

**AUDIT OF FEDERAL TRANSIT
ADMINISTRATION'S OVERSIGHT OF
PIONEER VALLEY TRANSIT AUTHORITY
ELECTRIC BUS COOPERATIVE AGREEMENT**

Federal Transit Administration

Report Number: MH-2008-058

Date Issued: July 9, 2008



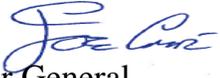
**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Memorandum

Subject: **ACTION:** Audit of FTA's Oversight of
Pioneer Valley Transit Authority
Electric Bus Cooperative Agreement
Federal Transit Administration
Report Number MH-2008-058

Date: July 9, 2008

From: Joseph W. Comé 
Assistant Inspector General
for Highway and Transit Audits

Reply to
Attn. of: JA-40

To: Federal Transit Administrator

This report presents the results of our audit of the cooperative agreement between the Federal Transit Administration (FTA) and the Pioneer Valley Transit Authority (PVTA) in Springfield, Massachusetts, to design and build a pre-production prototype for a battery-powered transit bus. ElectraStor, a private company in Pittsfield, Massachusetts, conducted the activities of this cooperative agreement.

FTA requested that the Office of Inspector General (OIG) review PVTA's management of cooperative agreements. In responding to that request, we became aware of concerns related to PVTA's management of its agreement with ElectraStor and initiated this audit. Our audit objectives were to determine whether:

- ElectraStor met Federal requirements to demonstrate that funds were spent on activities eligible for FTA reimbursement, expenses were prudent and reasonable, and costs incurred were necessary to accomplish the project's objectives;
- ElectraStor contributed and spent its local share of the project funding, as required;
- ElectraStor achieved the project objectives as outlined in the cooperative agreement and subsequent amendments; and

- FTA and PVTA exercised appropriate oversight over the project.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards as prescribed by the Comptroller General of the United States and performed such tests as we considered necessary to detect fraud, waste, and abuse. Details of our objectives, scope, and methodology are in Exhibit A.

BACKGROUND ON COOPERATIVE AGREEMENT WITH PVTA

After Congress approved initial funding for the electric bus project in October 1999, FTA signed a cooperative agreement with PVTA in August 2000 to design and manufacture one 22-foot battery-powered electric propulsion transit bus. Before August 2000, PVTA had entered into an agreement with several parties, including ElectraStor, to prepare an electric bus proposal for FTA, whereby ElectraStor would actually develop and manufacture the electric bus. The project requirements were amended in July 2001, reducing the project's scope to focus on the nickel-hydrogen battery to be used in a transit bus.

Federal funding allocated for the electric bus project totaled about \$4.25 million between 1999 and 2005. The total included \$3.45 million in earmarked funds and \$800,000 in FTA discretionary funds. As shown in the table below, over \$4 million of the Federal funds were paid to ElectraStor and the remaining \$200,000 was paid to PVTA.

Table. Federal Funding for Electric Bus Project

Description	Amount
Earmarked Funds	\$3.45 million
Discretionary Funds	\$800,000
Total Federal Funds Obligated	\$4.25 million
Costs Claimed by ElectraStor	\$9 million
50 percent Requested for Reimbursement	\$4.43 million
Funds Paid to ElectraStor	\$4.04 million
Funds Retained by PVTA	\$200,000
Total Paid for Project by FTA	\$4.25 million

Source: OIG Analysis of FTA data

FTA's cooperative agreement with PVRTA set forth requirements for implementing the project. As the table above also shows, the cooperative agreement stipulated that FTA would pay 50 percent of the project costs and the recipients would pay 50 percent of the project costs from non-Federal sources (local share). Additionally, the agreement required grant recipients, including third-party recipients such as ElectraStor, to comply with applicable Federal regulations regarding supporting documentation, eligible project costs, and the 50-percent local share requirements.

The cooperative agreement also specified oversight responsibilities for FTA and PVRTA. For example, the FTA project manager was to verify that milestones were achieved before approving claims for reimbursements. PVRTA was to award and manage third-party contracts; conduct project status reviews; prepare progress, technical, and financial reports; and notify FTA of any unexpected problems. It was also to review the operational requirements for the battery to ensure that it would meet PVRTA needs. For these oversight activities, PVRTA received 5 percent of the Federal project funds. In addition to responsibilities in the cooperative agreement, FTA's regional office in Cambridge, Massachusetts, was to conduct annual risk assessments of all project recipients.

During the course of the project, ElectraStor submitted 31 claims for reimbursement through PVRTA to FTA. The claims totaled approximately \$9 million in project costs, for which ElectraStor requested a 50-percent reimbursement, or approximately \$4.43 million. Of the \$4.43 million, FTA paid \$4.25 million in Federal funds to PVRTA, which then reimbursed ElectraStor \$4.04 million between August 2000 and May 2005. PVRTA retained the remaining \$200,000¹ as compensation for its oversight activities. FTA halted further payments when concerns about the project were raised.

RESULTS IN BRIEF

ElectraStor received \$4.04 million in Federal reimbursements for ineligible claims. The claims were determined to be ineligible for reimbursement based on the incomplete and unreliable records ElectraStor made available to the audit team. Specifically, the \$9 million in project costs listed on the 31 reimbursement claims to FTA were not traceable to the documentation ElectraStor provided to the audit team. Overall, the records provided were not sufficient to determine whether the costs cited were accurate and eligible for Federal reimbursement, or whether ElectraStor had provided its required 50 percent share of the project costs. We found that:

¹ The total reimbursed (\$4.04 million to ElectraStor and \$200,000 to PVRTA) add up to \$4.25 million due to rounding.

- records ElectraStor provided did not include bank statements for 26 of the 67 months reviewed (August 2000 through February 2006). Statements that were provided were missing pages or were otherwise incomplete. General ledger records were made available only for year 2000, the first year of the cooperative agreement.
- \$284,000 in payments to consultants was not supported by documentation that was required to show what was done to earn the payment, or whether the work was related to battery research.
- \$115,000 for lobbying expenses was cited in ElectraStor's records as a reimbursement expense even though lobbying is not eligible for Federal reimbursement.

Moreover, although FTA reimbursed \$4.04 million in Federal funds to ElectraStor through PVTA, ElectraStor did not provide evidence of any real progress in its research to develop a nickel-hydrogen battery for use in a transit bus. For example, during a visit to ElectraStor facilities, we observed a prototype battery that ElectraStor officials said was much too large to fit in a bus and could hold an electrical charge for only a few seconds.

Further, our review showed that neither FTA nor PVTA adequately carried out oversight activities, such as the review of milestones achieved and claims for reimbursement that are specified in the cooperative agreement. Although PVTA still retained over \$200,000 for its oversight role, the unsubstantiated claims were not adequately reviewed before FTA reimbursed PVTA \$4.25 million in Federal funds. To its credit, however, since the time that we began this audit, FTA has taken positive steps to address weaknesses in its oversight of grants and cooperative agreements.

Based on our findings of insufficient documentation and oversight to support claims for reimbursement, FTA has grounds to recover the entire \$4.25 million in Federal funds it paid for this project, which includes the \$4.04 million paid to ElectraStor and \$200,000 retained by PVTA.

To attain a full explanation of the insufficient documentation to substantiate the claims, further information may be required. Consequently, nothing in this report should be deemed to relieve any individual or entity of criminal liability. A complete list of our recommendations is on page 10 of this report.

In its June 3, 2008, comments on our draft report, FTA concurred with our four recommendations. FTA's comments and our response are discussed fully on page 11 of this report. FTA's complete comments are in the appendix to this report.

FINDINGS

ElectraStor Received Federal Reimbursement of \$4.04 Million, but Did Not Provide Complete or Reliable Records Supporting Its Claims

Although ElectraStor was reimbursed with \$4.04 million in Federal funds, ElectraStor did not provide adequate records to the audit team to show how the money had been spent nor demonstrate that only eligible costs had been incurred to develop a bus battery. The Office of Management and Budget (OMB) and FTA regulations referenced in the cooperative agreement require recipients of Federal funds to maintain documentation to support eligible project costs, including costs for consultants and meals. The regulations also require that all costs charged to a federally reimbursable project be supported by properly executed payrolls, time records, invoices, contracts, or vouchers that are “intact and readily accessible.” The 31 claims ElectraStor submitted for reimbursement listed \$9 million in project costs. However, ElectraStor neither provided documentation to the audit team showing that the cited costs were eligible for Federal reimbursement, nor adequately demonstrated that ElectraStor contributed and spent its 50-percent matching share of the project costs.

When we requested that ElectraStor provide supporting documentation for the \$9 million in claimed expenditures, ElectraStor’s chief scientist provided us access to two file cabinets filled with files that did not support the claims ElectraStor submitted to FTA for reimbursement. The files were a mixture of bills and invoices from vendors that loosely correlated to the dates that the claims were submitted to FTA. They were not comprehensive records. Specifically:

- There were no bank statements covering 26 months of the 67-month period under review and bank statements for another 10 months were missing pages or were otherwise incomplete.
- The check register ElectraStor provided contained no information dated after June 2004 and copies of checks provided were dated before May 2002.
- General ledger records were made available only for the year 2000, the first year of the cooperative agreement.

ElectraStor’s chief scientist acknowledged that the files did not support the claims submitted to FTA for reimbursement. Additionally, no one on ElectraStor’s staff showed us how the claims ElectraStor submitted for reimbursements were prepared.

Our analysis of available documentation did not find sufficient evidence that costs incurred for items such as consultants were eligible for reimbursement under Federal regulations. Also, we identified costs that, by definition, cannot be reimbursed. The records the audit team was able to review showed that ElectraStor made payments of more than \$284,000 to five consultants but none of the documentation ElectraStor provided showed what was done to earn the payment, when the work was done, or any other evidence that the consultants were supporting the development of the nickel-hydrogen battery. Further, the records we reviewed showed expenses of at least \$17,000 for meals in the first year of the grant. ElectraStor provided no explanation or supporting documentation to link the meals to battery research. Finally, the records showed more than \$115,000 for lobbying costs, a category specifically prohibited by OMB Circular A-87, and the documentation did not support claims from ElectraStor officials that these expenses were paid out of their own funds.

ElectraStor's financial records were also insufficient to document that ElectraStor contributed and spent its 50-percent matching share of the project costs, a requirement for receiving Federal reimbursement. According to Federal regulations, a recipient must obtain its local matching share from sources other than the Federal Government. Accordingly, ElectraStor's local matching share for the \$9 million in claims would total approximately \$4.5 million. However, records made available for the audit team's review did not support ElectraStor's claim that it provided local matching funds to the project. For example:

- ElectraStor claimed five high interest short-term loans totaling approximately \$2.8 million as part of its local matching share, but the records it provided were so scattered that we could not determine whether any of the loan proceeds were actually used for the project.
- ElectraStor claimed another \$2.5 million for an in-kind contribution for a debt owed to an engineering company for work performed during the project. However, the records provided showed that ElectraStor identified these costs as part of its local matching share but also claimed them as an expense for costs associated with project work. Because FTA reimbursed ElectraStor, the costs were not "contributed."

In summary, based on the insufficient documentation and support provided to the audit team for the claimed project costs and expenditures, we question the entire \$4.04 million that ElectraStor received in Federal reimbursements.

ElectraStor Did Not Provide Support That Progress Was Achieved With the \$4.04 Million in Federal Funds

ElectraStor did not develop the proto-type electric bus envisioned in the cooperative agreement or meet the reduced goal to focus only on the bus battery, despite claiming and receiving \$4.04 million in Federal reimbursement. When the audit team visited ElectraStor's facilities, we did not observe a functioning battery and we found no support for claims that research benefits from ElectraStor's work were demonstrated through existing patents.

The original scope of the electric bus program was reduced to focus on the research, development, and demonstration of a nickel-hydrogen battery to be used in a transit bus. The August 2000 cooperative agreement between FTA and PVTA was for ElectraStor, as PVTA's subcontractor, to design and produce a demonstration model of a 22-foot battery-powered electric propulsion transit bus. In July 2001, all participants agreed to reduce the project's scope.

Our field work and other research did not provide evidence of any real progress in ElectraStor's research to accomplish this reduced scope. For example:

- In spring 2006, during a visit to ElectraStor facilities, we observed a prototype battery that ElectraStor officials said was much too large to fit in a bus and could hold an electrical charge for only a few seconds.
- In response to our subsequent request for research results, ElectraStor officials provided information about licensed patents and pending patent applications purportedly developed as part of the battery project. However, when we queried the U.S. Patent Office database, we found that the listed patents were held in the name of other companies—no patents were registered to ElectraStor.

In responding to the draft report, FTA noted that ElectraStor may not have had to produce a functioning battery, but under the agreement, ElectraStor did have to exercise its best efforts to produce a battery. Additionally, FTA noted that the FTA project manager in the Office of Research, Demonstration, and Innovation who was responsible for the project had indicated some accomplishments under the agreement. In our opinion, the accomplishments indicated by the FTA project manager, such as the unsupported claim that ElectraStor developed patents, are not reliable. Since our field work, the project manager had been removed from his responsibilities and has retired.

To obtain more reliable information for assessing ElectraStor's research, FTA should ensure that PVTA issues a final report on the accomplishments, if any,

resulting from the agreement, as required in the August 2000 cooperative agreement.

Neither FTA nor PVTA Adequately Carried Out the Oversight Activities Specified in the Cooperative Agreement

Although a full explanation regarding the insufficient support for project costs and benefits may require further information, neither FTA nor PVTA performed the oversight activities specified in the cooperative agreement. The FTA project manager in the Office of Research, Demonstration, and Innovation neither maintained the necessary contact with PVTA and ElectraStor nor adequately reviewed the milestones achieved and claims for reimbursement. In addition, PVTA performed no oversight of the project but merely forwarded claims for reimbursement from ElectraStor to FTA and reimbursement payments from FTA to ElectraStor. Because of their lack of oversight, neither FTA nor PVTA were assured that Federal funds were spent on eligible activities; that ElectraStor contributed and spent its 50-percent matching share of the project costs, as required; and that adequate progress was made on the battery research.

Under the August 2000 cooperative agreement, FTA was required to oversee and actively participate in the project and to verify the achievement of each specific payable milestone prior to approval of reimbursement for the milestone. PVTA was required to oversee ElectraStor activities and to provide reports to FTA on all major activities and potential problem areas, as well as a final report on the accomplishments resulting from the cooperative agreement.

We found that neither FTA nor PVTA performed the required oversight. Specifically:

- FTA's project manager in the Office of Research, Demonstration, and Innovation signed and approved claims for reimbursements, but did not enforce the requirement that ElectraStor submit in-depth quarterly progress reports that would verify the achievements of each specific payable milestone. ElectraStor provided only 6 of 22 quarterly progress reports required by FTA circular 6100 chapter 3 section 5(b) to PVTA from 2000 through the end of 2005.
- FTA's regional office did not increase its oversight over PVTA to reflect the changing level of risk for PVTA shown in its annual risk assessments. Additionally, neither single audits of PVTA's finances (conducted by an independent certified public accounting firm) nor

triennial reviews² of a sample of PVTA's projects (conducted by the regional office) discovered the weaknesses in PVTA's oversight of the activities at ElectraStor.

- PVTA officials told us, contrary to the written text of the cooperative agreement, that PVTA had no oversight responsibilities; no expertise in batteries; and no role in carrying out the cooperative agreement, other than forwarding ElectraStor's claims for reimbursement to FTA and forwarding FTA's reimbursement payments back to ElectraStor. Yet, FTA reimbursed PVTA over \$200,000 for forwarding the claims for reimbursement from ElectraStor to FTA.

Because of the inadequate oversight, neither FTA nor PVTA took appropriate action to ensure the Federal requirements were being met and adequate progress was being made on the electric bus project before \$4.04 million in Federal funds was paid to ElectraStor. In addition to seeking recovery of funds paid to ElectraStor, FTA has grounds to recover the \$200,000 paid to PVTA for its lack of oversight activities. One option for a Federal agency to seek recovery of a debt is to issue a demand for payment under the Federal Claims Collection Standards (31 CFR 901.2). An entity receiving a formal demand for reimbursement can provide additional evidence to support costs claimed. Regulations on collection activities are issued by the Secretary of the Treasury and the Attorney General of the United States.

FTA Recently Took Steps To Improve Its Oversight

Since the time that we began this audit, FTA has taken positive steps to address weaknesses in agency oversight of grants and cooperative agreements. For example, in August 2006, FTA issued FTA Order 6200.1, establishing policies and standards for the management of all FTA National Research and Technology Program projects and funds.³

In addition, FTA suspended all reimbursements to PVTA for projects associated with ElectraStor, and in fiscal year (FY) 2007 FTA developed and carried out an Action Plan for Improving Oversight Within the National Research Programs (Action Plan). According to FTA, the agency has:

- reviewed the agreements assigned to the former FTA project manager who was responsible for PVTA, and based on this review retained a

² The triennial review, mandated by Congress in 1982, is used by FTA as a management tool to exam grantee performance and adherence to current FTA requirements and policies. The review occurs once every 3 years.

³ FTA Order 6200.1, "Federal Transit Administration's Project Management Guidelines for Research Projects," August 14, 2006.

private consulting firm to undertake five financial management oversight reviews to review the recipients' internal controls;

- developed a risk assessment approach to review research recipients to determine the level of appropriate oversight;
- provided training for FTA staff on cooperative agreement management;
- held a 1-day workshop for research recipients on their grant management responsibilities; and
- contracted with a private consulting firm to assess FTA's oversight processes, an assessment that included agreements such as the cooperative agreement with PVRTA. Based on the contractor's recommendations, in FY 2008 FTA plans to establish an internal working group to implement the recommendations.

RECOMMENDATIONS

We recommend that the Federal Transit Administrator:

1. Disallow all future costs claimed by ElectraStor. Develop an action plan, in coordination with the OIG, to seek recovery of the \$4.25 million in Federal funds paid for the project.
2. Establish specific milestones and reporting requirements for the internal working group that is being set up to implement recommended improvements in FTA's oversight processes to ensure that all procedures included in the August 2006 FTA Order 6200.1 and the Action Plan to improve oversight over FTA research grants and cooperative agreements have been implemented and are functioning as intended.
3. Review other research grants or cooperative agreements for which the FTA project manager assigned to ElectraStor was responsible, to determine whether similar problems exist in other research agreements awarded by FTA.
4. Obtain from PVRTA a final report disclosing the results of the research, as required in the cooperative agreement.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FTA a draft copy of this report on April 4, 2008. On April 16, 2008, FTA provided us with suggested changes and comments on the project's technical progress. We incorporated FTA's suggested changes and comments, as appropriate. On June 3, 2008, FTA provided its written comments on the report. In its comments, included as an appendix to the report, FTA concurred with our recommendations and agreed to take the following actions.

- **Recommendation 1.** FTA stated that it will develop an action plan, in coordination with the OIG, to seek recovery of the \$4.25 million in Federal funds by August 31, 2008.
- **Recommendation 2.** FTA stated that it has established a working group to implement recommended improvements in FTA's oversight processes and will develop milestones for program implementation by September 1, 2008.
- **Recommendation 3.** FTA stated that it has completed five Financial Management Reviews, representing five grantees and nine projects assigned to the FTA project manager responsible for ElectraStor projects. The reviews will be provided to the OIG by June 30, 2008. Additionally, FTA stated that the lessons learned from these reviews will be used as part of recommendation 2.
- **Recommendation 4.** FTA will request PVTA to provide a final report disclosing the results of the research by June 30, 2008.

ACTIONS REQUIRED

We consider FTA's planned actions reasonable. We will continue to monitor the status of FTA's implementation of our recommendations, in accordance with Department of Transportation Order 8000.1C, until the planned actions are completed.

We appreciate the courtesies and cooperation of FTA representatives during this audit. If you have any questions concerning the report, please call me at (202) 366-5630.

EXHIBIT A. OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of this audit were to determine whether:

- ElectraStor met Federal requirements to demonstrate that funds were spent on activities eligible for FTA reimbursement, expenses were prudent and reasonable, and costs incurred were necessary to accomplish the project's objectives;
- ElectraStor contributed and spent its local share of the project funding as required;
- ElectraStor achieved the project objectives as outlined in the cooperative agreement and subsequent amendments; and
- FTA and PVRTA exercised appropriate oversight over the project.

To accomplish these objectives, we:

- interviewed FTA Research and Development staff to determine what oversight activities were performed.
- interviewed PVRTA officials, the Chief Finance Officer, and the Director of Procurement and Transit, to assess PVRTA's role in grant and cooperative agreement administration and oversight.
- conducted several site visits at ElectraStor's facilities in Pittsfield Massachusetts, and met with the ElectraStor CEO and chief scientist—to discuss the project's scope of work, activities conducted, and the internal controls over the use and accounting of project funds. We also discussed the means by which ElectraStor obtained and maintained its required local share of funding for the project.
- reviewed and analyzed available documentation maintained at ElectraStor to support invoices submitted to PVRTA for FTA reimbursement.
- relied on the limited records and other documents available to develop our overall observations and information on individual expenses.

We conducted this performance audit from April 2006 through January 2008, in accordance with Generally Accepted Government Auditing Standards as prescribed by the Comptroller General of the United States.

EXHIBIT B. MAJOR CONTRIBUTORS TO THIS REPORT

<u>Name</u>	<u>Title</u>
Tom Yatsco	Program Director
James Corcoran	Program Director
David Pouliott	Project Manager
Mary Thomas	Project Manager
Laurence Burke	Senior Analyst
Kathleen Conway	Analyst
David Deutsch	Analyst
Harriet E. Lambert	Writer-Editor

APPENDIX. MANAGEMENT COMMENTS



Memorandum

Subject: Response to Audit of Federal Transit Administration's Oversight of Pioneer Valley Transit Authority electric Bus Cooperative Agreement (06M3005M001) Date: JUN - 3 2008

From: *[Signature]* Robert J. Tuccillo Reply to: R.G. Owens
 Associate Administrator for Attn. of: X61689
 Budget and Policy/CFO

To: Joseph W. Come
 Assistant Inspector General for
 Highway and Transit Audits

The Federal Transit Administration is providing our proposed corrective actions to address the four recommendations in the Office of Inspector General (OIG) Audit of FTA's Oversight of Pioneer Valley Transit Authority (PVRTA) Electric Bus Cooperative Agreement, forwarded to our agency on April 4, 2008.

Proposed corrective actions on recommendations 1-4:

1. Concur. FTA will develop an action plan by August 31, 2008, in coordination with the OIG, to seek recovery of the \$4.25 million in Federal funds paid for the project.
2. Concur. The FTA working group has been established and will develop milestones for program implementation by September 1, 2008.
3. Concur. FTA has undertaken this recommendation. The five Financial Management Reviews representing five grantees and nine of the Project Managers' projects have been completed. The reviews will be provided to the OIG by June 30, 2008. Findings within the reviews did not rise to the level of those for PVRTA. Lessons learned from the reviews will be used as part of recommendation number two.
4. Concur. FTA will request PVRTA to provide a final report disclosing the results of the research by June 30, 2008.

We appreciate your assistance and guidance regarding our proposed response to the audit. If you have any questions regarding our response, please contact Bob Owens, our Audit Liaison at x61689.