Office of Planning, Budget and Analysis
U.S. Department of Energy · Office of Energy Efficiency and Renewable Energy

November 2009 *Case Study Series—Demonstrating Value of Program Evaluation*

DOE Hydrogen Program Saved* Nearly $30 Million by Investing in Annual In-Progress Peer Reviews

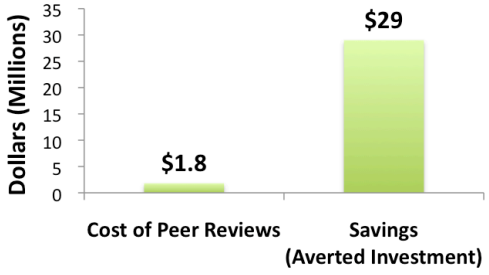
- Peer reviews convene independent external experts to critically review programs and in-progress projects.
- The Hydrogen Program has been exemplary in the use of this management tool to enhance efficiencies.
- The program makes decisions on projects (continue/discontinue/complete) based in part on the reviews.
- Sizable financial savings can be achieved by discontinuing poor performing projects deemed unlikely to contribute to successful mission accomplishment.
- From 2003-2007, the program realized a cumulative net savings of $27 million from the reviews, a fifteen-fold return on investment in peer reviews.
- In addition to providing efficiency and productivity gains, evaluation activities such as peer reviews respond to Presidential and Congressional directives calling for program evaluations in Federal agencies.

Spending money for program evaluations can lead to considerable financial savings

The Department of Energy's (DOE) Hydrogen Program saved $29 million by avoiding continued investment in competitively selected planned projects determined to be unproductive or misaligned with program goals. This was due in large part to peer review recommendations for "in-progress" projects, according to a case study on the benefits of peer review - a form of program evaluation.

At a total cost of $1.8 million over the years 2003-2007 to conduct the annual reviews of projects, the $29 million amounted to a fifteen fold direct return on investment in peer reviews, and net savings of $27 million (Figure 1). The averted investment was redirected to higher valued projects. The study did not quantify any additional benefits from redirecting activities due to insights from the peer reviews.

Figure 1. Cumulative Peer Review Cost and Benefits: DOE Hydrogen Program, 2003-2007



The Hydrogen Program judged 95 percent of the projects reviewed to be sound investments, based on the peer review findings provided by independent experts. After responding to the reviewers' numerical ratings and qualitative comments, the program decided to continue these projects – some with refinements and adjustments – or complete them in the year of the review. The continued projects were deemed technically sound and aligned with multi-year program plans, in support of the technical targets and goals of the program. Five percent (5%) of planned projects were discontinued.

Expert-informed adjustments and realignments to projects help improve the likelihood of success

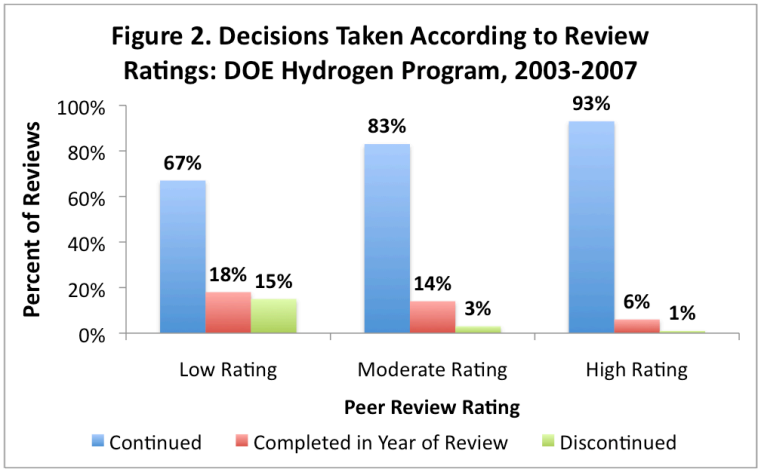
The peer review process had the additional benefit of sharpening project focus and alignment to program goals, thus improving project performance and likelihood of success for the reviewed projects that were continued. This improved overall efficiencies across the entire program.

* For this case study, "saved" refers to avoided continued investments that are redirected to higher valued projects.

Over the five years, the Hydrogen Program conducted 695 reviews of planned projects. Of these, 82% were continued, 5% were discontinued, and 13% were completed and not renewed. Projects that were continued received an average rating of 3.0 on a scale 1 to 5. By contrast, projects that were discontinued received, on average, a 2.7 rating. Although the difference appears to be small, it was statistically significant, due to the stringent scoring method.

Of the projects that rated relatively high (greater than 3.3), 93% were continued, 6% were completed and not renewed, and 1% were integrated with other projects (Figure 2). Of the projects that received a moderate score (between 2.8 and 3.3), 83% were continued, 14% were completed and not renewed, and 3% were discontinued.

Sixty-seven percent (67%) of projects were continued despite their low rating (less than 2.8). Modifications and adjustments were made to these 89 projects to improve their likelihood of success. Eighteen percent (18%) of the low-rated projects were completed and not renewed, and 15% were discontinued.



The decisions made by the program are based only in part on the numerical rating a project receives. Additional reviewer judgments, reflected in their qualitative comments, are also considered in the decisions, as these provide important insights that the quantitative rating alone may not provide.

The case study findings show that the projects improved after adjustments were made based on the initial peer reviews. Of the projects that were continued despite an initial low rating, 31 were reviewed at least once more in this case study's timeframe. Of these, 81% had a higher rating at their next review. On average, the 31 projects rated 2.6 at their first review, and 3.0 at the next review. This difference was statistically significant.

While reaping management & financial efficiency benefits, DOE Hydrogen Program's peer reviews also respond to Presidential and Congressional policy directives on performance and program evaluation

Program evaluation activities such as peer reviews respond to important policy directives. One example is the October 7, 2009 OMB Memorandum for the Heads of Executive Department and Agencies on the topic—Increased Emphasis on Program Evaluations. The OMB Memorandum calls for rigorous, independent program evaluations to become a *"key resource in determining whether government programs are achieving their intended outcomes as well as possible and at the lowest possible cost."*

The findings from this case study demonstrate the financial benefit of peer reviews, and their usefulness as a management tool for ensuring that Government program resources are spent efficiently and effectively.

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Source: *Assessment of Financial Savings From Peer Reviews of In-Progress Projects: A Case Study from the Department of Energy's Hydrogen Program,* prepared by Yaw O. Agyeman, TMS, Inc. with Jeff Dowd, DOE EERE, October 2008.
http://www.eere.energy.gov/ba/pba/pdfs/h2financialsavings.pdf

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