

SPONSORED RESEARCH AGREEMENT NO. UTA15-001169

This Sponsored Research Agreement (“Agreement”) is made between The University of Texas at Austin, on behalf of its Center for Electromechanics, with offices at 10100 Burnet Road, Building 133, Austin, Texas, 78758-4497 (“University”), an institution of higher education created by the Constitution and law of the State of Texas under The University of Texas System (“System”) and the City of Everett, a Washington municipal corporation with offices at 3225 Cedar St., Everett, Washington, 98201 (“Sponsor”).

RECITALS

A. Sponsor desires that University perform certain research work hereinafter described and is willing to advance funds to sponsor such research;

B. Sponsor desires to obtain certain rights to patents and technology developed during the course of such research with a view to profitable commercialization of such patents and technology for the Sponsor’s benefit; and

C. University is willing to perform such research and to grant rights to such patents and technology;

NOW THEREFORE, in consideration of the mutual covenants and promises herein contained, the University and Sponsor agree as follows:

1. EFFECTIVE DATE

This Agreement shall be effective as of December 8th, 2015 (the “Effective Date”).

2. RESEARCH PROGRAM

2.1 University will use reasonable efforts to conduct the Research Program described in Attachment A (“Research Program”), and will furnish the facilities necessary to carry out said Research Program. The Research Program will be under the direction of Michael Lewis (“Principal Investigator”), or (his or her) successor as mutually agreed to by the parties and will be conducted by the Principal Investigator at the University.

2.2 The Research Program shall be performed during the period from the Effective Date through and including March 7, 2016 Sponsor shall have the option of extending the Research Program under mutually agreeable support terms.

2.3 Sponsor understands that University's primary mission is education and advancement of knowledge, and consequently the Research Program will be designed to carry out that mission. The manner of performance of the Research Program shall be determined solely by the Principal Investigator. University does not guarantee specific results, and the Research Program will be conducted only on a reasonable efforts basis.

2.4 University will keep accurate financial and scientific records relating to the Research Program and will make such records available to Sponsor or its authorized representative throughout the Term of the Agreement during normal business hours upon reasonable notice.

2.5 Sponsor understands that University may be involved in similar research on behalf of itself and others. University shall be free to continue such research provided that it is conducted separately from the Research Program hereinafter defined, and Sponsor shall not gain any rights via this Agreement to such other research.

2.6 University does not guarantee that any patent rights will result from the Research Program, that the scope of any patent rights obtained will cover Sponsor's commercial interests, or that any such patent rights will be free of dominance by other patents, including those based upon inventions made by other inventors in The University of Texas System independent of the Research Program.

3. COMPENSATION

3.1 As consideration for the performance by University of its obligations under this Agreement, Sponsor will pay the University an amount equal to its expenditures and reasonable overhead in conducting the Research Program subject to a maximum expenditure limitation of \$19,521.

Payments should be made within 30 days of the receipt of an invoice and payable to The University of Texas at Austin, **make reference to the Principal Investigator, Agreement number and title of the Research Program funded under this Agreement**, and submitted to the following address:

The University of Texas at Austin
Office of Accounting
P.O. Box 7159
Austin, Texas 78713-7159

3.2 University shall maintain all Research Program funds in a separate account and shall expend such funds for wages, supplies, equipment, travel, food charges for meetings/conferences with sponsor and other operational expenses in connection with the Research Program. It is understood that funds of the Research Program which are not used in a particular quarter may be used in subsequent quarters, and that the Principal Investigator may transfer funds within the budget as needed without Sponsor's approval, as long as such transfers do not effect a change in the scope of work of the Research Program. It is also understood that subject to Section 11.4, uncommitted and unexpended funds remaining at the termination of the Agreement shall be returned to Sponsor; provided, however, that the parties agree that in order to minimize administrative close-out expenses, if funds remaining upon termination or expiration of the Agreement equal \$250.00 or less, such funds shall be retained by the University and disposed of in accordance with University policy.

3.3 University shall retain title to all equipment purchased and/or fabricated by it with funds provided by Sponsor under this Agreement.

4. CONSULTATION AND REPORTS

4.1 Sponsor's designated representative ("Designated Representative") for consultation and communications with the Principal Investigator shall be Tom Hingson or such other person as Sponsor may from time to time designate in writing to University and the Principal Investigator.

4.2 During the term of the Agreement, Sponsor's representatives may consult informally with University's representatives regarding the project, both personally and by telephone. Access to work carried on in University laboratories in the course of these investigations shall be entirely under the control of University personnel but shall be made available on a reasonable basis.

4.3 The Principal Investigator will make oral report(s) as requested by Sponsor's Designated Representative. The University's Office of Accounting shall submit a comprehensive final report within one hundred twenty (120) days of termination of the Agreement which shall contain, but which need not be limited to, a final invoice, if not previously submitted, for expenses of the Research Program for the prior year, which reflects cumulative expenses incurred during the term of the Agreement (SPAA).

5. PUBLICITY

Subject to Section 15 below, neither party shall make reference to the other in a press release or any other written statement in connection with work performed under this Agreement, if it is intended for use in the

public media, except as required by the Texas Public Information Act or other law or regulation and except as consistent with the laws, ordinances and procedures of the City of Everett. This Agreement will require approval by the Sponsor's City Council in an open public meeting. This Agreement in its entirety may be posted for public viewing on the Sponsor's website, along with other summaries and information contained in the City Council public agenda. University, however, shall have the right to acknowledge Sponsor's support of the investigations under this Agreement in scientific or academic publications and other scientific or academic communications, without Sponsor's prior approval. In any statements, the scope and nature of participation shall be described accurately and appropriately.

6. PUBLICATION AND ACADEMIC RIGHTS

6.1 University and the Principal Investigator have the right to publish or otherwise publicly disclose information gained in the course of this Agreement, except for Sponsor's confidential information ("Confidential Information") furnished to University pursuant to the provisions of Article 7. In order to avoid loss of patent rights as a result of premature public disclosure of patentable information, University will submit any prepublication materials to Sponsor for review and comment at least sixty (60) days prior to planned submission for publication. Sponsor shall notify University within thirty (30) days of receipt of such materials whether it desires University to file patent applications on any inventions contained in the materials; and, if University agrees to do so, University will proceed to file the patent application(s) in due course. University shall have final authority to determine the scope and content of any publications.

6.2 It is understood that the University investigators may discuss the research being performed under this Agreement with other investigators but shall not reveal information which is Sponsor's Confidential Information under Article 7. In the event any joint inventions result, University shall grant to Sponsor the rights outlined in Article 8 to this Agreement, to the extent these are not in conflict with obligations to another party as a result of the involvement of the other investigator(s). In this latter case, University shall, in good faith, exercise reasonable efforts to enable Sponsor to obtain rights to the joint invention.

7. CONFIDENTIAL INFORMATION

7.1 The Parties may wish, from time to time, in connection with work contemplated under this Agreement, to disclose Confidential Information to each other. Subject to Section 15, each party will use reasonable efforts to prevent the disclosure of any of the other party's Confidential Information to third parties for a period of three (3) years from expiration or termination of this Agreement, provided that the recipient party's obligation hereunder shall not apply to Information that:

- (1) is not disclosed in writing and marked with an appropriate confidentiality legend or, if disclosed orally or visually, is not identified as confidential at the time of oral or visual disclosure and subsequently reduced to writing and labeled with an appropriate confidentiality legend within thirty (30) days of disclosure;
- (2) is already in the recipient party's possession at the time of disclosure thereof;
- (3) is or later becomes part of the public domain through no fault of the recipient party;
- (4) is received from a third party having no obligations of confidentiality to the disclosing party;
- (5) is independently developed by the recipient party; or
- (6) is required by law or regulation to be disclosed.

7.2 In the event that information is required to be disclosed pursuant to subsection (6), the party required to make disclosure shall notify the other to allow that party to assert whatever exclusions or exemptions may be available to it under such law or regulation.

7.3 This Section 7 is subject in its entirety to Section 15 below.

8. PATENTS, COPYRIGHTS AND TECHNOLOGY RIGHTS

8.1 Title to all inventions or discoveries made solely by University resulting from the research performed hereunder shall reside in University, title to all inventions or discoveries made solely by Sponsor shall reside in Sponsor, and title to all inventions and discoveries made jointly by Sponsor and University shall reside jointly in Sponsor and University. University agrees to grant to Sponsor an option to negotiate, a royalty-bearing license, to make, use, or sell under any invention or discovery made and conceived during the term of this Agreement directly resulting from the performance of research hereunder to the extent that University is legally able to do so. University reserves for itself a royalty-free, irrevocable license to make and use such University inventions or discoveries for its own research and educational purposes. If such invention or discovery is made resulting from the research, the Principal Investigator shall submit an invention disclosure (<http://www.otc.utexas.edu/InventorForms.jsp>) to University's Office of Technology Commercialization ("OTC"). The OTC will then forward the invention disclosure to Sponsor. Sponsor shall then have thirty (30) days from receipt of such disclosure of any invention or discovery to notify University of its

desire to enter into such a license agreement, and a license agreement shall be negotiated in good faith within a period not to exceed one hundred twenty days (120) from Sponsor's notification to University of its desire to enter into a license agreement, or such period of time as the parties shall mutually agree. In the event that Sponsor and University fail to enter into an agreement during that period of time, then the rights to such inventions or discoveries shall be disposed of in accordance with University policies, with no obligation to Sponsor. Sponsor agrees to pay a reasonable royalty for the use of the invention or discovery to be negotiated in good faith. Until any such invention or discovery has been presented as set forth above, University shall not offer rights to that invention or discovery to any third party.

8.2 In the event Sponsor elects to exercise its option as to any invention or discovery, in accordance with the procedures detailed above, it shall be obligated to pay all patent expenses for such invention or discovery. This shall include, but not be limited to, the cost of any prior activities investigating patentability of said invention or discovery before exercise of the option, such as search and opinion for patentability, that may have been performed by University pursuant to its arrival at a judgment of commercially exploitable status. It is contemplated that, in the majority of instances, Sponsor will be asked to determine whether it will exercise its option prior to the filing of the first patent application.

9. LIABILITY

9.1 Sponsor agrees to indemnify and hold harmless System, University, their Regents, officers, agents and employees from any liability, loss or damage they may suffer as a result of claims, demands, costs or judgments against them arising out of the use by Sponsor of the results obtained from the activities performed by University under this Agreement; provided, however, that the following is excluded from Sponsor's obligation to indemnify and hold harmless:

- (a) the negligent failure of University to substantially comply with any applicable FDA or other governmental requirements; or
- (b) the negligence or willful malfeasance of any Regent, officer, agent or employee of University or System.

9.2 Both parties agree that upon receipt of a notice of claim or action arising out of the activities to be carried out pursuant to the project described in Attachment A, the party receiving such notice will notify the other party promptly. Sponsor agrees, at its own expense, to provide attorneys to defend against any actions brought or filed against University, System, their Regents, officers, agents and/or employees with respect to the subject of the indemnity contained herein, whether such claims or actions

are rightfully brought or filed; and subject to the statutory duty of the Texas Attorney General, University agrees to cooperate with Sponsor in the defense of such claim or action.

10. INDEPENDENT CONTRACTOR

For the purposes of this Agreement and all services to be provided hereunder, the parties shall be, and shall be deemed to be, independent contractors and not agents or employees of the other party. Neither party shall have authority to make any statements, representations or commitments of any kind, or to take any action which shall be binding on the other party, except as may be expressly provided for herein or authorized in writing.

11. TERM AND TERMINATION

11.1 This Agreement shall commence on the Effective Date and extend until the end of the Research Program as described hereinabove, unless sooner terminated in accordance with the provisions of this Article 11.

11.2 This Agreement may be terminated by the written agreement of both parties. Either party at any time may terminate this Agreement effective on 30 days prior written notice to the other party.

11.3 In the event that either party shall be in default of its material obligations under this Agreement and shall fail to remedy such default within sixty (60) days after receipt of written notice thereof, this Agreement may be terminated at the option of the party not in default upon expiration of the sixty (60) day period.

11.4 This Agreement shall terminate automatically and immediately if Sponsor becomes bankrupt or insolvent and/or enters receivership or trusteeship, whether by voluntary act of Sponsor or otherwise.

11.5 Termination or cancellation of this Agreement shall not affect the rights and obligations of the parties accrued prior to termination. Upon termination, Sponsor shall, subject to the maximum in Section 3.1 above, pay University for all reasonable expenses incurred or committed to be expended as of the effective termination date, including salaries for appointees for the remainder of their appointment.

11.6 Any provisions of this Agreement which by their nature extend beyond termination shall survive such termination.

12. ATTACHMENTS

Attachment A, "Statement of Work", is incorporated and made a part of this Agreement for all purposes.

13. USE OF HUMAN SUBJECTS (not applicable)

14. GENERAL

14.1 This Agreement may not be assigned by either party without the prior written consent of the other party; provided, however, that subject to the approval of University, which may not be unreasonably withheld, Sponsor may assign this Agreement to any purchaser or transferee of all or substantially all of Sponsor's assets or stock upon prior written notice to University; provided, however, that such assignee shall have expressly assumed all of the obligations and liabilities of Sponsor under this Agreement, and provided, further that, University may assign its right to receive payments hereunder.

14.2 This Agreement constitutes the entire and only agreement between the parties relating to the Research Program, and all prior negotiations, representations, agreements and understandings are superseded hereby. No agreements altering or supplementing the terms hereof may be made except by means of a written document signed by the duly authorized representatives of the parties. Terms and conditions which may be set forth (front, reverse, attached or incorporated) in any purchase order issued by Sponsor in connection with this Agreement shall not apply, except for informational billing purposes; i.e., reference to purchase order number, address for submission of invoices, or other invoicing items of a similar informational nature.

14.3 Any notice required by this Agreement by Articles 8, 9 or 11 shall be given prepaid, first class, certified mail, return receipt requested, addressed in the case of University to:

Office of the Vice President for Research
P.O. Box 7996
Peter Flawn Academic Center (FAC) Building, Suite 426
Austin, TX 78712-1111
Telephone: 512-471-2877
Fax: 512-471-2827

or in the case of the Sponsor to:

Everett Transit
3225 Cedar Street
Everett, WA 98201

Attn: Tom Hingson
Phone: 425-257-8939
Fax: 425-257-8945

or at such other addresses as may be given from time to time in accordance with the terms of this notice provision.

Notices and other communications regarding the day-to-day administration and operations of this Agreement shall be mailed (or otherwise delivered), addressed in the case of University to:

The University of Texas at Austin
Office of Sponsored Projects
North Office Building-A, Room 5.300
101 E. 27th Street, Stop A9000
Austin, Texas 78713-7726
Attention: David K. Hawkins
Associate Director
Phone: (512) 471-6424
FAX: (512) 471-6564

with a copy to:

The University of Texas at Austin
Center for Electromechanics
10100 Burnet Road, Bldg 133
Attn: Steve Brahm; s.brahm@cem.utexas.edu
Austin, Texas 78758-4497
Phone: (512) 232-1624
FAX: (512) 471-0781

or in the case of Sponsor to:

Everett Transit
3225 Cedar Street
Everett, WA 98201
Attn: Tom Hingson
Phone: 425-257-8939
Fax: 425-257-8945

14.4 Except as provided in Section 15 below, this Agreement shall be governed by, construed, and enforced in accordance with the internal laws of the State of Texas.

14.5 Sponsor acknowledges that this Agreement and the performance thereof are subject to compliance with any and all applicable United States laws, regulations, or orders, including those that may relate to the export of technical data, and Sponsor agrees to comply with all such laws, regulations and orders, including, if applicable, all requirements of the International Traffic in Arms Regulations and/or the Export Administration Act, as may be amended. Sponsor further agrees that if the export laws are applicable, it will not disclose or re-export any technical data received under this Agreement to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless Sponsor has obtained prior written authorization from the U.S. Office of Export Control or other authority responsible for such matters.

15. WASHINGTON STATE OPEN GOVERNMENT LAWS

University acknowledges that Sponsor is subject to the Washington Public Records Act, chapter 42.56 RCW and other Washington statutes related to open government (collectively, the "Open Government Laws"). Subject to limited exceptions, every document or record (paper, electronic or otherwise) used by the Sponsor is subject to public disclosure under the Open Government Laws. Notwithstanding anything to the contrary in this Agreement, the Sponsor has no liability whatsoever to the University for the disclosure of any document or record when that disclosure is consistent with the Open Government Laws or with an order applying the Open Government Laws entered by the Snohomish County Superior Court or a Washington appellate court. Any matter regarding the Open Government Laws shall be governed by, construed, and enforced in accordance with the internal laws of the State of Washington.

IN WITNESS WHEREOF, the parties have caused this Agreement No. UTA15 - ~~001167~~ to be executed by their duly authorized representatives.

THE UNIVERSITY OF TEXAS AT AUSTIN

SPONSOR

By: David Hawkins
David Hawkins

By: Ray Stephanson
Ray Stephanson
Mayor

Title: Associate Director

Date: 11-23-2015

Date: 12.8.2015

Attest:

By: Sharon Fuller
Sharon Fuller
City Clerk

Date: 11-23-2015

Approved as to form only:

By: James D. Iles
James D. Iles
City Attorney

Date: 11/17/15

Scope of Work

Task 1 – Vehicle Performance Assessment

CEM will work closely with project partners and the fleet managers to understand and identify electric bus platforms of interest. CEM will develop dynamic simulation models of the vehicle powertrain to assess energy consumption and efficiency. The goal of this task is to understand the vehicle's energy consumption and ability to make the route and provide the services required by the fleet.

The following subtasks are envisioned for completing Task 1.

Subtask 1.1 – Obtain Vehicle (and Charger) Specifications

CEM will work closely with the Everett Transit fleet manager to obtain vehicle specifications for up to three electric bus models and a fossil fuel counterpart. These specifications will also include the vehicle charger for the electric buses. The fleet manager will be responsible for ensuring CEM obtains all data necessary from electric bus vendors to provide modeling services. This data includes, but is not limited to, engine/motor torque-speed curves, fuel/energy storage specifications, vehicle drivetrain ratios and efficiencies, and vehicle physical specifications, such as frontal area, tires, and weight ratings. If this data cannot be provided by Everett Transit, CEM will use publicly available information from each bus vendor and develop powertrain models based on typical specification for similar motors, batteries, or other system components.

Subtask 1.2 – Develop Vehicle Route Models

CEM will work closely with the Everett Transit fleet manager to identify and collect data on up to three routes deemed typical and suitable for the alternative fuel vehicles under consideration. CEM will rely on the fleet manager to arrange a time for CEM to conduct data collection on a similar vehicle using a GPS data logger. Alternatively, the fleet manager may provide CEM with speed versus time data from an existing dataset for their vehicle(s), provided that the data sample rate is 1 Hz or greater.

Subtask 1.3 – Construct Vehicle Powertrain Models

CEM will build a detail dynamic model of the proposed electric buses. The models will use data obtained from Subtask 1.1 and will simulate operation of the vehicles on the route obtained in Subtask 1.2.

Subtask 1.4 – Exercise Vehicle Models

CEM will run the vehicle model and evaluate its efficiency, energy consumption, and ability to perform on the fleet route.

Task 2 – Life Cycle Cost Analysis

CEM will work closely with the Everett Transit fleet managers to assess the life cycle cost of the electric buses under consideration. The results generated by CEM in Task 1 will provide the basis for the life cycle cost analysis in Task 2. The goal of this task is to identify fuel costs and

vehicle operational and maintenance costs expected over its anticipated life in comparison to traditional diesel engine driven counterparts.

The following subtasks are envisioned for completing Task 2.

Subtask 2.1 – Develop Fuel / Energy Cost Models

CEM, in conjunction with Everett Transit and their local electric utility, will develop energy cost models for the electric bus. The energy costs models will rely on data from the CEM analysis performed under Task 1. CEM will rely on Everett Transit fleet managers to work with their local utility to provide utility rate models that CEM may implement to determine the most cost effective solution for the fleet.

Subtask 2.2 – Determine Vehicle Life Cycle Cost

CEM, with assistance from Everett Transit fleet managers, will assemble data to develop an overall vehicle life cycle cost model. The model will included fuel/energy costs, as well as operations and maintenance costs. Models will be constructed for the proposed alternative fueled vehicle and its fossil fuel counterpart to provide an overall comparative analysis. CEM will rely on Everett Transit to provide cost estimates for the electric buses, chargers, and battery replacement from their vendor communications. If the bus cost information cannot be obtain, CEM will provide estimates based on publicly available information.

Task 3 – Fleet Emissions Study

CEM will work closely with Everett Transit fleet managers to assess the emission and economic benefits of the electric buses under consideration. The results generated by CEM in Task 1 will provide the basis for the vehicle fuel consumption and emissions study.

The following subtasks are envisioned for completing Task 3.

Subtask 3.1 – Develop Emissions Models

CEM will work closely with Everett Transit fleet managers to obtain emissions performance data on the proposed alternative fuel vehicle and its fossil fuel counterpart. This data will include an emissions profile based on the energy and fuel consumptions of the vehicles resulting from powertrain simulations by CEM in Task 1.

Subtask 3.2 – Determine Emissions and Economic Benefits

Using models developed in Subtasks 3.1, CEM will perform a comparative analysis of the emissions profile of the proposed alternative fuel vehicles versus their fossil fuel counterpart along the selected routes. The emissions analysis will focus on greenhouse gas and NO_x emissions.

Task 4 – Fleet Implementation Considerations

CEM will complete a final report documenting results and considerations for an Everett Transit electric bus fleet implementation. The final report will be submitted to Everett Transit within 30 days of the project end data.

PROJECT TITLE:

Sponsored Research Agreement No. UTA15-001169 between the University of Texas and the City of Everett

- _____ Briefing
- _____ Proposed Action
- _____ Consent
- _____ Action
- _____ First Reading
- _____ Second Reading
- _____ Third Reading
- _____ Public Hearing
- _____ Budget Advisory

COUNCIL BILL # _____
 Originating Department Transportation Svcs
 Contact Person Tom Hingson
 Phone Number 425-257-8939
 FOR AGENDA OF November 10, 2015

Initialed by:
 Department Head _____
 CAA dh
 Council President ds

Location Preceding Action Attachments Department(s) Approval
 Transportation Services Agreement Legal

Amount Budgeted	\$183,800	
Expenditure Required	\$19,521	Account Number: 425 5 090 010 010 410
Budget Remaining	\$87,493	
Additional Required	-0-	

DETAILED SUMMARY STATEMENT:

Everett Transit is considering the use of all-electric buses as it looks toward future fleet replacement vehicles. There are several manufacturers, batteries and recharging types to consider. The Center for Electromechanics at the University of Texas at Austin specializes in helping agencies determine whether or not an electrified fleet is viable and what choices would be best for its operating environment. This agreement authorizes Everett Transit to engage the University in researching the alternatives and assisting the City in making an informed decision on it next fleet purchase.

RECOMMENDATION (Exact action requested of Council):

Authorize the Mayor to sign Sponsored Research Agreement No. UTA15-001169 between the University of Texas and the City of Everett to determine the best future fleet options in an amount not to exceed \$19,521.

Account approved
11-10-15 A.S.