



# Future Truck Program Position Paper: 2004-6

## *Future Battery Systems*

Developed by the Technology & Maintenance Council's (TMC)  
**Future Electrical/Electronics Task Force**

### **ABSTRACT**

Future electrical systems encompass batteries, electronics and communication systems. Today's battery system is a cost-effective solution. However, the trucking industry has expressed the need for further enhancements resulting in improved product performance, maintenance and safety, while meeting the increased demand for electrical energy in the parked and driving operational modes. Any improvements made should not adversely affect, and be compatible with, other systems. This TMC Future Truck Position Paper describes the needs of fleets with respect to future battery systems during the next 5-10 years time frame. It does not provide, nor recommend specific solutions to satisfy intended needs. Rather, it provides manufacturers an opportunity to develop and manufacture products for the trucking industry that meet certain fleet-driven expectations.

### **INTRODUCTION**

This TMC Future Truck Position Paper covers three battery system aspects:

- Performance Requirements
- Maintenance requirements
- Operation Requirements

### **A. PERFORMANCE REQUIREMENTS**

#### **Higher System Voltage Potential**

The trucking industry expresses the need for higher system voltage during different modes of vehicle operation, such as parking, starting,

varying ambient temperatures, etc. The system should include the charging device and storage device.

### **B. MAINTENANCE REQUIREMENTS**

#### **Battery Performance/ Diagnostics Intelligence**

Future battery systems should enhance onboard diagnostics and warning capabilities, including information on the battery system capacity and health. The battery system should

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include the storage device, charging device, cables and connections.

### **Parts Availability**

Future battery system parts should be available at the same or better service level as compared with today's system.

### **Service**

Future battery systems should provide fleets:

- Simplified, faster service requirements,
- Longer service intervals, and;
- More detailed knowledge of the system.

### **Training and Service Tools**

The trucking industry requires enhanced and standardized training tools and methods that are easy to understand. Service tools should be compatible with truck communication systems and TMC's Vehicle Maintenance Reporting Standard (VMRS) codes.

### **Diagnostics**

Future battery systems should have enhanced onboard diagnostic and warning capabilities, covering individual parts and components. The systems should be compatible with truck standard onboard/offboard communications systems.

## **C. OPERATIONAL REQUIREMENTS**

### **Cost of Ownership**

Future battery systems need to improve fleet cost of ownership over the life of the vehicle.

### **Resale Value**

Future battery systems not only need to improve vehicle performance, maintenance and operations, they also should provide fleets with equivalent or improved resale value.

