electric Bus Program

Attachment: A. BYD letter dated June 2, 2016 offering repurchase  
B. Funding and Expenditure Plan

Copies: ATVC Board Members and Alternates  
Phillip A. Washington, Metro CEO  
Stephanie N. Wiggins, Metro Deputy CEO  
James T. Gallagher, Metro COO  
Jesus Montes, Metro Executive Director Vehicle Acquisition

**BYD ELECTRIC BUY BACK PROPOSAL  
FUNDING/EXPENDITURE PLAN**

	FY17 +	Total	% of Total
<b>Uses of Funds</b>			
Bus Acquisition	\$6,570,000	\$6,570,000	97.0%
Charging Equipment	\$100,000	\$100,000	1.5%
Professional Services	\$100,000	\$100,000	1.5%
<b>Total Project Cost</b>	<b>\$6,770,000</b>	<b>\$6,770,000</b>	<b>100.0%</b>

	FY17 +	Total	% of Total
<b>Sources of Funds</b>			
Measure R 35%	\$3,770,000	\$3,770,000	55.7%
BYD 40' Bus Credit	\$3,000,000	\$3,000,000	44.3%
<b>Total Sources of Funds</b>	<b>\$6,770,000</b>	<b>\$6,770,000</b>	<b>100.0%</b>

Initial sources of funding planned for Measure R 35%. Staff will apply other federal, state and local sources as they become available and applicable to project sources.



June 2, 2016

Mr. John Drayton, Executive Vice President  
Advanced Transit Vehicle Consortium  
One Gateway Plaza  
M/S 99-9-1  
Los Angeles, CA 90012

Re: Unsolicited Proposal for Repurchase of five BYD Buses

Dear Mr. Drayton,

At a recent meeting with Mr. Gallagher and Mr. Montes, they shared LACMTA's vision and continued interest in the evolution of battery powered transit buses.

LACMTA displayed great vision and courage by becoming an early adopter of this technology through the purchase of the first five long range battery electric buses through the Advanced Transit Vehicle Consortium.

While we believe the five buses were State of the Art product at the time they were ordered and assembled, it has become clear over the last several months that the buses are not meeting LACMTA's expectations for range and overall reliability.

BYD Coach and Bus is committed to the success of the overall electric vehicle market as we believe that zero emission vehicles are one of the key cornerstones in the battle against global warming and in fostering the development of sustainable and renewable energy sources.

Further, BYD Coach and Bus holds as one of our core values that all owners of any of BYD's technologies are 100% satisfied and it has become apparent through ongoing dialogue with LACMTA staff that the current group of five buses are not meeting that standard.

To remedy this situation BYD Coach and Bus would like to offer you the following unsolicited proposal involving these steps:

1. BYD Coach and Bus will purchase the five buses back from LACMTA for a price of \$600,000.00 each.
2. To prevent any further investment of LACMTA staff resource, time, and energy we propose that the evaluation and operation of the buses be suspended and the buses be returned to BYD Coach and Bus on or before June 30th, 2016.
3. Upon mutual agreement to the steps outlined in this proposal BYD will post a credit to LACMTA's account in the amount of \$3,000,000.00 to be used against the purchase of new BYD buses of your choice.
4. BYD Coach and Bus will build and deliver the new bus selection in our plant in Lancaster CA. as buy America compliant buses and built to our most current configuration.



5. The new buses will be built in compliance to LACMTA and ATVC contract OP33202790 specifications and requirements, with the modifications attached to this agreement as Attachment A and will incorporate generational updates and upgrades.

At a minimum, the following advances in our technology will be integrated into the new buses:

- 280 amp hour batteries versus 200 amp hour batteries which means more energy and range in the same or less space
- 12 year unconditional battery warranty
- 100 kw continuous power wheel motors with 150 kw peak output versus the current 90 kw maximum output motors for 40 foot buses and 180kw motors for our 60 foot models translating to better hill climbing and better acceleration

We believe this plan of action will help maintain LACMTA's position as a leader in helping to advance emerging vehicle technology by resuming an evaluation program based on current and relevant vehicle technology.

All of us at BYD Coach and Bus are dedicated to total customer satisfaction and this repurchase plan represents our dedication to you as our valued customer and we hope you will agree that this plan provides an acceptable process to restoring the ev program on a successful path.

Thank you very much for your consideration of this proposal.

Very Best,

A handwritten signature in black ink, appearing to read "Macy Neshati", with a stylized flourish at the end.

Macy Neshati  
Vice President,  
BYD Coach and Bus

cc: James T. Gallagher, Metro Chief Operations Officer  
Jesus Montes, Metro Executive Director, Vehicle Acquisition  
Victor Ramirez, Metro Executive Officer, Procurement  
Steve Schupak, Electric Bus Program Manager  
Phil Rabottini, Sr. Engineer

# Metro



## Board Report

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**File #:**2016-0852, **File Type:**Motion / Motion Response

Agenda Number:42.

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**REGULAR BOARD MEETING  
OCTOBER 27, 2016**

**Motion by:**

**GARCETTI, KREKORIAN and ANTONOVICH**

October 27, 2016

**Relating to File ID 2016-0778**

APPROVE **Motion by Directors Garcetti, Krekorian and Antonovich** that the Board direct the CEO to report back on the following:

- A. Develop an implementation plan to use all electric buses for the Orange Line Bus Rapid Transit Line by 2020. The plan shall include, but not limited to, the following:
  - 1. Total cost of electrification
  - 2. Eligible funding sources to address the costs
  - 3. Federal and State grant opportunities
  - 4. A schedule and transition plan
  
- B. Report back on the feasibility to use all electric buses for the Silver Line. The report shall include, but not be limited to, the following:
  - 1. Type of electric bus
  - 2. Range requirements
  - 3. Charging and infrastructure needs
  - 4. A recommended schedule and transition plan

## DEOD SUMMARY

**BYD BATTERY ELECTRIC ARTICULATED TRANSIT BUSES AND CHARGING EQUIPMENT FOR DEPLOYMENT ON THE METRO ORANGE LINE / OP29199****A. Small Business Participation**

The Diversity and Economic Opportunity Department did not establish a Small Business Enterprise (SBE) goal for this unsolicited, non-competitive procurement. BYD Motors, Inc. made a 5% SBE and 3% DVBE commitment. BYD's efforts to meet their SBE/DVBE commitment will be monitored throughout the life of the Contract.

<b>Small Business Goal</b>	<b>0%</b>	<b>Small Business Commitment</b>	<b>5% SBE 3% DVBE</b>
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<b>SBE/DVBE Subcontractors</b>	<b>% SBE Commitment</b>	<b>% DVBE Commitment</b>
<b>TBD</b>	<b>5%</b>	<b>3%</b>

**B. Living Wage and Service Contract Worker Retention Policy Applicability**

The Living Wage and Service Contract Worker Retention Policy is not applicable to this Contract.

**C. Prevailing Wage Applicability**

Prevailing wage is not applicable to this Contract.

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract.