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A·P·L·U Report Urges EERE to Adopt Best Practices in R&D Management Processes

January 31, 2011—To meet 21st century energy challenges, the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) "must go beyond best practices in merit review to the adopt a set of best practices in human resources, procurement, contracting, public-private cooperation, and technology transfer that is currently practiced by leading edge applied research organizations in the public and private sector," according to report issued today by the Association of Public and Land-grant Universities (A·P·L·U).

"Business as usual will not work," said James Turner, senior counsel and director of energy programs at A·P·L·U. "Both the Congress and the Obama Administration are expecting unprecedented energy savings from new energy efficiency technologies and dramatically increased production of renewable energy. Technologies based on EERE research are expected to be deployed in a fraction of the time they have been in the past. Robust merit review practices alone will not ensure the results of today's research projects are available in 2015 or 2020 in a form that industry can demonstrate and deploy them, but it will be step forward."

The report, *Best Practices in Merit Review*, calls for reform of all of processes supporting EERE's research and development effort to reflect a sense of urgency. Integrated web-based proposal submission and evaluation tools; effective communication of funding opportunities and evaluation criteria to both applicants and reviewers; and fast starts for unproven but promising concepts should be accompanied by lean business practices including streamlined hiring procedures for EERE employees and detailees, streamlined contracting procedures to get funding in place quickly, and a rigorous set of program reviews that move the research along quickly and get more business oriented as the project moves closer to deployment.

The report is the result of the one-day conference, *EERE Peer Review Best Practices Workshop*, conducted in January 2010 and attended by experts from across the government, academe and the private sector. This conference featured descriptions the merit review processes and research strategies of each of the Federal Government's major basic and applied research programs as well as speakers from companies and universities that are among the best in getting research ideas into the commercial market.

The goal was to assess the applicability of public and private sector best practices to EERE as it readies to re-engineer its processes to identify, develop and transfer a robust set of technologies in time to meet U.S. carbon reduction targets of 17 percent of 2005 carbon emissions levels by 2020, 42

percent by 2030, and 83 percent by 2050. There was a remarkable degree of consensus on how an applied research program must be structured to achieve success.

Among the recommendations:

- EERE should develop its own merit review guidelines geared to EERE's unique mix of programs, including the flexibility to move quickly, using a DARPA-like internal review approach when appropriate, and to bring in external expertise as needed to supplement internal expertise either in initial selection or project reviews.
- Enhance in-house expertise by bringing in university and industry experts under the Intergovernmental Personnel Act, which provides for the temporary assignment of personnel between the Federal Government and other organizations, and allows those experts to serve as temporary Federal employees and perform Federal functions.
- Increase use of white papers, concept papers, and/or pre-proposals, possibly using an interactive process if time permits, in which the applicant gets feedback from the Federal manager and the Federal manager learns the capabilities of the applicant, could help to streamline the proposal submission process and increase proposals' responsiveness to EERE needs.
- Design processes and/or initiatives that promote innovative, outside the box concepts, and provide funds for early career scientists or engineers. These could include a young investigator program, seed funding to establish feasibility of technologies that are unproven but innovative and promising, and/or ways to integrate basic and applied research projects. Be open to alternate routes to technology deployment.
- Consider investing EERE resources in a seedling program that provides easily approved initial funding for promising ideas that are unproven but, if ready, could be launched through startups and venture capital.
- Ensure a robust in-progress review process for EERE programs that reflects the stage the project is in so that promising projects are challenged to produce results quickly. Establish mechanisms to enhance and accelerate promising projects. Cut losses by terminating unproductive projects.
- Explore ways to more effectively incorporate transfer of technologies from universities and national laboratories to the companies that will commercialize them. Conduct an analysis of cost sharing and its impact on participation in EERE programs and the commercialization of EERE technologies.

Link to Report: [Best Practices in Merit Review](#)