

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

**Contract Number:** 582-11-13473-2019  
**Grantee:** Robert Bosch LLC  
**Report for the Monthly period:** December 2011 **Date Submitted:** January, 10, 2012

**Section I. Accomplishments**

*Provide a bulleted list of project accomplishments as well as a description of their importance to the project.*

- Investigating procuring a marine engine for the upcoming engine dynamometer testing and demonstration
  - Comparing several available engines (Cummins marine, KTA19-M3/4)
  - Close to final engine selection
  - Shipping, price, procurement, purchase order, etc. for engine in progress
- Design of aftertreatment system
  - Design discussions, evaluation, and comparison of two possible approaches in progress:
    - a) 'Box' design or
    - b) 'in-line' design.
  - Finalizing computer assisted design (CAD) models for computational fluid dynamics (CFD) simulation
- Selective catalytic reduction (SCR) urea delivery system
  - In progress -- Design layout of the urea tank (approximately 1000 liters for each engine)
  - In progress -- Design layout of hydraulic urea lines; modification of backflow valve for urea supply module
- Procurement of components of aftertreatment system for assembly in sample shop
- Preparation of wiring harness and for dynamometer testing
- Preparation of sensor positions for baseline measurement at FEV dynamometer

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

- Phase 1 – Task 2: System Design
  - 2.1 First design of aftertreatment concepts
  - 2.2 Tank Layout
  - 2.3 Wiring harness
  - 2.4 CFD Modeling
  - 2.5 Catalyst selection

## **Section II: Problems/Solutions**

*Problem(s) Identified: Report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project*

- a) Longer than anticipated lead time needed for procuring some after treatment components

*Proposed Solution(s): Report any possible solution(s) to the problem(s) that were considered/encountered*

- a) The starting date of the dynamometer testing of the aftertreatment system at FEV was postponed to the beginning of March 2012.

*Action(s) Conducted and Results: Describe the action(s) taken to resolve the problem(s) and its effect*

- a) New timetable was discussed with FEV and integrated in the test procedure. No issue expected.

## **Section III. Goals and Issues for Succeeding Period:**

*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*

- Complete subcontract with FEV
- Tank: face to face meeting with potential urea tank supplier at end of January 2012
- Start with CFD simulations, calculations, and iterations needed for refining the simulations
- Starting manufacturing of aftertreatment system in Bosch 'sample shop'
- Detailed test plan for the upcoming engine dynamometer at FEV and the Work packages

Date: 1/11/2012

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*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.*