2011 Annual Merit Review

Results Report

October 2011

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Introduction

The 2011 U. S. Department of Energy (DOE) Hydrogen Program and Vehicle Technologies Program Annual Merit Review and Peer Evaluation Meeting (AMR) was held May 9-13, 2011 in Crystal City, VA. The review encompassed all of the work done by the Hydrogen Program and the Vehicle Technologies Program: a total of 298 individual activities were reviewed for Vehicle Technologies, by a total of 115 reviewers. A total of 1,236 individual review responses were received for the technical reviews.

The objective of the meeting was to review the accomplishments and plans for the Vehicle Technologies Program (VTP) over the previous 12 months, and provide an opportunity for industry, government, and academia to give inputs to DOE on the Program with a structured and formal methodology. The meeting also provided attendees with a forum for interaction and technology information transfer.

It should be noted that select DOE-funded projects, both oral and poster presentations, were not reviewed during the 2011 AMR. Generally, this was a result of subprogram preferences, including a rotation of projects that are formally reviewed one year, not reviewed the following year, reviewed the year after that, etc. Further, it was determined that all subprogram overview presentations would not be reviewed during the 2011 AMR. Another example is scheduling formal reviews based on project activity. For example, regulatory program activities tend to be ongoing, highly structured, and specifically directed by Congress. Thus, such VTP activities are typically evaluated on a less frequent basis. For those projects that were designated for review, the intention was to have a minimum of three reviewers. In a few specific cases, some projects had less than three reviewers due to medical emergencies, late cancellations, or other unforeseeable circumstances that impacted reviewer availability and subsequently, project reviews.

The reviewers for the technical sessions were drawn from a wide variety of backgrounds, including current and former vehicle industry members, academia, government, and other expertise areas. In the technical sessions, these reviewers were asked to respond to a series of specific questions regarding the breadth, depth, and appropriateness of the DOE Vehicle Technologies Program activities. The technical questions are listed below, along with the scoring metrics (if appropriate). These questions were used for all Vehicle Technologies Program reviews, including any American Recovery and Reinvestment Act (ARRA) reviews.

Question 1: Does this project support the overall DOE objectives of petroleum displacement? Why or why not?

Question 2: Approach to performing the work: the degree to which technical barriers are addressed, the project is well-designed, feasible, and integrated with other efforts. (Scoring weight for overall average = 20%)

> *Scoring: 4=outstanding (sharply focused on technical barriers; difficult to improve approach significantly); 3=good (generally effective but could be improved; contributes to overcoming some barriers); 2=fair (has significant weaknesses; may have some impact on overcoming barriers); 1=poor (not responsive to project objectives; unlikely to contribute to overcoming the barriers).*

Question 3: Technical accomplishments and progress toward overall project and DOE goals: the degree to which progress has been made, measured against performance indicators and demonstrated progress toward DOE goals. (Scoring weight for overall average = 40%)

> *Scoring: 4=outstanding (excellent progress toward objectives, suggests that barriers will be overcome); 3=good (significant progress toward objectives and overcoming one or more barriers); 2=fair (modest progress in overcoming barriers, rate of progress has been slow); 1=poor (little or no demonstrated progress toward objectives or any barriers).*

Question 4: Collaboration and coordination with other institutions. (Scoring weight for overall average = 10%)

> *Scoring: 4=outstanding (close, appropriate collaboration with other institutions, partners are full participants and well coordinated); 3=good (some collaboration exists, partners are fairly well coordinated); 2=fair (a little collaboration exists, coordination between partners could be improved); 1=poor (most work is done at the sponsoring organization with little outside collaboration, little or no apparent coordination between partners).*

Question 5: Proposed future research: the degree to which the project has effectively planned its future work in a logical manner by incorporating appropriate decision points, considering barriers to the realization of the proposed technology, and, when sensible, mitigating risk by providing alternate development pathways. (Scoring weight for overall average = 10%)

Scoring: 4=outstanding (plans clearly build on past progress and are sharply focused on barriers); 3=good (plans build on past progress and generally address overcoming barriers); 2=fair (plans may lead to improvements, but need better focus on overcoming barriers); 1=poor (plans have little relevance toward eliminating barriers or advancing the program).

Question 6: Resources: how sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

Responses: excessive, sufficient, insufficient.

Responses to the questions were submitted electronically through a web-based software application, PeerNet, operated by the Oak Ridge Institute for Science and Education (ORISE). Database outputs from this software application were analyzed and summarized to collate the multiple-choice, text comment, and numeric scoring responses and produce the summary report.

The report is organized by technical area. Responses to the questions are summarized in the pages that follow, with summaries of numeric scores for each technical session, as well as text and graphical summaries of the responses for each individual technical activity. A list of the activities (and page numbers) for each section appears at the start of each section.