

NTRD Program Disclaimers

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**Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report**

Contract Number: __582-5-70807-0011 ____

Grantee: __Rolling Frito Lay Sales, LP_____

Date Submitted: __September 8, 2006_____

Report for the **Monthly** period:

Starting Date __08/01/06_____ Ending Date __08/31/06__

Section I. Accomplishments *(Please provide a bulleted list of project accomplishments as well as a description of their importance to the project.)*

- **Project Management**

- A proposed fourth contract amendment has been drafted and sent to TCEQ for consideration and approval. This amendment describes the change in Azure Dynamics hybrid drivetrain type from parallel to series and vehicle substitution from the Frito-Lay supplied base vehicle to one produced for another customer. The only change to the contract wording required was in the Budget section, which described the type of hybrid drive train. The project budget and timeline are not impacted by this change. Making the vehicle substitution is the only way to execute the project under the existing timeframe allowed due to the unexpected difficulties experienced with the GM transmission during drive train conversion.
- An initial meeting was conducted with the

- **Vehicle Construction** –

- **Azure Dynamics** – Since Azure Dynamics has run into unexpected difficulties with the GM 4L80E transmission, Azure has proposed substitution of a series-type hybrid for the purposes of executing the testing for this study. The proposed series type vehicle is of a different size and Gross Vehicle Weight Rating (GVWR) than what Frito-Lay typically uses in the delivery operation, so some consideration will have to be given as to how the vehicle will fit into daily operation during the testing routine. This question is being addressed with the local Sales team who will be operating the hybrid vehicle during testing. The test protocol may have to be adjusted to have this vehicle follow the diesel-electric HEV with a static load during the testing. Final arrangements are TBD, but expected to be finalized by mid-September.
- **Eaton/International** – The step van body has been constructed on the hybridized chassis and the completed truck delivered to Eaton in Galesburg, Michigan for control systems tuning. An unexpected problem was encountered where the diesel engine would not start; the problem is being addressed by controls experts internal and external to International and Eaton at the current time. The International/Eaton project team is still aiming for an October 6 truck delivery to Frito-Lay in Dallas, TX. This timeline may compromise ultimate fuel economy and emissions improvement over the base vehicle, but the overall project timeline will not support additional tuning time beyond the October 2 ship date.
- **General** – several potential versions of special hybrid decals to be applied to the study trucks have been generated and reviewed by the Frito-Lay headquarters fleet team. Input from the team was used to generate a second revision of potential graphics which will be reviewed and finalized by mid-September. The special decal package will be highlight the hybrid electric nature of the trucks and also contain the logos of TCEQ and each truck hybrid drive train manufacturer.

- **Testing/Data Acquisition**

Testing Protocol & Project Management – Lopez Garcia Group

Frito-Lay has revised the testing protocol document and submitted to Lopez Garcia; LG has returned final comments. At this point, submission of the document is awaiting the potential changes to the testing routine required by the substitute truck; final timing of protocol submission is estimated to be mid-September.

Emissions Instrumentation – Clean Air Technologies

All arrangements for delivery, installation, and calibration of the PEMS has been worked with Clean Air Technologies. The project working schedule will be updated and communicated between Frito-Lay, Clean Air Technologies, Southwest Research, and Lopez Garcia Group.

Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:

The above activities are directly related to Article 2, Scope of Work, Task 1: Development and Delivery of Hybrid Vehicles, specifically sections 2.1.1, 2.1.2, and 2.1.3.

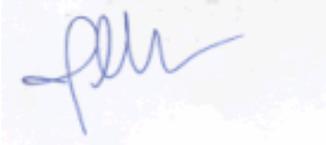
Section II: Problems/Solutions

<p>Problem(s) Identified</p> <p><i>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</i></p>	<p><i>Proposed substitute truck varies substantially from the standard delivery truck; may not be able to use this vehicle for normal delivery operation during the on-road test phase; may drive changes to the testing protocol to accomodate.</i></p>
<p>Proposed Solution(s)</p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<p>1) <i>Address vehicle differences with local sales delivery team for input and potential options.</i></p> <p>2) <i>If not suitable to daily delivery operations, the truck may require a dedicated driver to shadow the other hybrid truck during testing with a dummy load; testing protocol to be adjusted accordingly.</i></p>
<p>Action(s) Conducted and Results</p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</i></p>	<p><i>Final solution TBD; conversations with local team ongoing.</i></p>

Section III. Goals and Issues for Succeeding Period: *(Please provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen)*

1. *Continue vehicle construction activities with each supplier. Intervene as necessary to ensure vehicle delivery does not slip. Could continue to be a challenge with each supplier due to the unforeseen difficulties to date.*
2. *Finalize testing protocol document & submit to TCEQ for approval (pending changes in testing routine required by substitute vehicle)..*

3. *Continue to align with key players and identify routes within Frito-Lay delivery system for on-road testing phase of project due to begin in November.*



Date: September 8, 2006

Authorized Project Representative's Signature

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*