



## eTec News

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“U.S. Department of Energy awards \$1.247 million to eTec for its application entitled *Investigation of Hydrogen-Fueled Internal Combustion Engine Durability.*”

The U.S. Department of Energy (USDOE), under the Funding Opportunity Announcement No. DE-PS26-06NT42801, entitled “Alternative Hydrogen Production Pathway and Hydrogen Utilization” has awarded eTec \$1.247 million for its application entitled “Investigation of Hydrogen-Fueled Internal Combustion Engine Durability.”

The total project, valued at \$1.889 million investigates the durability of an internal combustion engine (ICE) running on pure hydrogen gas. The project is divided into four tasks. An abbreviated description of the project is provided below:

### Task 1: Laboratory Accelerated Durability Testing

Laboratory testing will center on the long-term durability of the complete engine system. A 6.0-liter V-8 engine will be assembled using the design developed by eTec and Roush Industries, installed on an engine dynamometer test cell operated by Roush prepared specifically for hydrogen and operated for 1000 hours at various performance levels. Engine wear and oil samples will be evaluated at the end of the test period.

### Task 2: Field Testing of Diverse Fleets

Field testing will include operation of 8 light-duty HICE pickup trucks converted by eTec and Roush Industries. Vehicles will be operated for a minimum of 12,000 miles per year (each) for two years in typical commuting and transportation service. Records on fuel, maintenance will be collected and analyzed. Tail pipe emissions will be tested on two converted trucks prior to the field testing.

### Task 3: Assessment of Durability Risks and Recommendations for Risk Reduction

Upon completion of laboratory and field testing, all operating and engine teardown data will be assembled for review. The data will be analyzed to determine factors impacting engine durability and performance (emissions and power).

### Task 4: Reporting

Task reports will be prepared upon completion of each of the tasks. A Final report presenting the results of Task 3 assessments will be prepared which incorporates the final reports for Tasks 1 & 2.

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