A Report by a Panel of the National Academy of Public Administration
for the United States Congress and the Department of Energy

Office of Energy Efficiency and Renewable Energy:



REORGANIZING FOR RESULTS



September 2004

NATIONAL ACADEMY OF
PUBLIC ADMINISTRATION

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Office of Energy Efficiency and Renewable Energy:

Reorganizing for Results

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FOREWORD

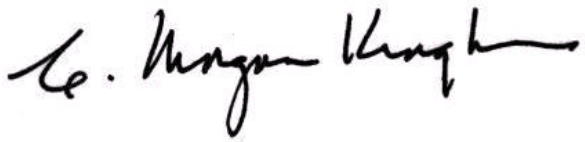
The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) is charged with strengthening the Nation's energy security, environmental quality, and economic vitality. Through public-private partnerships, EERE works to enhance energy efficiency and productivity; bring clean, reliable and affordable energy technologies to the marketplace; and make a difference in the everyday lives of Americans by increasing their energy choices and improving their quality of life.

In July 2002, EERE leadership restructured the headquarters offices and reengineered business management processes to focus on program performance and results to better accomplish EERE's mission. EERE's move to performance-based, results-oriented management systems reinforces that such measures are essential to effective public administration.

This project was a unique opportunity for both EERE and the Academy. The high level of interaction between EERE's top leadership and the Academy Panel overseeing the study gave the Panel an opportunity to champion its recommendations throughout the reorganization process, and enabled EERE to make numerous midcourse corrections to address implementation issues. The value of this relationship is reflected in EERE's consideration and adoption of an overwhelming majority of the Panel's recommendations.

I want to thank the Academy Fellows who served on the Panel; their insights, guidance, and degree of participation were invaluable. Additionally, I am grateful to the EERE representatives whose cooperation, patience and openness to new ideas were key to this project's success. I also would like to extend my appreciation to the professional staff of the House and Senate Interior and Related Agencies Appropriations Committees for their continuing interest in the management of our nation's energy resources and their guidance throughout this review. Finally, I extend my thanks to the project team for its hard work and diligence throughout this intense 18-month effort.

This report chronicles recommendations made to improve the management of EERE's programs and to enable the office to become more effective, efficient, and accountable. This project has not only better aligned EERE to meets its mission, but also has provided the Academy a model for future projects to help government achieve excellence.



C. Morgan Kinghorn
President
National Academy of Public Administration

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ACRONYMS

ASERTTI	Association of State Energy Research and Technology Transfer Institutions
The Academy	The National Academy of Public Administration
C&O	Office of Communications and Outreach
CNAC	CNA Corporation
CPS	Corporate Planning System
DAS	Deputy Assistant Secretary
DAS-BA	Deputy Assistant Secretary for Business Administration
DAS-TD	Deputy Assistant Secretary for Technology Development
DER	Distributed Energy Resources Program
DOE	Department of Energy
EERE	Office of Energy Efficiency and Renewable Energy
EWD	Energy and Water Development (Appropriations)
FE	Office of Fossil Energy
FEMP	Federal Energy Management Program
FFRDC	Federally Funded Research and Development Centers
FMC	Financial Management Center
FTE	Full-time equivalent
FY	Fiscal year
Golden	Golden Field Office, Golden Colorado
LAN	Local area network
MAP	Management Action Plan
MOU	Memorandum of Understanding
NETL	National Energy Technology Laboratory
NASEO	National Association of State Energy Offices
NREL	National Renewable Energy Laboratory
OIBMS	Office of Information and Business Management Systems
OMB	Office of Management and Budget
OPBFA	Office of Planning, Budget Formulation and Analysis
OWIP	Office of Weatherization and Intergovernmental Program
PMC	Project Management Center
PMO	Project Management Office
RODO	Regional Office and Deployment Operations
R&D	Research and development
RDD&D	Research, development, demonstration and deployment
SOP	Standard operating procedure
STAC	State Technologies Advancement Collaborative

EXECUTIVE SUMMARY

Of the Department of Energy's $23 billion budget, the $1.3 billion allocated to the Office of Energy Efficiency and Renewable Energy (EERE) offers important opportunities to assist in resolving one of the major issues facing the Nation today—the need for sources of clean, reliable, efficient, secure and affordable energy. EERE's programs—which include advanced hydrogen fuel concepts, renewable power technologies, transportation and building technologies—are aimed at improving this country's efficient use of energy, increasing the diversity of energy sources on which we rely, and making us less dependent on foreign energy sources. The management of this small office should be of major interest to leaders of both government and industry as EERE leadership tries to ensure that every dollar is used most effectively in the pursuit of its mission to strengthen America's energy security. This was the goal of Assistant Secretary David Garman as he launched a comprehensive reorganization of EERE on July 1, 2002.

The reorganization was not a one-time event. It has been a positive process that continues to evolve. This sweeping reorganization changed how EERE manages its programs, consolidated basic administrative functions, and changed how EERE awards and manages its research and development funds. EERE now is in the process of assessing how best to encourage and increase the use of the new energy efficient and renewable energy technologies being developed.

Assistant Secretary Garman and the staff of the House Interior Appropriations Subcommittee asked the National Academy of Public Administration (the Academy) to assess the reorganization and follow its implementation over an 18-month period. The project has involved the Academy in an unusually interactive arrangement, with a high level of collaboration between the Academy Panel and staff and EERE senior management. Rather than waiting until the end of the study, the Panel provided observations and recommendations as the reorganization progressed. As a result, EERE has already accepted an overwhelming majority of the Panel's recommendations and made many changes to its structure and processes. The Panel commends EERE on its willingness to consider new ideas for change and take action.

MAJOR ACCOMPLISHMENTS OF THE STUDY

In the Panel's view, the most significant change this study brought about in EERE's management approach was the development of a Management Action Plan (MAP). This management tool, which includes actions needed to create new processes to match the new organization, is enabling EERE to maneuver through the many challenges it faces as it initiates the changes needed to support its new structure and business model. EERE managers have embraced the MAP, and EERE leadership has indicated it intends to maintain the MAP as part of a program of continuous improvement. The Panel believes that this management reform is generating an environment that will help EERE as it continues to promote program improvements in the years to come.

The study also was instrumental in bringing about important changes to EERE's financial operations. Following the Panel's advice, EERE revised its new organizational structure to combine the budget formulation and execution functions into one office headed by a single budget officer who could represent EERE to the Department of Energy, the Office of Management and Budget, and congressional staff. The study also helped initiate reforms in EERE's acquisition and financial assistance operations. It has provided guidance to EERE leadership as it creates a new organizational entity to process EERE's financial transactions. Panel recommendations also have led to the creation of an acquisition and financial assistance planning process; plans for using performance metrics and past performance in financial assistance awards; and several other changes that the Panel believes will improve EERE's ability to manage its activities more effectively.

EERE is now pursuing another Panel recommendation to develop a comprehensive strategy for bringing the results of its research and development and its advanced systems to the marketplace—activities that EERE calls "deployment." Almost a third of EERE's workforce and a significant portion of EERE's budget are devoted to these activities. EERE has formed a task force to define this function and a strategy for carrying it out.

Throughout this study, the Panel stressed that the success of the reorganization will be judged by whether it has improved EERE's ability to manage its programs in pursuit of its strategic goals, and recommended that EERE identify measures to assess the reorganization's results. To assist in this effort, Academy Panel and staff attended an EERE workshop on management efficiency and co-sponsored with EERE a workshop on program management effectiveness to begin the process of developing indicators to systematically evaluate the effectiveness of its operations.

EERE has made great strides to reinvent how it does business. Many of the new processes and procedures require significant changes in the culture of the organization, and these could take many years to bring to fruition. EERE also will need data to evaluate the results of the reorganization and to determine where future changes are needed. Finally, additional work is needed to further clarify roles and ensure accountability, especially among EERE's field activities.

ACADEMY PANEL FINAL RECOMMENDATIONS

The Panel made many recommendations during the course of this study and EERE has accepted most of them. A House Interior and Related Agencies Appropriations Subcommittee report has directed EERE to adopt all of the Panel's recommendations. As this study concludes, much still remains to be done. The progress EERE has made must continue and intensify for the goals of the reorganization to be fully achieved. The Panel's final recommendations, therefore, look to the future.

Metrics to Evaluate the Reorganization

The management efficiency and program management effectiveness workshops were a good beginning to help answer the question of whether or not the reorganization has improved EERE's

ability to manage its programs. The Panel believes that EERE leadership needs to make it a management priority to continue the process of identifying indicators to assess the results of the reorganization. It should not miss the opportunity to build upon the momentum created during the workshops to complete what it has started.

The Panel recommends that EERE leadership include in the Management Action Plan an area to continue the process to develop indicators of program management performance and effectiveness that can be used to assess the results of the reorganization. It also recommends that EERE select some of the ideas generated during the efficiency and effectiveness workshops to focus on as part of its continuous improvement program.

Defining Roles, Responsibilities and Accountability Mechanisms

A problem that surfaced throughout the study was that EERE has not always defined roles and responsibilities within its new structure or created mechanisms to hold staff accountable. The Panel believes strongly that unless EERE addresses these basic management principles for the organizational changes it has already established and any future change management initiatives, the effectiveness of the new organization will be diminished.

The Panel recommends that as EERE continues efforts to implement the reorganization, it include in its implementation plans action items for both existing and new change management initiatives to define and clarify roles and responsibilities and create mechanisms to hold staff accountable for new processes and procedures.

ACQUISITION/FINANCIAL ASSISTANCE

The Panel is pleased by EERE's response to its many recommendations for improving acquisition and financial assistance operations. The Panel is particularly interested to see that EERE makes progress in the use of performance metrics and past performance information for financial assistance awards.

The Panel recommends that EERE move forward quickly to use performance metrics and past performance information in its financial assistance award decisions.

The Project Management Center

As part of its reorganization, EERE consolidated all of its acquisition/financial assistance and project management operations into a Project Management Center (PMC). The PMC includes EERE's Golden Field Office and regional offices, the National Energy Technology Laboratory, and the State Technologies Advancement Collaborative (STAC), which is a virtual organization representing states involved in federal energy research initiatives. The role of STAC in the Project Management Center is still an uncertain part of the PMC equation. It remains unclear whether STAC will have the capacity to adequately manage its projects and what the true project

management costs will be. In addition, EERE has no way to evaluate STAC's performance or hold it accountable other than assessing how quickly STAC is able to award projects.

The Panel recommends that EERE obtain independent outside expertise to evaluate STAC including its processes; the quality of its awards and how they further EERE's mission; its project management capabilities; its cost of doing business; and EERE's mechanisms to hold it accountable.

Developing EERE's Deployment Strategy

The Panel is encouraged by EERE's efforts to develop a strategy for its deployment activities, which are aimed at applying its advanced technological developments. This initiative will focus on perhaps the most critical pieces of the reorganization that still need to be addressed—the role of advanced system and technology deployment within EERE, the role of the regional offices, accountability mechanisms, and the management structure needed to oversee these critical activities. The Panel believes that the task force's efforts also offer an opportunity to examine EERE's management of technology transfer. Finally, because technology deployment involves many stakeholders who will be impacted by the results of this effort, the Panel believes that the process to develop a deployment strategy must assure EERE's stakeholder community that it has been heard.

The Panel recommends that the deployment task force (1) include issues related to technology transfer as part of the deployment strategy, (2) convene a forum of stakeholders to obtain input on its draft strategy before it is finalized, and (3) assess the organizational implications of its recommendations to ensure that the management of these functions is properly positioned within EERE and that management accountability is ensured.

CONCLUDING COMMENTS

The Panel has enjoyed the opportunity to participate in this unusual project. It believes that the high level of interaction between the Academy Panel and staff and EERE, coupled with an EERE management team that was receptive to an independent review of its actions have resulted in EERE developing an organizational structure, business model, and change management process that will strengthen its efforts to improve program performance and effectiveness.

The Panel believes that it is the responsibility of government leaders to invoke changes that improve public management and administration. As a result of its efforts the last two years, EERE leadership is well on its way to doing that. In an environment where the average tenure of appointed leadership of federal agencies is about two years, EERE's achievements are noteworthy. EERE has demonstrated that much can be achieved in a relatively short period of time if top management is committed to doing so. The leadership of the Department of Energy should examine what EERE has accomplished and consider whether a similar approach would benefit other parts of the Department.

The Panel wishes to express its thanks to both the management and staff of EERE for their assistance and cooperation during this effort. It also hopes to hear from EERE in the future about how the reorganization ultimately affected its ability to manage its programs.

CHAPTER 1
INTRODUCTION

On July 1, 2002, the Office of Energy Efficiency and Renewable Energy (EERE) within the Department of Energy (DOE) implemented a comprehensive reorganization that affected every aspect of its headquarters operations and its field reporting structure. Shortly thereafter, Assistant Secretary David Garman and the House Interior and Related Agencies Appropriations Subcommittee asked the National Academy of Public Administration (the Academy) to review EERE's reorganization to ensure that it was sound and would effectively position EERE to attain its mission. EERE also asked the Academy to examine its acquisition/financial assistance operations to ensure that they would adequately support the new business model. A contract was executed on February 19, 2003.

INTERACTIVE NATURE OF THE STUDY

This 18-month study is the result of a unique effort between the Academy Panel and EERE's senior managers to establish an ongoing, interactive approach to the Academy's evaluation. The study's design included a series of four unpublished interim observation papers that assessed the progress being made, identified problems, and recommended changes to enable EERE to more effectively achieve its mission. A list of all recommendations made in those documents, EERE actions taken, and Academy staff comments are attached as Appendix A.

This process fostered significant collaboration between the Academy and EERE and a high level of interaction on the issues being identified. The ongoing advice the Panel provided during the project enabled EERE to reflect on the reorganization's implementation and make midcourse corrections. Through the ongoing data collection process, the project also provided a mechanism for EERE employees to have input and express their opinions about the reorganization and its implementation.

This report is the fifth and final product that reflects the previous observations and the Panel's final comments on EERE's reorganization.

EERE'S MISSION, WORK AND FUNDING

EERE's mission is to strengthen America's energy security, environmental quality, and economic vitality through public-private partnerships that enhance energy efficiency and productivity; bring clean, reliable and affordable energy production and delivery technologies to the marketplace; and make a difference in the everyday lives of Americans by enhancing their energy choices and their quality of life. EERE leads the federal government's research, development, and deployment[1] efforts in energy efficiency. Its $1.3 billion budget funds

[1] Deployment generally involves getting new energy efficient and renewable energy technologies into the marketplace. Deployment is discussed further in Chapter 4.

activities that contribute to one of the major issues facing the Nation today—the need for sources of clean, reliable, efficient energy. Attention to the management of this small office is critical to ensuring that every dollar is used most effectively in the pursuit of its mission to strengthen America's energy security

To carry out its mission, EERE awards and monitors contracts (acquisition) and cooperative agreements and grants (financial assistance) that invest in high-risk, high-value research and development critical to the Nation's energy future, but which would not be conducted by the private sector acting on its own. Its program activities are conducted through partnerships with stakeholders that include the private sector, state and local governments, DOE national laboratories, universities, and nonprofit organizations. EERE also works with stakeholders to develop programs and policies to facilitate the deployment of advanced clean energy technologies and practices. A brief description of EERE's programs is attached as Appendix B.

EERE's budget authority is derived from two congressional subcommittees.[2] The Interior Appropriation Subcommittee supports EERE's efficiency efforts under the budget line "Energy Conservation." These funds comprise roughly two-thirds of EERE's budget, about $900 million. The Energy and Water Development (EWD) Appropriation Subcommittee supports EERE's work on renewable energy under the budget line "Energy Supply." These funds comprise the remaining third of EERE's budget, nearly $400 million.

FACTORS DRIVING THE REORGANIZATION

The Assistant Secretary's decision to reorganize was driven by a number of internal and external factors. Prior to the reorganization, each of the five major offices, called sectors, had their own budget; management, personnel and administrative systems; and outreach functions. The offices were relatively independent and autonomous, and there was little coordination among them. Assistant Secretary Garman did not have the level of control he desired over EERE's people and processes due to this fragmentation, yet he wanted to standardize common practices across EERE by creating "one way of doing business." Also, EERE's stakeholders were dissatisfied with the agency's lack of results and the way it spent money. In addition to these factors, a series of directives and reports, including the President's Management Agenda, the National Energy Policy, a March 2000 report by the Academy, and a Strategic Performance Review conducted by EERE all suggested areas needing change within EERE.

THE REORGANIZATION

To describe the reorganization as a single event would be inaccurate. EERE's reorganization is a dynamic process that started two years ago and continues to evolve. The July 2002 headquarters reorganization, discussed in Chapter 2, was the first phase. Although the Panel made several recommendations for EERE to adjust its new structure, it concluded that the basic construct of

[2] In the future, EERE's $350 million Weatherization program may receive its funding from a third source, the Department of Health and Human Services appropriation bill, based on House action on fiscal year 2005 Interior and Related Agencies Appropriations.

the reorganization, which built the organization around programs and projects, was sound and appeared to be a reasonable basis for managing EERE. EERE leadership has been responsive to most of the Panel's recommendations to adjust the new structure. It made a number of midcourse corrections to address Panel concerns and other areas where EERE identified the need for some adjustment.

In Spring 2003, EERE leadership announced plans for the second phase of the reorganization—to take full control of its acquisition/financial management and project management services, which had been provided by numerous DOE field entities and national laboratories. EERE's attempt to create a single Project Management Office in its Golden Field Office to perform these functions, and the evolution of that concept to a Project Management Center that includes the National Energy Technology Laboratory as a major service provider are discussed in Chapter 3.

Until October 2003, the only impact the reorganization had on EERE's regional offices was the official to whom they reported. In October, EERE leadership proposed changes that would alter the structure of the regional offices and create a new position to supervise the regional office directors. This aspect of the reorganization is discussed in Chapter 4.

The structural changes were only part of EERE leadership's initiative to reinvent the agency. From the time it implemented the structural reorganization in July 2002, EERE leadership embarked on a multiyear effort to implement a new business and management approach that emphasizes common management practices across EERE. The Panel believes that these changes will have a continuing, long-term, positive impact on the agency and its ability to achieve its mission. These efforts are discussed throughout the report.

STUDY METHODOLOGY

The Academy convened an expert Panel to evaluate the reorganization, guide the project research, and recommend changes to EERE's reorganization implementation. Staff experienced in public management and organization and acquisition and financial assistance supported the Panel. For acquisition and financial assistance expertise, the Academy subcontracted with the Jefferson Consulting Group. Biographical sketches of the Panel members and project staff are in Appendix C.

The primary means of data collection were interviews with EERE staff in headquarters and the field, congressional staff, and stakeholders.[3] Project staff conducted a pertinent literature review, and the data from the interviews were corroborated with supporting documents when available. A list of persons interviewed or contacted throughout this study is in Appendix D.

The Panel met six times during the study to review progress, review and approve interim documents, and provide direction to the project staff. EERE representatives attended the Panel meetings to exchange views with the Panel on a variety of issues. Congressional staff also attended one Panel meeting.

[3] Academy staff used N6® survey software to code and sort the bulk of the interviews. This software aggregates information by subject matter and is used to aid with data analysis.

Academy Panel members and project staff attended the EERE Business Management Measurement Workshop on June 23, 2004 designed to develop critical measures of organizational efficiency for EERE. The Academy Panel also co-hosted with EERE a Management Effectiveness Workshop on June 30, 2004 to develop indicators of program/project management effectiveness to assess how the reorganization has and will impact EERE's ability to manage its programs

ORGANIZATION OF THE REPORT

The remainder of the report is organized as follows: Chapter 2 describes the headquarters reorganization, issues related to EERE's appropriation structure, and accomplishments and savings resulting from the reorganization. Chapter 3 discusses the evolution of the Project Management Center and its impact on EERE operations. Chapter 4 explores issues related to EERE's technology deployment activities and the role of the regions. Chapter 5 focuses on recommendations for improving EERE's acquisition and financial assistance operations. Chapter 6 explores EERE's change management processes and communication mechanisms, future challenges, and the Panel's final recommendations for continual improvement.

CHAPTER 2
THE HEADQUARTERS REORGANIZATION

The July 2002 reorganization fundamentally altered the structure of EERE's headquarters operations and created a new business model for conducting business. This chapter describes the July reorganization, the Panel's initial impressions of it, and the evolution of both the structure and business model resulting from the Panel's recommendations and changes initiated by EERE. It also addresses two concerns of congressional appropriations committee staff: (1) savings resulting from the reorganization, and (2) EERE's ability to work within the new structure and still maintain a distinction between activities funded by the Interior and EWD appropriations subcommittees.

THE 2002 STRUCTURAL REORGANIZATION

Prior to the reorganization, EERE had five Deputy Assistant Secretaries (DAS)—each heading an office representing the following market sectors (see Figure 1):

- Power Technologies
- Industrial Technologies
- Transportation Technologies
- Building Technology, State and Community Programs
- Federal Energy Management Programs

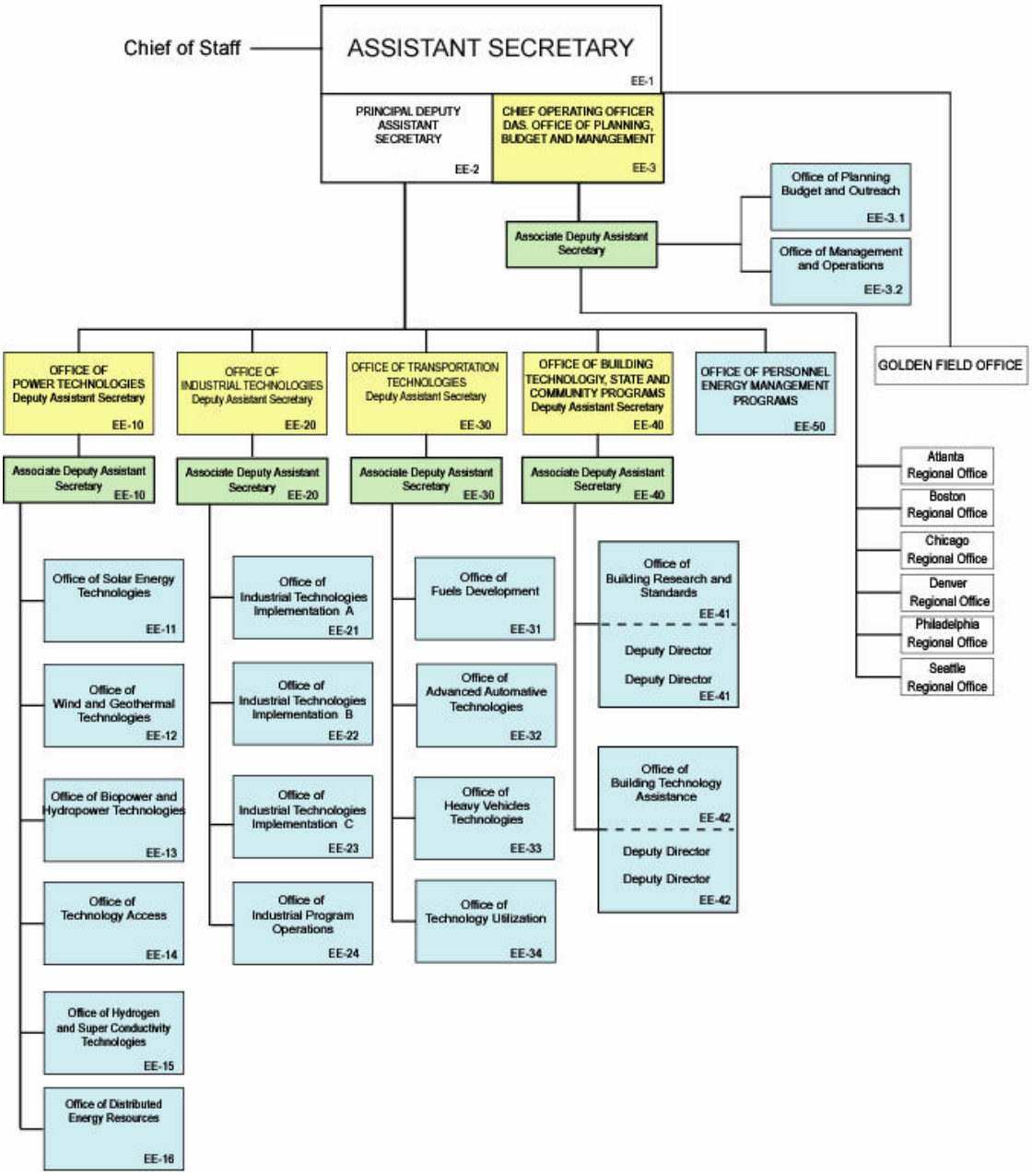
The reorganization eliminated the 5 sectors and created the following 11 program offices that correspond to EERE's major research areas (see Figure 2):

- Solar Energy Technologies
- Wind and Hydropower Technologies
- Geothermal Technologies
- Distributed Energy Resources[4]
- Biomass
- Industrial Technologies
- FreedomCAR and Vehicle Technologies
- Hydrogen, Fuel Cells, and Infrastructure Technologies
- Buildings Technologies
- Weatherization and Intergovernmental
- Federal Energy Management Program (FEMP)

[4] This office was initially named Distributed Energy and Electricity Reliability. The name was changed when some of its responsibilities were transferred to the DOE Secretary's Office.

These offices are headed by 11 program managers who, together with the regional office directors, report to the DAS for Technology Development (DAS-TD).

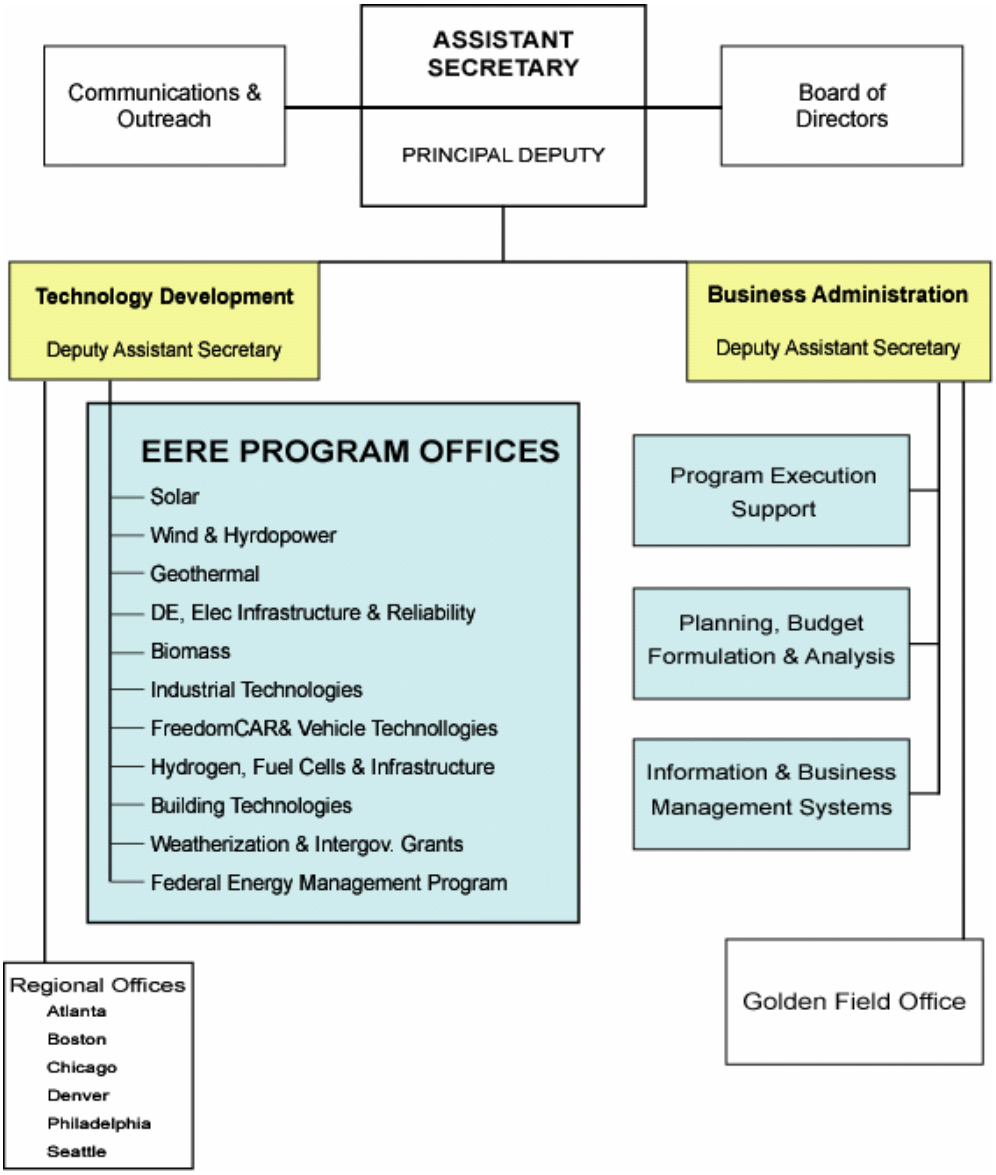
Figure 1. EERE Pre-Reorganization



The reorganization took the business administration and communications and outreach functions that used to be located in each of the sectors and consolidated them into an Office of Business Administration and an Office of Communications and Outreach (C&O), respectively. Staff who performed those program support functions in the former sectors were transferred to the new offices.

The reorganization created three offices within Business Administration—Program Execution Support; Planning, Budget Formulation and Analysis; and Information and Business Management Systems. Those offices and the Golden Field Office (Golden), which is located in Colorado, report to the DAS for Business Administration (DAS-BA) who is the business management counterpart of the DAS-TD. The two DASs and the C&O director report to the Assistant Secretary through a Principal DAS. As part of the reorganization, EERE also created a Board of Directors that reports to the Assistant Secretary.

Figure 2. EERE Restructured Organization



PANEL VIEWS ON THE REORGANIZATION

The Panel's initial observation was that this relatively small, 542-position organization was over-organized prior to the reorganization. It further observed that the basic construct of the reorganization—eliminating the sector organizations, restructuring around the major programs, and consolidating the business administration functions—was sound and appeared to be a reasonable structure for managing EERE. However, the Panel had a number of concerns about certain aspects of the reorganization, which are discussed below.

Program Managers' Span of Control

In keeping with the President's Management Agenda, EERE's reorganization eliminated supervisory levels within the headquarters offices.[5] Rather than having supervisory positions under the program managers, the reorganization provided for team leaders. While the team leaders can relieve the program managers from much of the technical direction and supervision staff require, the program managers must still prepare and conduct the staffs' performance reviews. Currently, 7 of EERE's 11 program offices have 18 or more staff. With such large spans of control, the Panel was concerned that the program managers may not be able to adequately stay abreast of their staffs' activities or have the time necessary to properly supervise and develop them.

In the initial reorganization, only one program office—the Office of Weatherization and Intergovernmental Program (OWIP), with over 40 employees—was allocated two additional supervisors. EERE recently completed a workforce analysis effort (see page 14), which, among other things, looked at the need for additional supervisors in the program offices. As a result, EERE management approved two new supervisory positions for Buildings Technologies, which is the largest of EERE's programs next to OWIP. Before EERE leadership considers assigning additional supervisory positions, it wants more time to observe how the current structure operates.

The Deputy Assistant Secretary for Technology Development's Span of Control

The Panel has expressed concern throughout this project that the span of control for the DAS-TD is too large. Eleven program offices, six regions and several other staff report directly to him. He also is the secondary reviewing official for approximately 250 staff performance appraisals. The consensus from interviews throughout the organization—and outside of EERE as well—is that the DAS-TD has more than he can effectively manage.

In part to address the Panel's concern, EERE has established a director for Regional Office and Deployment Operations (RODO) to be the direct supervisor of the regional office directors. This position is part of a deployment strategy that is now being developed.[6] The RODO director will report to the DAS-TD and reduce his direct reports by five. The extent to which the RODO

[5] The reorganization eliminated 5 associate DASs and 21 office directors.
[6] See Chapter 4 for a discussion on the deployment strategy and the RODO.

director can relieve the DAS-TD from some of his current management burden can be determined only by time.

Collaboration within EERE

A major goal of the reorganization was to eliminate the stovepipes of the former sectors and create an environment that fosters coordination and collaboration among EERE's offices. Placing all of EERE's program offices and the regions under the DAS-TD was viewed as a means to help achieve that goal. In some cases, the restructuring itself helped. Perhaps the most visible example is the Biomass Program. Prior to the reorganization, the three main biomass components (power, fuels and products) were in three different sectors. The reorganization brought those components together into one program office, which has enabled them to more readily collaborate with one another and capitalize on possible synergies. However, collaboration among the program offices and regions still falls short of the reorganization's expressed goal. Although encouraged by top management, there are no formal mechanisms that bring the program offices and regions together to explore areas where they can, and should, work together. Lack of time is often the reason given for collaboration not taking place. Where there is evidence of increased levels of collaboration, efforts are largely the result of individuals within the program offices consulting one another on areas of mutual interest. The Panel recommended that EERE study formal and informal collaboration mechanisms to identify some that it might adopt.[7]

A promising development that may foster greater collaboration among the program offices is the beginning of Thursday "Management Challenges" meetings, which EERE leadership believes are sufficient to promote interaction and collaboration. These are further described in Chapter 6.

The Budget Function

Instead of five relatively autonomous sectors developing budget requests, the July 2002 reorganization gave EERE's Office of Planning, Budget Formulation, and Analysis (OPBFA) responsibility for formulating the entire EERE budget. The budget formulation process has been standardized and streamlined. OPBFA works closely with the program managers to draft a performance-based budget request that uses common assumptions and methodologies to estimate the benefits of achieving the planned program outputs. EERE believes the new processes have significantly reduced the staff time needed to prepare the requests and respond to comments and edits made by DOE prior to the budget's submission to the Office of Management and Budget.

However, the reorganization separated the budget formulation and budget execution functions into two separate offices within Business Administration—the Office of Program Execution Support was responsible for budget execution. The Panel observed that budget execution must be closely coordinated with budget formulation so that there is consistency between the two functions. The Panel believed that having these functions performed by two different offices was detrimental to good budgeting and hindered effective communications between Business Administration staff and the staff of the appropriations committees. In effect, it made the DAS-BA the major contact with congressional staff, a task for which he did not have sufficient time.

[7] See Appendix A, recommendation 10.

EERE took steps to address the Panel's concerns. Responding to a Panel recommendation, EERE appointed a qualified budget officer to be responsible for all budget functions.[8] EERE also transferred the budget execution function to OPBFA in April 2004 and renamed it the Office of Planning, Budget and Analysis. Interviews with program and congressional staff reveal that these changes are having a positive affect on services received.

The Activities and Funding of the Budget Analysis Staff

The reorganization consolidated into OPBFA the program analysis activities performed in the five sectors.[9] The Panel expressed concern about the collocation in one office of the analysis team and the budget formulation team. It found that there was a 90 percent overlap in the work performed by those two staffs. The result was that the budget workload overrode the analysis workload. The Panel recommended more of a separation between these activities,[10] and EERE reports that progress has been made. The budget officer is separating the analysis and formulation teams to the extent possible to help shelter the analysis staff from the day-to-day activities of budget formulation so that essential analysis work can be done. In addition, EERE has hired another two analysts who are fully dedicated to analysis work.

The Panel also noted some funding anomalies that are complicating the reorganization of the analysis function. While staff were transferred to OPBFA, most of the funds for analysis were left with the program offices as part of their program funds. As a result, OPBFA must seek funds from the 11 program offices to support its analysis activities. The Panel recommended that EERE consolidate the analysis funds OPBFA needs and present them in the budget as a single line item.[11] This was not done in the fiscal year (FY) 2005 budget, but EERE has advised Academy staff that an effort is underway to do this for the FY 2006 budget.

Communications and Outreach Functions and Funding

The Panel was deeply concerned about the operation of the new C&O office. There was a substantial lack of clarity in the functions the new office was to perform, with expectations varying widely among program offices and the new C&O office. The result was general dissatisfaction surrounding communication and outreach activities. The Panel recommended that EERE seek the assistance of an entity with public affairs experience to clarify the proper functions, processes, and staffing of the C&O office.[12] EERE responded by hiring a new C&O director with extensive experience in the field. She is charged with doing the review that the Academy Panel recommended.

EERE also transferred certain legislative liaison activities from the C&O office to a new Legislative Team reporting to the DAS-BA. The Legislative Team now leads the process for

[8] See Appendix A, recommendation 3.
[9] These activities assess program operations and impact. The program offices perform analyses to assess technologies under development. Responsibility for budget analysis rests with the budget formulation team in OPBFA.
[10] See Appendix A, recommendation 7.
[11] See Appendix A, recommendation 22.
[12] See Appendix A, recommendation 12.

responding to all inquiries from congressional committees. The process to generate responses was cumbersome and time-consuming for both the budget and program offices, and congressional staff have been very concerned about EERE's response time. Program managers and the budget formulation and analysis staffs have indicated that this midcourse correction to the reorganization has reduced the time they spend responding to congressional inquiries, which has provided them with more time to accomplish other tasks. There also are some indications that congressional committee staff believe that the service EERE provides is improving.

C&O has the same funding anomaly that impacts the analysis function—staff were transferred to the new office but funding was not. The Panel made the same recommendation for C&O as it did for EERE's program analysis function—create a separate budget line item.[13] EERE has not progressed in the C&O area to the extent that it has with analysis. For analysis, EERE identified the amount of funds used throughout the agency for those activities. In the C&O area, EERE still needs to identify the funds that should be transferred to C&O. The lack of progress is related to the functional confusion surrounding C&O. Not until the functions are clarified will EERE be able to determine the appropriate funding level for that office.

Board of Directors

EERE is a small organization, but the breadth and scope of its research and deployment responsibilities impact major elements of the Nation's energy system. The reorganization created a Board of Directors to provide the Assistant Secretary expert advice in certain critical areas and to serve as ambassadors—representing EERE to its vast number of stakeholders. The word "Directors" strongly implies an operational role. However, the responsibilities of the Board members appear to include a mix of advisory and operational activities. For example, Board members attend EERE's annual Budget Summit[14] and advise the Assistant Secretary on how to focus EERE's corporate budget. In the international arena, one Board member handles a plethora of crosscutting international issues, including representing DOE at the climate change bilateral agreement negotiations and international efforts related to the hydrogen economy. On June 1, 2004, EERE posted vacancy announcements for two new Board positions—a second senior technical advisor for international activities and a senior technical advisor for financing and investment partnerships. The work of the latter new Board member will focus on the financial aspects of getting new technologies into the marketplace.

The Panel believes that the Assistant Secretary needs high-level expertise to advise him on the management of the organization and the voluminous technical areas that EERE addresses. He also needs experienced senior staff to lead initiatives that fall outside the scope of the programmatic offices. However, the Panel finds the use of the term "Board of Directors" to be misleading from a public management perspective[15] because it implies a body having policy determination, oversight, or decision-making roles over the organization. These roles are not said to be lodged in EERE's Board.

[13] See Appendix A, recommendation 23.
[14] Each April, EERE holds a Budget Summit with senior leadership to determine its emphasis for the fiscal year budget under development.
[15] See Appendix A, recommendation 2.

While the functions the Board members perform are highly valued by the Assistant Secretary and contribute significantly to EERE's effective operations, the Panel is concerned that having the activities that these high-level individuals perform housed within the Board of Directors presents opportunities for organizational ambiguity and raises questions about accountability. The Board members' work intersects the work in the program offices, and Technology Development and Business Administration offices are sometimes required to provide staff support for Board members' projects. The Panel believes that it needs to be clear to everyone, both within and outside EERE, where functions are being performed, how the work of the various organizational entities fits together, and where responsibilities begin and end. The Panel recommended that EERE clarify the Board's roles and responsibilities and create offices, as appropriate, to perform them.[16]

Metrics to Evaluate the Reorganization

The reorganization restructured EERE to better highlight and focus on the research and not the markets EERE serves. A primary goal of the reorganization was to improve EERE's effectiveness and enhance its capability to meet its mission. Throughout this project, the Panel has discussed the need for metrics to evaluate the results of the reorganization and recommended that EERE include an evaluation strategy in its overall implementation plan for the reorganization.[17] EERE's efforts to develop performance indicators to assess the results of the reorganization are discussed in Chapter 6.

A NEW BUSINESS MODEL

In addition to creating a structure that elevated the visibility of its major research areas, a major goal of the reorganization was to provide a framework in which EERE could establish common management practices consistent with the Assistant Secretary's desire to have one way of doing business. This section describes some of initiatives EERE has undertaken to implement its new business model.

Management Action Plan

Because of the speed with which the reorganization was designed and introduced, there were no procedures for operating under the new structure and no plan to develop them.[18] Academy staff brought this omission to the attention of EERE management, which immediately began to develop an implementation strategy for the reorganization—the Management Action Plan (MAP).[19] The MAP set forth 18 Areas of Improvement that needed to be addressed in order to implement EERE's new business model that supported the new organizational structure. EERE modified the MAP as work was completed and new areas needing attention were identified. A list of the current Areas of Improvement is in Appendix E.

[16] See Appendix A, recommendation 47.
[17] See Appendix A, recommendation 6.
[18] A handful of senior officials designed the July 2002 structural model.
[19] See Appendix A, recommendation 1. The process for developing the MAP is discussed in Chapter 6.

The Panel recognizes that coalescing the organization around this task required a significant amount of cultural change within EERE. The Office of Information and Business Management Systems staff did an exceptional job working with the rest of the agency to get the MAP from concept to reality, and EERE top management provided the support and leadership needed for it to become a successful management tool. EERE managers have embraced the need for the MAP, and EERE leadership has indicated it intends to maintain the MAP as part of a program of continuous improvement.

Planning

EERE developed common guidelines for multiyear program planning, and the program offices have now created multiyear plans that are linked to EERE's Strategic Plan and serve as the foundation for their annual operating plans. These plans were a key source of input for the FY 2005 and FY 2006 budget formulation processes.

Strategic Approach to Program Management

In FY 2002, EERE executed 4,400 acquisition/financial assistance transactions. Of those, 40% were modifications involving no change in cost or funding, and 70% obligated only 8% of the total dollars for acquisition/financial assistance. Ninety-five percent of EERE's total FY 2002 transactions were less than $1 million. These relatively small awards were the result of EERE following an acquisition strategy based on seeking broad stakeholder participation. This strategy was critical years ago when EERE needed to build a support base for its very existence. But EERE leadership believes that EERE needs a different approach for how it uses acquisition/financial assistance awards if it is to better meet its mission.

To address this need, EERE created an Area of Improvement in the MAP—work packaging—to develop tailored acquisition strategies for each EERE program to improve application quality, reduce rejection rates, and improve resource use. By April 2004, all program offices had new program-specific acquisition strategies. EERE reduced its major solicitations from 77 to 25. In addition, Golden issued a procurement policy in February 2004 that includes provisions designed to reduce the number of administrative transactions.

Automated Systems

Prior to the reorganization, each sector developed and maintained its own automated program and project management system. Because each system used its own data definitions and software packages, information could not be easily aggregated across EERE offices. Included in the MAP is an Area of Improvement to address EERE's systems problems. Ongoing efforts have been directed toward developing a Corporate Planning System (CPS), using common approaches and reducing the inefficiencies and costs associated with maintaining the multiple program management systems that existed prior to the reorganization.[20] Some parts of CPS are now being used by the program offices and staff are receiving training on the new system.

[20] The CPS is an interim step until a single DOE-wide program/project management system, currently under development, is completed.

Efforts are underway to expand the use of the system throughout EERE. Savings related to this initiative are discussed on page 18.

WORKFORCE ANALYSIS

Prior to the reorganization, EERE staffing was based on the management approaches within the five sectors. Within a few months after it reorganized, EERE leadership initiated a workforce analysis project to better understand issues related to workforce distribution in the new structure and to provide management with accurate information on the EERE workload and workforce.[21]

The result of this project was that each office received:

- an allocation for headquarters staff
- an allocation of staff in Golden or the National Energy Technology Laboratory devoted to each program for project management services[22]
- an indication of how much federal staff can be supplemented by:
    - support services contracts
    - Washington-based laboratory personnel

In addition, each office received a staffing plan that identified by grade and discipline the staff needed to implement its programs, which has provided a basis for EERE to start using position management for its workforce decisions. The staffing plans do not match the current on-board staff. Instead, they set a target that the program managers are expected to manage toward.

Possible Follow-up Work

At the request of the Panel, the CNA Corporation (CNAC), one of the Academy's strategic partners, attended a Panel meeting at which EERE presented its workforce analysis results.[23] CNAC has substantial experience in workforce analysis, and the Panel believed that both the Academy and EERE would benefit from their comments. CNAC representatives and Panel members indicated that EERE should consider building on the workload analysis it has already conducted and suggested three additional analyses:

1. An analysis of how the work is actually performed to help refine what EERE has already done in terms of identifying staffing imbalances.

2. A competency assessment, which federal agencies are increasingly doing in response to the President's Management Agenda. This analysis would help EERE address important workforce planning issues, such as determining whether positions are at the right grade

[21] The process the workforce analysis team used is described in Chapter 6.
[22] See Chapter 3 for a discussion on EERE's project management services.
[23] The CNA Corporation is a nonprofit organization providing expert research, analysis and technical services. It operates the Center for Naval Analyses, a federally funded research and development center serving the Navy and other defense concerns and also operates an Institute for Public Research. In 1993, it was incorporated to perform non-Department of Defense work.

levels (position management), assessing whether EERE has the right workforce to best support its mission, addressing the need for succession planning resulting from the aging of the workforce, and determining future competency requirements.

3. Relating these analyses to EERE efforts to develop one way of doing business. Otherwise, a staffing analysis can easily help perpetuate dated or unduly complex processes.

MAINTAINING APPROPRIATIONS INTEGRITY

The congressional committees with jurisdiction over EERE's appropriations were concerned that the reorganization would blur the distinctions between the two major appropriation accounts that fund EERE. Both subcommittees want the programs funded by the Interior and EWD appropriations to be clearly delineated and the accounting for them to be kept separate.

Academy staff have studied this matter and are satisfied that sufficient accounting controls exist to ensure that both program direction and program funds are kept separate.[24] However, there are some non-accounting issues that still need to be resolved.

Regional Staff Funding

Historically, the Interior and Related Agencies Appropriation Act has funded EERE's regions. But during visits to the regional offices, Academy staff found that a significant and growing workload in the regions relates to EWD programs. The EERE budget officer agreed and notified the House Interior Appropriations Subcommittee of EERE's intention to switch some regional office funding to EWD in the FY 2006 budget. While Academy staff initially advised the budget officer that the level of regional effort in EWD activities could exceed the amount estimated, EERE leadership advised the Panel that it plans to ensure that EWD work in the regions stays within the approved funding levels for those activities.

Program Office Funding

The Panel's review identified programs where offices are funded primarily by Interior funds, but also have a small amount of EWD funding. The Panel recommended that EERE review the activities of those program offices where small amounts of split funding are involved and assess whether they can be realigned in an effort to simplify the funding structure. The Panel further recommended that EERE report to all four subcommittees the results of this review. [25]

EERE reports that as part of the FY 2005 and FY 2006 budget formulation processes, it reviewed the work scopes of the four major programs that have split funding. Based on these reviews, EERE concluded that there were sufficient differences in the work scopes such that continuation of the existing appropriations structure is both appropriate and justifiable. According to EERE, it

[24] In general, program direction funds cover the salary and administrative expenses of the agency. Program funds are used for direct research, development and deployment activities.
[25] See Appendix A, recommendation 18.

has briefed congressional staff on this issue and does not intend to submit a report to Congress on this subject. The Panel still believes, however, that EERE should submit a formal report to the appropriations committees in accordance with the Panel's prior recommendation.

SAVINGS

Implicit in EERE's rationale for the reorganization was the expectation that better business and management practices, as well as greater efficiencies resulting from the consolidation of business administration and communication and outreach functions, would lead to savings. The House Interior and Related Agencies Appropriations Subcommittee staff asked EERE to identify savings resulting from the reorganization and process improvements. However, committee staff have indicated that the savings need not necessarily appear as appropriation reductions. Instead, savings could be redirected to the program offices for their research and development activities. EERE has identified savings resulting from the reorganization in the following areas.

Personnel Costs

The reorganization will result in some savings in staff costs, most of which will be achieved through attrition and lower salary rates as vacant positions are transferred to the field. Over the past two years, in addition to normal attrition from retirements, etc., EERE has used the provisions of the Chief Human Capital Officers Act of 2002 to request either early out or buyout authority. Unlike prior legislation, this Act does not eliminate positions from the agency's full time equivalents (FTE) when employees leave as a result of organizational restructuring. According to an EERE official, in FY 2003 and FY 2004, 25 employees left EERE using these provisions. Some of the vacated positions were redeployed to the field and the headquarters program offices. But EERE has slowed down its hiring to stay 40 FTE under its personnel ceiling in order to manage within its program direction funds. It will be some time before personnel savings resulting from the reorganization can be accurately assessed.

Support Services Contracts

EERE relies heavily on support services contracts to perform its work, but until the reorganization, there were no guidelines for their use or no strategic management of those resources. To address this shortcoming, EERE developed an Area of Improvement in the MAP to develop guidelines for the value-added use of support services and a plan to review their usage throughout EERE. The guidelines were issued in April 2004 and were used to develop the FY 2005 acquisition plans for the program offices. EERE also developed and is implementing a strategy to consolidate all support services under new centralized contracts, which will reduce the costs to manage these resources. EERE estimates that contract consolidations will save about $1.6 million by reducing project management costs and overlapping services.[26]

[26] Part of the savings from consolidation reflects management's new ability to control the use of support services contracts so that offices will no longer be able to exceed the budget estimates for these activities without management approval.

Use of National Laboratory Employees

EERE leadership has had concerns that the program offices' use of the national labs has not been consistent with the labs' role as Federally Funded Research and Development Centers (FFRDC).[27] According to EERE, the program offices have over relied on national labs to perform non-research and development activities, such as facilitating deployment efforts, which the private sector is capable of performing. Also, they have relied on national labs for procurement and project management services due to a lack of such resources internally. Adding to this concern is that, according to EERE, the laboratories tend to be more expensive than other service providers. For example, EERE spends approximately $20 million annually with laboratories to perform subcontracting work.[28] It estimates that two FTEs at the Project Management Center could perform that work at a cost savings of about $176,000 per year.

Included in the MAP are two Areas of Improvement to address these concerns—one to address the appropriate use of Washington-based lab personnel and another to develop a strategy for using national laboratories that is consistent with their FFRDC role. Regarding the use of Washington-based lab personnel, EERE has developed guidance and expectation documents in keeping with DOE requirements that place restrictions on the use of laboratory staff. As a result, there has been a reduction in the use of national laboratory staff—from 58 in FY 2003 to 45 in FY 2004. To address the strategic use of national laboratories, EERE has conducted a pilot program in FEMP to review that office's FY 2004 portfolio to identify laboratory contracts and subcontracts that could be performed by the private sector.[29] The review identified approximately $3.8 million in laboratory subcontracting work that is being transferred to Golden in FY 2004. Golden will award and provide project management services for those subcontracts, which should reduce their costs. EERE will review an additional $10 million of work FEMP plans to fund through the labs in FY 2005 and FY 2006 to determine whether those activities can be moved out of the labs. As these transfers occur, EERE estimates cost savings of $88,000 annually. The Panel supports EERE's efforts to ensure the appropriate use of labs and lab personnel, not simply as a way to save money, but as a good management practice.

Communications and Outreach Activities

EERE contracting staff have identified costs of about $10 million in various communications and outreach activities to convert from national lab to private sector contracts. EERE believes that the private sector is capable of performing this work at a substantially lower cost.

EERE has negotiated a contract with one private entity to consolidate EERE's four existing call centers into one center and to consolidate all of its printed material distribution centers to one center. EERE also is consolidating its web page design and maintenance and conference support services and awarding the resulting activity to one private contractor instead of a laboratory and

[27] FFRDCs have unique research facilities, equipment, and dedicated researchers to perform work that the private sector is incapable or unwilling to perform. FFRDCs are not to compete with the private sector and perform work that the private sector is willing and capable of performing. In the past, the appropriations committees, the DOE Inspector General, and the Government Accountability Office have criticized EERE's use of national labs.

[28] This figure excludes FEMP expenditures.

[29] EERE's Strategic Program Review reported that FEMP spent 70% of its annual program funds with national laboratories.

two other large private support contractors. EERE estimates that it will save about $2 million from these actions.[30]

Replacement of the Legacy Computer Systems

Prior to the reorganization, five separate automated program and project management systems provided service to 210 employees across the agency. Under the Corporate Planning System, EERE provides services to 428 employees, including users at Golden, the regional offices, the National Energy Technology Laboratory, and the National Renewable Energy Laboratory. Using a common system has reduced the inefficiencies and costs associated with maintaining multiple systems. EERE estimates that it will save $125,000/year in operating costs as a result of the systems consolidation.

EERE also has assumed responsibility for providing local area network services to the regional offices, giving them greater access to EERE's common data files. As a result of this action, EERE has reduced its need for the six full-time, on-site contract staff at the regional offices by approximately 40%, resulting in support services savings of approximately $200,000 annually.

Since the July 2002 reorganization, EERE has been working steadily on the initiatives discussed above in order to implement its new business model. The Panel is pleased that EERE has identified savings that can be redirected back to direct program operations. But none of these savings are obvious in the budget justifications EERE produced for FY 2005. The Panel recommended that EERE take credit for its actions and submit a report to the congressional appropriations committees on what it has already achieved in savings and what it hopes to achieve in the future.[31]

[30] A large portion of the savings results from rate differences between laboratories and private sector operations.
[31] See Appendix A, recommendation 52.

CHAPTER 3
PROJECT MANAGEMENT

By any measure, acquisition/financial assistance and project management are core functions at EERE. Obligations for contracts, grants, and cooperative agreements account for most of EERE's budget and effectively supplement its workforce by tenfold. The strategic use of these resources is essential if EERE's 11 program areas are to be successful in developing and deploying the technologies for which they are responsible. Prior to the reorganization, the delivery system for providing acquisition/financial assistance and project management services was fragmented and inefficient. EERE relied on 12 entities within DOE's field structure for those services, but EERE only controlled the Golden Field Office in Colorado, which handled approximately 50 percent of EERE's total program dollars. The 12 DOE field entities have varying expertise and processes, and EERE program offices would "shop around" for a DOE office to do the work for them. Figure 3 depicts the flow of EERE funds to the DOE field entities for acquisition/financial management services.

Because the DOE offices are accountable to other organizations, EERE leadership believed that its programs did not always receive sufficient priority. In addition, the various processes and procedures used by the multiple entities could not be reconciled with EERE's attempts to create one way of doing business. Thus, EERE leadership decided it needed to reduce EERE's dependence on other organizations for these services by bringing the agency's acquisition/financial assistance and project management operations under EERE's control. This chapter explores the evolution of EERE's acquisition/financial assistance and project management activities into what is now the Project Management Center (PMC).

EFFORTS TO CONSOLIDATE OPERATIONS IN GOLDEN

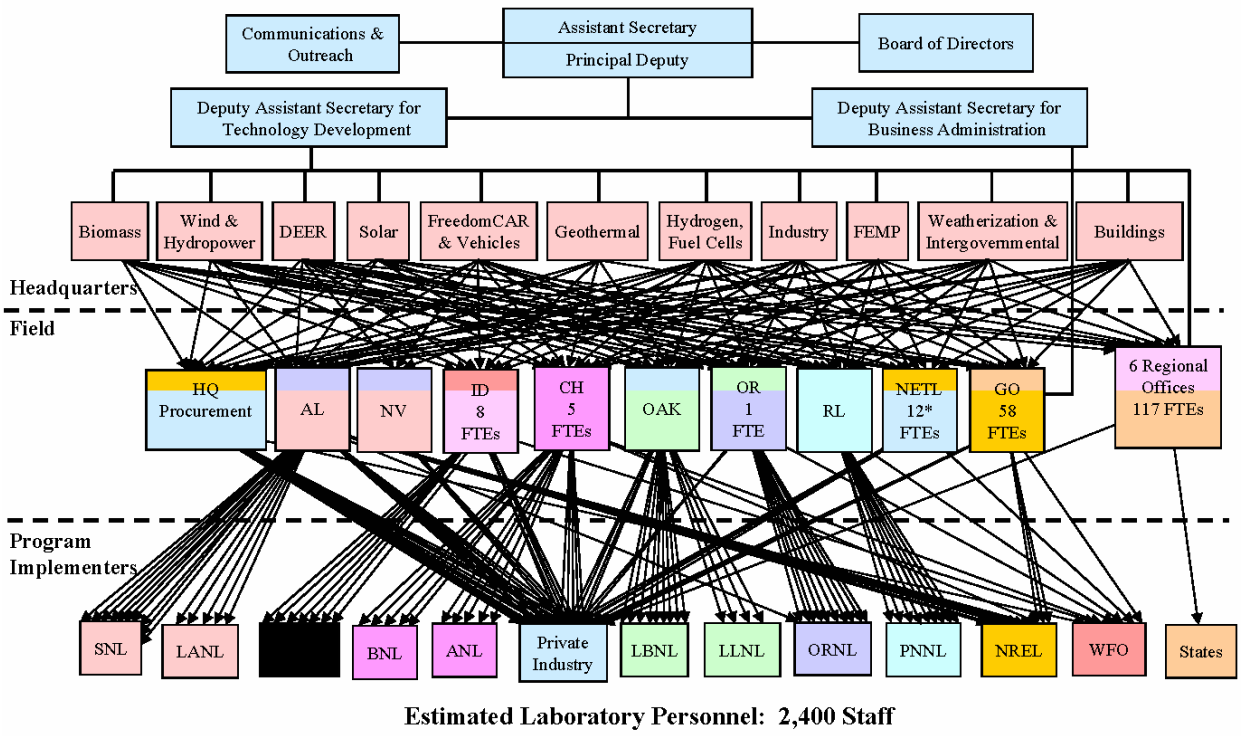
EERE's original plan was to replace its large network of service providers with a Project Management Office (PMO) in Golden. The PMO would award, administer, and perform project management functions associated with all EERE contracts, grants, and cooperative agreements. The Panel concurred with EERE's plans. It believed that consolidating these operations in Golden would afford EERE the opportunity to streamline and standardize these functions, which would lead to efficiencies.

In the summer of 2003, EERE began to transfer to Golden its projects managed by DOE's Idaho Falls,[32] Chicago, and Oak Ridge offices. But the PMO quickly encountered difficulties as many of the basic assumptions about EERE's workload and Golden's resources proved incorrect. Golden received an unanticipated second wave of project management responsibilities when it had to assume responsibility for 78 agreements managed by the National Nuclear Security Administration in the Albuquerque and Oakland offices effective November 15, 2003. Golden also acquired from Albuquerque lab subcontracts that it was not aware of because the DOE

[32] In the case of Idaho Falls, a change in the DOE office responsible for it also required that EERE's work be moved out.

Procurement and Assistance Data System, which houses data on contracts, does not record subcontracts. In addition, Golden was unaware that the five FTEs transferred from Chicago performed only 60% of the workload of the program offices serviced by Chicago. The other 40% of projects were being managed in EERE headquarters. Finally, EERE's assumption about the consistency of work products from the DOE service provider network also proved incorrect. For example, Chicago was not preparing Energy Policy Act statements on some of the awards that required them. Golden was now responsible and had to create them.

Figure 3. EERE Pre-Reorganization Project Management Approach[33]



*NETL non-EERE employees working primarily for EERE
Note: 3,300 actions per year

Many of these problems were a direct result of hasty planning and rushed implementation. Although EERE had increased Golden's FTEs from 54 to 76 by October 2003, the net result was that Golden was still significantly understaffed to assume all of EERE's acquisition/financial

[33] HQ—Headquarters, AL—Albuquerque Operations Office, NV—Nevada Operations Office, ID—Idaho Operations Office, CH—Chicago Operations Office, OAK—Oakland Operations Office, OR—Oak Ridge Operations Office, RL—Richland Operations Office, NETL—National Energy Technology Laboratory, GO—Golden Field Office, SNL—Sandia National Laboratory, LANL—Los Alamos National Laboratory, INEEL—Idaho National Engineering & Environmental Laboratory, BNL—Brookhaven National Laboratory, ANL—Argonne National Laboratory, LBNL—Lawrence Berkeley National Laboratory, LLNL—Lawrence Livermore National Laboratory, ORNL—Oak Ridge National Laboratory, PNNL—Pacific Northwest National Laboratory, NREL—National Renewable Energy Laboratory, WFO—Work For Others (non-DOE entities).

management and project management workload. Staff throughout EERE expressed concerns that Golden was overwhelmed with the additional workload, and EERE leadership realized that it would take years, not months, to find and consolidate the necessary resources in Golden. EERE was forced to develop an alternative that would provide it with available FTE and expertise to complete its work. Fortunately for EERE, the National Energy Technology Laboratory (NETL) was well positioned to offer assistance.

THE PROJECT MANAGEMENT CENTER

NETL is a government-owned/government-operated national laboratory reporting to the Assistant Secretary of DOE's Office of Fossil Energy (FE). NETL already was providing project management services for some of EERE's portfolio, and its federally employed staff could absorb EERE's extra workload. NETL and EERE decided that a partnership would be mutually advantageous and, in September 2003, EERE leadership announced a new plan for EERE's acquisition/financial assistance and project management operations. It created the EERE Project Management Center, which integrated Golden, NETL, the State Technologies Advancement Collaborative (STAC),[34] and EERE's regional offices into a "virtual" center to perform those functions. Figure 4 depicts the flow of EERE funds under the PMC concept.

According to Golden officials, the guiding principle for dividing the work among the participating entities was to assign responsibility where there was the best chance of successfully getting the work done. Golden is responsible for Biomass; Geothermal; Hydrogen, Fuel Cells, and Infrastructure Technologies; Industrial Technologies; Solar Energy; Wind & Hydropower; and the Federal Energy Management Program. NETL is responsible for Buildings Technologies; Distributed Energy Resources; FreedomCAR and Vehicle Technologies; the Biomass Black Liquor program; the Industrial Technologies Mining Industry of the Future program;[35] and the Office of Weatherization and Intergovernmental Program (OWIP). For OWIP's Weatherization, State Energy, and Gateway deployment activities, however, NETL has only contracting officer responsibility. The EERE regions provide project management support for those programs.

By moving to the PMC concept, EERE would not have to seek additional FTEs to get its work done. If provided program direction money, NETL had the authority to hire the additional expertise needed to manage EERE's projects. In addition, by including NETL in the PMC, EERE allayed some concerns within DOE and among congressional staff that EERE and FE have not worked together in the past as perhaps they should.

While the Panel believes that EERE's ability to implement one way of doing business would be optimized if it could develop the PMO in Golden, it recognizes that the PMC, which was an invention of necessity, will most likely be part of EERE's long-term future unless NETL does not perform satisfactorily. With the creation of the PMC, EERE is building a field structure to provide these services in a consistent fashion within EERE's budgetary constraints. The Panel also notes that the creation of the PMC has led to a partnership between EERE and FE that

[34] See STAC discussion later in this chapter.

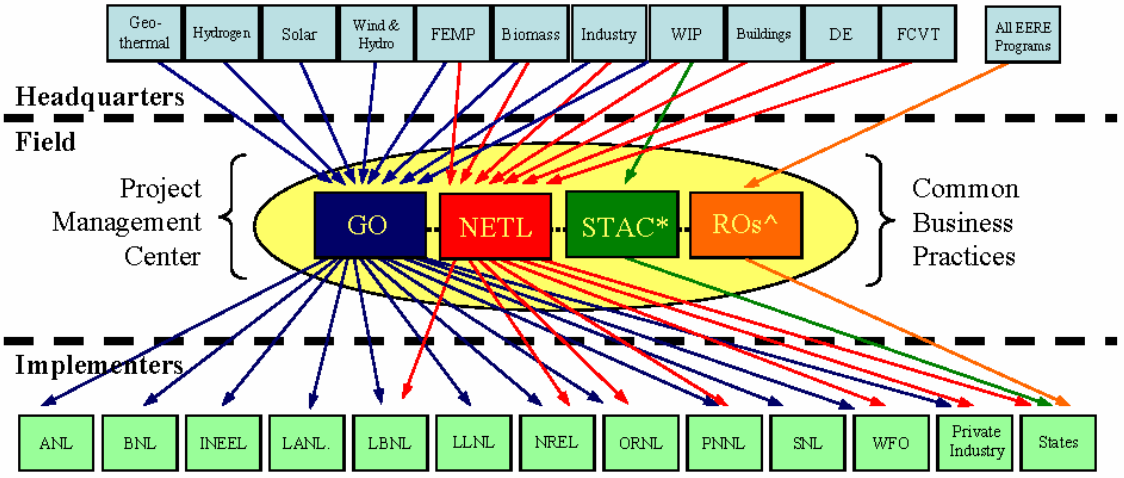
[35] NETL was already managing the Black Liquor and Industry of the Future programs. Golden and NETL determined it was best to leave the work there.

shows promise. The topic of reducing operational stovepipes between agencies is sparking some interest in the federal community. Doing so will require major cultural change in the federal government. EERE and FE could become cultural ambassadors for such efforts within DOE.

IMPLEMENTING THE PROJECT MANAGEMENT CENTER

Although EERE and NETL did not develop a plan to implement the PMC until March 2004, finalize a Memorandum of Understanding (MOU) until April 2004, or secure funding (see below), EERE began to transfer its project management workload to NETL at the end of 2003 under the assumption that the PMC concept would become reality. Initially, EERE had difficulty getting its projects transferred from the various DOE service providers to Golden and NETL. The DOE offices were to transfer EERE's projects by November 15, 2003. However, they did not have the capacity to handle the workload associated with the transfer, so EERE's projects trickled into Golden and NETL. The last projects were transferred to the PMC on March 31, 2004. As a result, many projects did not get the needed project management services, causing problems in getting funds to awarded projects and EERE program offices having to assume some project management responsibilities.

Figure 4. Post Reorganization: The Project Management Center[36]



[36] FEMP—Federal Energy Management Program, WIP—Weatherization and Intergovernmental Program, DE—Distributed Energy Resources Program, FCVT—FreedomCar & Vehicle Technologies Program, GO—Golden Field Office, NETL—National Energy Technology Laboratory, STAC—State Technologies Advancement Collaborative, ROs—Regional Offices, ANL—Argonne National Laboratory, BNL—Brookhaven National Laboratory, INEEL—Idaho National Engineering & Environmental Laboratory, LANL—Los Alamos National Laboratory, LBNL—Lawrence Berkeley National Laboratory, LLNL—Lawrence Livermore National Laboratory, NREL—National Renewable Energy Laboratory, ORNL—Oak Ridge National Laboratory, PNNL—Pacific Northwest National Laboratory, SNL—Sandia National Laboratory, WFO—Work For Others (non-DOE entities).

Golden and NETL have been working together closely to develop procedures for one way of doing business for the PMC, with the goal of having PMC operations transparent to outside customers, i.e., customers should not be able to tell if an award was processed and managed in Golden or NETL. Some of the issues that needed to be resolved included reaching agreement on the merit selection process for awards, developing common reporting requirements for grantees, and resolving system interface issues. Golden and NETL have made great progress toward creating one way of doing business for the PMC and hope to resolve their major remaining differences by the October 1, 2004 target date.[37]

Golden and NETL worked with the program offices to identify the number of staff and expertise needed to effectively manage EERE's projects. Each program office was looking for a different level of service from the PMC based on programmatic needs, office staffing levels, and the capabilities in Golden and NETL. For example, Distributed Energy Resources, with its relatively small staff, has relied heavily on the support it receives from its project management provider. These resource requirements have been factored into the workforce analysis results.

Congressional staff indicated that they want EERE to identify the amount of program funds spent on project management and directed EERE to submit a reprogramming request that identifies the amount needed to reimburse NETL for its services. The $4.5 million request is in the final stages of congressional approval. The Panel believes that it is important that EERE continually assess the resources devoted to project management in order to commit the level necessary to ensure that its funds are being managed to increase the chances for programmatic success. It recommended that EERE analyze the comparative costs of the PMC versus what it would cost to have a consolidated PMO in Golden and develop a resource strategy that assessed the impact the PMC has on program funds.[38]

Program managers whose programs have been transferred to NETL are unanimous in their desire that NETL be a permanent arrangement as long as NETL provides the support they need. The program offices are devoting time and resources to bring NETL up to speed on their programs and want to avoid any disruptions resulting from another shift in project management responsibilities. The House Interior Appropriations Committee staff also cautioned that if EERE's project management workload is transferred to NETL, it should be a permanent change. They do not want to have NETL staff hired and trained to handle EERE's workload only to have to go through a reduction in a few years. Recent interviews with EERE officials reveal that staff are generally satisfied with the service NETL is providing and are optimistic about the PMC's ability to perform in the future.

ESTABLISHING ROLES, RESPONSIBILITIES AND ACCOUNTABILITY

The MOU between EERE and FE outlines the broad construct of the PMC. The roles and responsibilities of EERE and FE are phrased as "expectations of FE" and "what EERE will provide FE," and provide only a general sense of each organization's responsibilities. There is

[37] Some of the issues discussed as needing resolution between NETL and Golden will not be resolved by October 1st. Most importantly, NETL and Golden will not have received any changes to their available FTEs by that date.
[38] See Appendix A, recommendation 43.

nothing in the MOU that describes how EERE will oversee and hold NETL accountable for the services it provides. The Panel believes that this lack of clearly defined roles, responsibilities, and an accountability mechanism is a serious shortcoming in EERE's efforts to create the PMC. It recommended that EERE include in its plan to implement the PMC an action item to address these issues.[39]

According to EERE, the Project Management Operations Guide is under development. It currently consists of all standard operating procedures currently in use by the PMC and a list of areas that require business process reengineering and/or integration. EERE leadership plans to include the completion of the PMC's standard operating procedures as an action item in the FY 2005 Management Action Plan. As EERE and NETL continue to reach agreement on one way of doing business for the PMC, the Guide will be updated.

There is still no indication that EERE is developing an oversight and accountability mechanism for the PMC. EERE leadership has indicated that the program offices will have input into the NETL and Golden project managers' performance evaluations, but nothing has been formalized. The Panel believes customer feedback is an important part of a staff evaluation process and urges EERE to pursue formalizing such a mechanism for the PMC project management staff. However, while such a mechanism may help EERE ensure that it receives quality project management services, EERE has not yet identified how it plans to oversee NETL's acquisition/financial management operations to ensure that common business practices are being followed. The Panel recommended that EERE strengthen its headquarters Operations and Logistics Team, which has procurement responsibility and expertise, to help oversee the PMC.[40] But EERE has no plans to add staff to that office at this time.

The Panel believes that EERE needs to have the necessary mechanisms in place to oversee operations at NETL, and eventually STAC, to ensure that operations conform to EERE's business model and to ensure project accountability. Without such mechanisms, EERE will be unable to effectively manage its programs. The Panel is encouraged that the individuals heading EERE's and NETL's efforts to implement the PMC are experienced government employees, and that they, as well as their staffs, appear to be working together well and are committed to making the PMC successful. But the Panel believes that EERE needs to institutionalize an oversight mechanism for the PMC's operations in the Operations and Logistics Team or other EERE office.

THE STATE TECHNOLOGIES ADVANCEMENT COLLABORATIVE

STAC, a five-year pilot program, is a federal-state intergovernmental agreement between DOE (represented by EERE and FE) and the majority of states (represented by the National Association of State Energy Offices (NASEO) and the Association of State Energy Research and

[39] See Appendix A, recommendation 42.

[40] See Appendix A, recommendation 35. The Operations and Logistics Team reviews all funding requests for consistency with sound acquisition and financial assistance principles. The Team also is the liaison with the DOE headquarters procurement office regarding procurement actions that will be processed by that office. The bulk of the EERE actions processed by DOE headquarters are for support services contractors.

Technology Transfer Institutions (ASERTTI)). It was created in response to the House Interior Appropriations Committee's desire to have the states more involved with federal energy research initiatives and is funded by a set-aside of Interior funds. Congress initially earmarked about $8 million for STAC projects. STAC's purpose is to plan, fund and oversee energy research, development, demonstration and deployment (RDD&D) consistent with the strategies, goals and objectives of DOE and the states; thereby better leveraging federal and state funds, expediting funding for RDD&D projects, and reducing redundancies. STAC is to build on existing, successful programs and is not intended to replace other existing DOE/state initiatives.

NASEO is the "prime" recipient and administrator of funds under the cooperative agreement and will establish, fund, and maintain all project agreements and provide the staff to support STAC's operations. The technical review teams for project awards are voluntary teams comprised of members nominated by NASEO, ASERTTI and DOE. The prime recipient of STAC project awards must be a State Energy Office or a state-chartered institution (such as a university), but there are no restrictions on RDD&D subcontractors. The projects must be multi-state efforts in order to create an exponential effect on the market from the introduction of new technology. There is a 50-50 cost share (federal/recipient) for these awards.

In the past, congressional staff expressed concern that EERE has not worked closely enough with the states and their research and development efforts. EERE leadership hopes that including STAC in the PMC will help improve those working relationships. Although STAC's initial responsibility is for state energy activities funded through the cooperative agreement, EERE leadership has stated that STAC's role in the PMC could increase once STAC demonstrates that it is capable of handling the work. EERE leadership and STAC have talked about what other EERE work might be suitable for STAC to assume, but such plans are premature at this time.

RESULTS AND CONCERNS

STAC has made its first 13 awards, and the contracting process appears to have gone well. The projects involve 31 states and are valued at almost $17 million, with nearly $10 million (58%) provided by recipients in cost share. STAC sought feedback about the application process from its applicants. It was generally positive, although some found the application process to be cumbersome. An interesting benefit from the STAC effort is that a number of applicants indicated that the process has spurred private energy entities to think about how they might use their state energy, environmental, and transportation offices in future efforts.

Although early indications are promising, there are many issues and questions about STAC yet to be answered. As STAC developed the areas to be considered in the solicitation process, it held joint planning sessions with EERE's program offices. According to STAC officials, some programs were more engaged than others. There appears to be a general perception within EERE that thus far, STAC is a tax and not a benefit to EERE's operations. The Panel believes that it is in the EERE program offices' best interest to support the STAC initiative and to take advantage of STAC's willingness to involve them in the planning process. The reluctance of some programs to embrace STAC has caused the Panel to question how the STAC projects are aligned with the EERE program offices' multiyear program plans, which is what they are

accountable for. The Panel believes that EERE leadership should encourage interactions between the program offices and STAC. In so doing, EERE can help ensure that STAC projects align with its programmatic goals.

At present, it is unclear how STAC will execute its project management responsibilities for the awards. Initially, STAC and EERE leadership indicated that EERE's regional offices were going to help provide those services. But trying to establish a formal relationship where federal staff perform work for a nonprofit entity has proven difficult. Instead, STAC officials have informed Academy staff that NASEO staff will provide project management services to STAC projects and that they will rely on the regions for additional voluntary support. Where NASEO/STAC do not have the necessary technical expertise, they will ask EERE's program offices for assistance.

The Panel is very concerned about this situation. Any arrangement to have EERE staff provide voluntary project management support to STAC is not a sound plan for performing this work. It blurs the lines between EERE and STAC with respect to roles and responsibilities for these awards and makes it virtually impossible to establish adequate accountability mechanisms. In addition, to the extent STAC relies on EERE for these services, STAC's reported cost of doing business will be understated. The Panel believes that STAC needs to be responsible and accountable for managing its awards and should have a plan that provides all resources needed for project management. On the other hand, EERE, and Golden specifically, is responsible and accountable for overseeing the cooperative agreement with STAC and ensuring that STAC is living up to the terms and conditions of that agreement. In that capacity, the regional offices may provide valuable project management support to Golden. EERE leadership has advised the Panel of its intent to address the issues that the Panel has raised.

NEXT STEPS FOR THE PROJECT MANAGEMENT CENTER

EERE is proposing the creation of a Financial Management Center (FMC) as the next step for the Project Management Center. This evolution offers a new strategy for restructuring the way EERE's financial services are performed in the field, which EERE leadership believes will have benefits extending to the entire organization.

Currently, Albuquerque and NETL are the primary allotment holders for EERE funds—Albuquerque is the allotment holder for Golden and the regional offices and NETL is its own allotment holder. Under the new proposal, the FMC would serve as the single financial entry point (allotment holder) and exit point (costing) for the PMC.

EERE leadership believes that a single FMC for EERE has many advantages. In keeping with EERE's vision to have one way of doing business and process streamlining, an FMC would allow EERE to consolidate work functions—allotments, costing, payments—into fewer locations, thereby increasing efficiency and reducing costs. Having a single field allotment holder would mean that funds could be transferred between the PMC entities without having a financial plan transfer. Finally, EERE would have greater control and visibility if all funds had a single point of accountability. The flow and accountability of funds would rest with organizations totally committed to the success of the PMC and EERE's mission.

Given the other major financial initiatives being performed at this time throughout DOE,[41] it is doubtful that the organizations that would need to be involved in this initiative could commit the resources needed to make the transition in FY 2004. Therefore, EERE is suggesting that work begin immediately to plan for a transition beginning in FY 2005.

[41] DOE is implementing a new financial management system for the entire Department.

CHAPTER 4
TECHNOLOGY DEPLOYMENT AND THE ROLE OF THE REGIONS

A significant portion of EERE's workforce and budget is dedicated to what it calls "deployment"—activities involved with getting new energy efficient and renewable energy technologies into the marketplace. The Panel has been concerned that, although EERE has published a formal definition of the term,[42] the word means different things to different people throughout the agency. In addition, EERE's use of the term "deployment" is unique to the agency—it is not commonly understood elsewhere. The Panel believes that the lack of clarity surrounding this term is a root cause for a number of problems in EERE.

Regional staff are devoted entirely to deployment activities. EERE's remaining deployment activities are carried out primarily in the Office of Weatherization and Intergovernmental Program (OWIP) and the Federal Energy Management Program (FEMP).[43] These three organizational entities comprise about one-third of EERE's workforce. An EERE staff member estimated that the FY 2004 appropriation for deployment activities was roughly $500 million[44] of EERE's $1.3 billion total appropriation. An issue that has troubled the Panel throughout this project is that there is no EERE-wide strategy for how these resources are used.

Except for their reporting relationship to headquarters, the July 2002 reorganization did not address the regional offices, which constitute over 20 percent of EERE's staff. In October 2003, EERE drafted a proposal to reorganize its regional offices. As noted in Chapter 2, EERE recently established a Senior Executive Service position to oversee the six regional offices.[45] The Director for Regional Office and Deployment Operations (RODO) will report to the Deputy Assistant Secretary for Technology Development (DAS-TD) and will be the official to whom the six regional office directors report.

According to EERE, the new position's responsibilities include:

- developing the EERE deployment strategy that the Academy Panel recommended (see below)
- coordinating EERE activities with the State Energy Advisory Board, a function currently assigned to the OWIP program manager
- serving as the regional point of contract for the Project Management Center

[42] Deployment programs are defined in EERE's *Strategic Performance Review*, Chapter 3, page 3-3. "Deployment programs typically seek to accelerate market introduction of advanced technologies to help meet specific policy objectives. These programs generally address technologies that have recently become cost-effective, or that are moving towards cost-effectiveness in new applications. The types of information provided can include product ratings and labeling, general information about cost-effective opportunities (efficiency, renewable or alternative), and targeted technical assistance."

[43] There also are deployment activities in other offices as discussed in the section "Defining Deployment."

[44] EERE has no official list of all of its deployment activities and their estimated costs. This figure, which includes some earmarked demonstrations and the Weatherization and State Energy Program formula grants, is based on the EERE staff member's definition of deployment, and was developed specifically for use in the 2006 Budget Summit.

[45] The selection process was nearly complete at the time of this writing.

EERE also eliminated the regional deputy director positions and established three GS-14 team leader positions in each region to manage the work of the regional staff. This restructuring will extend to the regions the organizational "flattening" called for in the President's Management Agenda that had been part of the rationale behind the headquarters reorganization in 2002. By reducing the organizational layers in the regions from three to two and clearly identifying management responsibilities on the teams, EERE hopes the proposed reorganization will enable the regions to more efficiently integrate EERE programs with state and local activities and improve the lines of communication between headquarters and the regional teams. While these actions will alter the organization and management of the regions, they do not address what the regions do. According to several EERE staff, the regional offices have been struggling for years to better define their roles and responsibilities.

This chapter discusses EERE's efforts to address issues and concerns related to its technology deployment operations and the role of the regional offices.

DEFINING DEPLOYMENT

Prior to the July 2002 reorganization, deployment activities were spread throughout EERE's five sectors. The four research sectors—Power Technologies, Industrial Technologies, Transportation Technologies, and Building Technology, State & Community Programs—worked with the regional offices to promote their technologies with public and private entities nationwide. FEMP was responsible for promoting the use of energy efficient and renewable technologies throughout the federal government. With the July 2002 reorganization, FEMP's responsibilities stayed the same, but EERE consolidated the management and oversight of much of its remaining deployment activity into OWIP. In addition to the Weatherization and State Energy Program formula grants, OWIP is responsible for EERE's Gateway deployment programs, which facilitate "one-stop" access to a variety of specialized technical and financial assistance through activities such as Rebuild America, Clean Cities, Building Codes Training, and Energy Star.

At the same time, EERE has left the management responsibility for some programs that appear to be deployment in nature with the research and development program offices. For example, the Solar Energy Technologies Program manages Million Solar Roofs, and the Wind and Hydropower Technologies Program manages Wind Powering America. Some program managers have told Academy staff that developing technology involves deployment as well. Others have stated that some of their programs provide technical assistance and outreach to the states, but they do not consider those activities to be deployment. Yet, regional staff use the terms "technical assistance" and "outreach" to describe the work they perform as the deployment arm of the organization. This somewhat confusing situation has resulted largely because there is no common agreement in the agency of where research development and demonstration stop and deployment begins.

Related to deployment are EERE's activities in technology transfer, which is defined as "the process by which existing knowledge, facilities or capabilities developed under federal Research

and Development (R&D) funding are used to fulfill public and private needs….It involves the transfer of knowledge and technical know-how as well as physical devices and equipment."[46] The Federal Technology Transfer Acts of 1995 and 2000 have assigned to DOE's national laboratories a key role for technology transfer.

NEED FOR A DEPLOYMENT STRATEGY

The lack of a common understanding within EERE about what deployment is and the absence of a strategic plan for utilizing the significant resources devoted to deployment activities prompted the Panel to recommend that EERE develop a strategy for its deployment activities that includes a clear definition and goals for those activities and the role of the regions.[47] While EERE leadership agreed with the Panel's recommendation, it has moved slowly to implement it. Technology deployment requires different types of knowledge and skills than research and development, which is the predominant emphasis and focus of EERE headquarters. Although knowledge of technical fields, such as chemistry, physics or engineering, is useful, deployment requires expertise in such things as market analysis, market planning, market conditioning, and demonstration operations. None of EERE's top leadership team has the background or expertise in technology deployment. As such, the Panel believes that EERE does not have the leadership it needs for these activities.

There also is some concern within EERE about making deployment too public an issue. The word itself seems to be a lightning rod. There is an ill-defined, fine line between where the federal government's role in such activities ends and the private sector's responsibilities begin. As such, according to EERE staff, activities labeled as "deployment" fall in and out of congressional favor, which can have serious budget implications. It is, therefore, understandable that EERE leadership may be hesitant to initiate a public debate on the subject.

The ambiguity surrounding EERE's deployment operations has been most seriously felt in its regional offices. Historically, the regions have been without strong leadership in headquarters. Without a clear definition of what deployment is, and lacking a strategy for what EERE wants to accomplish and how, the regions have largely been left to their own devices to seek agreements with the program offices about what should be accomplished each year. Nowhere within the agency has anyone examined the totality of work being done in the regions and assessed how it helps EERE accomplish its mission.

Managing programs to achieve new breakthroughs in energy efficient and renewable energy technologies is why EERE exists and deserves top management's strong support. But unless EERE knows how to identify and cultivate markets for its research and development successes, the fruits of the research it sponsors may sit on a shelf. And unless those efforts fit within an overall strategy, EERE's deployment efforts cannot achieve optimal effectiveness. The Panel believes that, in addition to technology development, deployment of its technology to intended

[46] U.S. Department of Agriculture, Technology Transfer Information Center website, "FAQ, What is Technology Transfer?"
[47] See Appendix A, recommendation 4.

applications is a major business line within EERE and requires the same strategic thinking as its research programs.

RECENT EMPHASIS ON DEPLOYMENT

EERE leadership has demonstrated a commitment to addressing deployment and regional operations by creating the RODO position. The RODO director will be the focal point in headquarters for regional operations. This senior-level position will provide some much-needed leadership to EERE's regional operations.[48] As the supervisor of the regional office directors, the RODO director can develop and oversee regional procedures that promote greater consistency among the regions—the lack of which has been a frustration to headquarters program managers in the past—develop accountability mechanisms appropriate for the regions' role, and identify how and where EERE's technologies are being effectively employed. This position also creates an opportunity to streamline and improve headquarters-regional communications and interactions.

The Panel believes that the success of EERE's deployment and regional activities, as well as the effectiveness of the RODO, will depend to a large extent on EERE establishing strategic goals and objectives for its deployment activities. Top management took a major step to address the need for such a strategy during the day-long, FY 2006 Budget Summit held in April 2004. EERE leadership devoted about five hours of the day to deployment—what it is, how to characterize it, and how best to accomplish it. A senior official indicated that this was probably the first time EERE ever attempted to have a full accounting of its deployment activities.

The Summit proved to be a good starting point, but it did not provide a resolution to the issues surrounding EERE's deployment activities. A major outcome of the Summit, however, was the recognition that an overall EERE technology deployment strategy was needed. Top management also decided that until EERE defined deployment for the organization and developed such a strategy, decisions related to the workforce analysis for OWIP, FEMP and the regional offices would be deferred.

DEPLOYMENT TASK FORCE

Subsequent to the Summit, EERE leadership created a task force to develop a Technology Deployment Strategy for EERE. The target date for completing the effort is November 1, 2004.

The overall objectives of the strategy are to:

- increase the rate of market adoption of EERE technologies through development of a systematic approach to EERE deployment activities in the most efficient and cost-effective manner

[48] The Panel has raised concerns repeatedly about the DAS-TD's span of control, which has impacted his ability to provide the necessary leadership to his organization, particularly the regional offices. (See Chapter 2.)

- understand the critical success factors for technology deployment activities implemented by the federal government
- develop credibility and confidence with EERE's customers and stakeholders to promote the commercialization of advanced technologies and practices

Based on information contained in the task force's action plan, the strategy appears to be quite comprehensive and will address the Panel's recommendations to clearly define technology deployment and the roles and responsibilities of all parties involved with these activities.

Task Force Approach

The task force consists of five people, with two working full time on the project. The team will utilize additional personnel from throughout EERE, NETL and the national labs as required. The initial efforts will focus on gathering information and developing a reliable baseline of current deployment activities, including inventories of projects, successes, problems, issues, and gaps in performance. In addition to EERE staff, the task force plans to interview 50 stakeholders.[49]

According to the task force's action plan, this effort is intended to be an inclusive one. Once the task force develops a draft strategy, EERE staff will have an opportunity to review and comment.[50] The plan also calls for the draft report to be reviewed by stakeholders.

Relationship of the New Board Position to the Task Force's Efforts

As noted in Chapter 2, EERE leadership is in the process of hiring two new Board members. For one of those positions, EERE is looking for someone with expertise in the investor capital community to help EERE think through new technologies from the perspective of how to position those technologies in the marketplace, i.e., what does EERE need to do today to be in the best position to market something in five years? This person will play a major role in helping EERE address the problem of how to effectively move its technologies into the marketplace by obtaining early support from the financial community.

The Panel recommended that EERE analyze the work performed by current and proposed Board members in order to clearly identify their roles and responsibilities.[51] Although not specifically stated in the task force's action plan, EERE officials have told Academy staff that defining the roles of the new Board position and its relationship to the RODO and the deployment strategy will be part of the task force's responsibilities.

POSSIBLE FUTURE DEVELOPMENTS

As noted earlier, the RODO director was to be responsible for developing EERE's deployment strategy. But the need to move forward more quickly with this initiative means that by the time

[49] Prior to her assignment on the task force, the chair was the Acting Program Manager for OWIP. In that capacity, she met with over 200 stakeholders and discussed issues related to the task force's work.
[50] EERE top management will determine the extent to which the draft report will be circulated for comment.
[51] See Appendix A, recommendation 47.

the RODO director is on board, much of the strategy may already be developed. EERE leadership has developed the RODO position, in part, because it recognizes that EERE's regional and deployment operations need someone with the knowledge and expertise to provide leadership to these areas. The Panel believes that EERE leadership should remain open to modifying the task force results once the RODO director has an opportunity to examine EERE's deployment operations.

The Panel believes that establishing the RODO position is a sound organizational decision. Although deployment is the tail end of the research and development spectrum and it is the regions' responsibility to carry out their deployment activities consistent with the headquarters program offices' goals and objectives, the regional activities need a leader in headquarters. However, the Panel also suggested that the roles and responsibilities of the RODO director may need to evolve as EERE better defines clarity of purpose for its deployment activities.

As EERE develops a comprehensive technology deployment strategy, the Panel thinks EERE will need to broaden the RODO's functions to become the focal point for all technology deployment in EERE. It also may be the appropriate organizational entity to serve as a clearinghouse for information on EERE's technology transfer activities. Technology transfer is, and should be, the responsibility of the program offices and the national labs. However, there is no central point within EERE where data on those activities are managed. Several State Energy Offices interviewed by Academy staff indicated that they lack information on technologies that have been or are under development. They believe that if they had that information, the states could play a useful role defining opportunities to deploy new technologies and lessening the disconnect between research and development and marketing.[52]

As the job of the RODO director develops and EERE gains a better understanding of technology deployment within the context of its mission, the Panel also recommended that EERE consider evolving the RODO director into a third Deputy Assistant Secretary position, similar to research and development organizations in the private sector that have their marketing and outreach offices separate from their research units.[53] EERE leadership and several headquarters program managers disagree with the concept of a DAS for deployment. Their concerns are that research, development, demonstration, and deployment are a continuous chain and there needs to be continuous dialogue between those activities to effectively achieve EERE's mission. They believe that having a third DAS for deployment would only reinforce the separation between deployment and the rest of EERE's operations that now exists.

The Panel appreciates EERE's concerns in the matter. Whenever an organization separates functions structurally, there is a danger that the entities will either develop conflicts between them or make no effort to integrate their activities even though such integration is needed for effective operations. However, combining functions structurally can create other obstacles that need to be overcome. Particularly when one function is viewed as secondary in importance, which appears to be the case with EERE's deployment activities, it can get "lost" in the broad

[52] According to one State Energy Office official, because there is no focal point in EERE, the State Energy Advisory Board is trying to develop a matrix of technologies that labs have developed in the past to see how the states can market and deploy them.
[53] See Appendix A, recommendation 49.

scope of an organization's responsibilities. The Panel believes that the unique nature of technology deployment and its importance for meeting EERE's mission may require EERE to elevate its stature within the organizational structure as a major business function equivalent to technology development. Form should follow function. The Panel encourages EERE to examine the possibility of creating a DAS for deployment, depending on the outcome of the deployment task force report.

CHAPTER 5
ACQUISITION AND FINANCIAL ASSISTANCE

EERE carries out its programs through acquisition (procurement) and financial assistance (grants and cooperative agreements). Obligations for acquisition and financial assistance account for most of EERE's budget and effectively supplement its workforce by tenfold. In FY 2003, EERE obligated $305 million through acquisition transactions and another $555 million through financial assistance awards. This chapter describes the acquisition/financial assistance climate when this project started, the major Panel recommendations, EERE's response to those recommendations, and the need for additional actions.

THE ACQUISITION AND FINANCIAL ASSISTANCE ENVIRONMENT

When this study began, 12 DOE entities provided EERE's acquisition and financial assistance services. As discussed in Chapter 3, this service provider network changed shortly thereafter when EERE first decided to consolidate these operations in Golden, then established the PMC, which added the National Energy Technology Laboratory (NETL) as a primary provider for these services. The Academy's task was to develop recommendations to improve EERE acquisition/financial management operations within the new business model that was evolving.

ACADEMY PANEL FINDINGS AND RECOMMENDATIONS

The Panel's review revealed that EERE's acquisition and financial management staff were capable and anxious to do a good job. However, they were hampered by the lack of common business practices throughout the organization and the absence of an annual acquisition/financial assistance planning process that would give them a manageable strategy for awarding the numerous and diverse acquisition and financial assistance instruments that are funded by the 11 EERE program offices. In addition, management and program officials were frustrated by a lack of aggressive processing standards and the various work processes and support levels of the DOE service providers.

In November 2003, the Panel provided its assessment of EERE's acquisition and financial assistance operations, which included 18 recommendations.[54] Although the Panel addressed many different aspects of EERE's acquisition and financial assistance processes, it concentrated on a few major areas.

Becoming a leader in the DOE financial assistance arena. The Panel recommended that EERE pursue being a "laboratory for change" with respect to the award and administration of financial assistance. Unlike most other DOE offices,[55] the bulk of EERE transactions and obligations are grants and cooperative agreements. The Panel believed that EERE should use

[54] See Appendix A, recommendations 24 through 41.
[55] Only the Office of Fossil Energy has a comparable financial structure.

that expertise to become a leader in the DOE financial assistance arena and pilot new, more cost-effective approaches to awarding and administering these instruments.

Acquisition and financial assistance planning. The Panel made several recommendations addressing the need to establish an acquisition and financial assistance planning process. EERE already had a process to develop annual spend plans for each program office. The next step was to develop the procedures and management discipline to ensure that approved spending decisions are implemented through the selection of the appropriate instruments, i.e., contract, grant, or cooperative agreement; and effective and efficient solicitation, evaluation, negotiation, and award processes. The Panel's recommendations also included the need to develop clear lines of authority and responsibility for developing, reviewing, and implementing the process, including making the plan a critical element in the performance standards of EERE managers.

Developing clear outcome statements and appropriate performance metrics. The extent to which EERE uses performance metrics in its acquisition and financial assistance instruments was a major focus of the Panel's review. The Panel recognized that the use of "hard" performance requirements (metrics) for research and development is difficult because of the trial and error nature of research and development. However, the Panel believes that research and development awards should include performance aspirations and incentives related to achieving those aspirations. It also believes that clear project outcomes and associated metrics are as important for financial assistance instruments as they are for contract instruments if EERE wants to focus recipients' attention on the efficiency and effectiveness of project performance. The Panel's recommendation was intended to sharpen the focus on project results by linking project outcome statements to broader program-level objectives and, whenever possible, including performance metrics that the successful recipient included in its application.

Developing improved performance measurement approaches for the National Renewable Energy Laboratory and other DOE laboratories. The National Renewable Energy Laboratory (NREL) works almost exclusively for EERE.[56] EERE's existing performance evaluation methodology for NREL is a traditional, i.e., subjective, award fee process. None of the performance indicators are expressed in terms of predetermined objective metrics. The Panel recommended linking NREL's performance plan more closely to the National Energy Policy and the DOE and EERE strategic plans. It also recommended that the NREL contract's annual performance plan contains more objective metrics that are linked to some specified portion of the award fee pool. The recommendation was geared to strengthening the emphasis on performance results by identifying measurable performance standards and linking them on a predetermined basis to the fees NREL can earn. The Panel also recommended that program offices develop performance metrics and monitoring procedures for the other DOE laboratories used.

Collect and use past performance data. The Panel was very interested in the extent to which past performance was a factor in new awards. While required for contracts, there is no requirement for collecting and using information on financial assistance recipients' past performance as part of award determinations. The Panel recognizes the differences between the principal purposes of acquisition and financial assistance instruments. However, because so

[56] Over 94% of NREL's work supports EERE.

much of EERE's work is carried out through financial assistance, the Panel believes strongly that EERE should send a clear message to financial assistance recipients that "performance matters." It recommended that EERE develop and implement procedures to collect and use information on the past performance of financial assistance recipients as well as contractors.

Streamline and set standards. The Panel recommended that EERE explore additional streamlining possibilities for its acquisition/financial assistance operations. It believed that EERE could benefit by developing simplified competition and evaluation processes for financial assistance transactions below a certain dollar value that are analogous to small purchase procedures for contracts (procurements under $100,000). EERE also could improve its operations by eliminating some higher-level reviews of routine acquisition and financial assistance transactions that unnecessarily delay processing; providing a basis for establishing staff levels for the PMC; and providing a predictable level of service to all customers. The Panel also recommended that both EERE and NETL set aggressive processing standards and determine staffing standards directly related to the type of work being done.

EERE'S RESPONSE TO ACADEMY PANEL RECOMMENDATIONS

EERE endorsed most of the Panel's recommendations and has done a commendable job of detailing implementation steps for the majority of the areas. A summary of EERE actions follows.

Becoming a leader in the DOE financial assistance arena. EERE's response indicates that the PMC is currently on the forefront of change and innovation in DOE with respect to the award and administration of financial assistance and will continue to play a key role within the Department. Golden and NETL have representatives participating as team leaders on DOE's e-Procurement initiative. The scope of this effort covers acquisition and financial assistance planning, pre-solicitation document generation, solicitation development, evaluation, award, administration, and closeout. They also are leading efforts in DOE to develop a new line of business through the Office of Management and Budget's (OMB) grants.gov initiative and are involved in the development of DOE-wide standard terms and conditions for financial assistance and many other initiatives. The Panel is gratified to see the progress that has been made.

Acquisition and financial assistance planning. EERE has made impressive progress to establish an effective acquisition/assistance planning process. It has developed a spreadsheet application that is structured in a logical manner and contains the key data elements to effectively track acquisition and assistance actions. Successful development of major portions of the FY 2005 plan indicates that EERE program and acquisition personnel can work together and use the application to develop a workable baseline. Effective, ongoing implementation of this important initiative depends upon:

- sustained management attention at the highest levels to ensure that actions are tracked and progress is reported
- holding subordinate managers accountable for meeting key acquisition/financial assistance milestones

- clearly understood guidance and procedures that facilitate plan preparation, tracking, and reporting

EERE has produced a proposed standard operating procedure (SOP) that addresses most of these elements effectively. In addition, EERE has advised the Panel that it will include an element in the program and office managers' FY 2005 performance standards that addresses accountability for developing and executing the annual acquisition/financial assistance plan.

Developing clear outcome statements and appropriate performance metrics in financial assistance awards. EERE has produced sound and comprehensive implementation plans to:

- develop a new proposed "Continuation Application and Funding" standard provision that states that continuation funding will not be provided if satisfactory progress toward meeting the objectives of the approved application is not met
- develop requirements for clear program objective statements and how the solicitation will support EERE performance metrics
- create a template for award documents to implement the above provision
- post instructions and provisions on the PMC web-site for contract specialists to use when creating FY 2005 award documentation
- implement a new proposed OMB standard "Performance Progress Report" that includes standard performance measures reporting formats for all financial assistance awards

Developing improved performance measurement approaches for the National Renewable Energy Laboratory and other DOE Laboratories. EERE has completed a detailed review of the alignment of NREL performance metrics with National Energy Policy, DOE and EERE strategic goals, and EERE program goals for the Solar, Wind, Hydrogen and Biomass programs. EERE plans to complete a similar alignment review for the remaining EERE programs at NREL by September 2004.

In addition, EERE has developed a sound and comprehensive plan that provides for:

- implementing an SOP for award fee evaluation of national laboratories (other than NREL)
- implementing an SOP for an annual review of Laboratory Institutional Plans in preparation for the next cycle of reviews
- using the Corporate Planning System (CPS) that contains:
    - monthly funding data for each spend plan by line item, budget and reporting code, appropriation symbol, national laboratory, and awardees
    - current data on project and program milestones
    - streamlining reporting requirements among the laboratories
- issuing guidance to national laboratory staff on standardized reporting

EERE also has advised Academy staff that it intends to pilot the use of two fee-bearing objectives under the NREL contract. One relates to developing transformational hydrogen

production and storage facilities and the other to managing construction of the Science and Technology Facility. The Panel applauds these efforts and hopes that EERE will continue to develop metrics for NREL that are linked as closely as possible to EERE's Strategic plan and corporate metrics for which it is held accountable.

Collect and use past performance data. EERE has submitted a sound and comprehensive implementation plan to ensure that it is in full compliance with all Federal Acquisition Regulations requirements that pertain to collecting and using past performance data for acquisition instruments. In addition, EERE has proposed an implementation plan to champion a pilot for developing a mechanism to assess past performance for financial assistance awards that provides for:

- developing a team of key personnel to develop and oversee the pilot
- developing recommendations for past performance standards
- identifying the key past performance data elements to be evaluated
- developing a past performance database, potentially either as part of the CPS or through the PMC
- presenting results of its efforts to the DOE Office of Procurement and Assistance Management and demonstrating the capabilities of the database
- working with the DOE Office of Procurement and Assistance Management to implement policies and procedures for EERE (and possibly all of DOE) and to address the regulatory issues associated with collecting information

Streamline and set standards. EERE's response contains a detailed plan for a pilot to evaluate and establish staffing standards that includes:

- establishing a team to assess potential workload issues and review measures that can assist in projecting staffing requirements and assessing staff productivity
- conducting an internal self-assessment that analyzes organizational outputs and identifies potential candidates for review, possible drivers for staffing, and alternatives for methodology and measurement
- making recommendations to EERE senior management for the most appropriate and beneficial options
- conducting a pilot that will use and improve upon recommendations made by the team to determine how staffing will be estimated and productivity measured for acquisition/financial assistance
- assessing the pilot results and developing and implementing official staffing standards

In addition, EERE reports that Golden has agreed to adopt NETL's Procurement Action Lead Time Standards that establish procurement lead times for 52 different types of acquisition and financial assistance transactions beginning with receipt of the procurement request and ending with instrument award. For example:

Transaction	Processing Time
Competitive acquisition—$100K to $500K without discussions	130 calendar days
Competitive acquisition—$100K to $500K with discussions	165 calendar days
Competitive acquisition—over $25 million with discussions	230 calendar days
Financial assistance—noncompetitive	120 calendar days
Financial assistance—competitive over $25 million	246 calendar days

In an effort to streamline its operations, Golden has revised its SOP for independent and legal review to reflect an increase in the approval threshold from $300,000 to $500,000 for new awards, continuations, and renewals. EERE also has indicated that efforts are underway to renew a two-year pilot for Golden to simplify financial assistance processing for transactions under $100,000 and that it will develop consistent review and approval requirements for the PMC (Golden and NETL currently have different procedures) during the first quarter of FY 2005. Finally, EERE has changed its approach to making awards by repackaging work for some programs in order to improve the linkage to performance and results and reduce process workloads.[57]

[57] See work packaging discussion in Chapter 2.

CHAPTER 6
CHANGE MANAGEMENT, COMMUNICATIONS, AND FUTURE CHALLENGES

Assistant Secretary Garman's overriding goal for the July 2002 reorganization was to create a single organization with a single purpose—to achieve results in EERE's programs and activities. This would call for more than changing the boxes on the organization chart. It demanded that everyone in EERE reexamine their roles and responsibilities and embrace new ways of doing business. Over the past two years, EERE has embarked on a change management initiative that has affected every aspect of the organization. In addition to a new structure, management has introduced new processes, procedures and systems designed to improve the staff's ability to meet EERE's mission. The prior chapters have discussed the major changes EERE has implemented, problems encountered, and accomplishments that have resulted.

Reorganizations of the magnitude experienced at EERE involve significant cultural change. To successfully bring it about, the change management process itself is as important as the desired end result. Critical to the process is the agency leadership's ability to effectively communicate the vision for the new organizational direction and its willingness to listen to and address employee concerns and encourage discussion of the issues. This chapter examines how EERE has navigated the sometimes-rough waters that accompany the organizational change management process and EERE's communication mechanisms, which are a critical part of that process. It also presents the Panel's final thoughts and recommendations on future challenges EERE must address as it proceeds to fully implement the reorganization.

EERE'S CHANGE MANAGEMENT PROCESS

The Panel commends EERE top management's efforts to reinvent the organization and for making midcourse corrections when the need became clear. However, the Panel has had some concerns with EERE's change management process, especially in the early stages of this study. The process did not always include all the parties that needed to be consulted and resulted in some changes being implemented before EERE had established roles and responsibilities and assessed staff capacity throughout the organization.

Developing the Management Action Plan

EERE management tasked the Office of Information and Business Management Systems (OIBMS) within Business Administration to develop the MAP. However, the Panel was concerned that the Technology Development organization was not actively involved in defining the areas that needed to be addressed or in developing proposed solutions. It urged EERE leadership to engage a wide group of officials in a much more interactive process to finalize the MAP and move forward. It believed that Business Administration needed to intensify efforts to include the Technology Development organization in the process in order to avoid the appearance that Business Administration was driving the change management agenda and to ensure that senior managers across EERE took ownership of the change management process.

EERE heeded the Panel's advice. The process to finalize the MAP became much more inclusive, with Technology Development and Business Administration senior managers having opportunities to review and comment on its content. Academy staff also worked closely with OIBMS staff on an interactive basis throughout the process. It took six months to finalize the MAP as EERE refined the action items to combine like items, eliminate duplication, and develop a systematic follow-up system. But the final result was that the MAP has been used since then as a key management tool to implement the reorganization.

Workforce Analysis

The EERE workforce analysis project started in December 2002. The workforce analysis team was to report to EERE management in June 2003, leading to decisions on reshaping the EERE workforce in July 2003. EERE leadership anticipated that this effort would identify areas where staff could be redeployed. Given the sensitivity surrounding this subject, top management slowed the schedule to allow for more interaction between the workforce analysis team and EERE managers to ensure that the data were accurate and that the offices took ownership of it. However, top management did not define up front its methodology for analyzing the data. Given the level of staff concerns expressed about poor morale, feelings of uncertainty, and a lack of trust that emanated from the reorganization, the Panel recommended that the methodology to analyze the workforce data be inclusive and interactive—involving staff at all levels throughout the organization.[58] The process that resulted was a series of meetings starting in December 2003 and continuing into February 2004 between the DASs and each of the program managers and office directors where the workforce analysis data and its implications for staffing levels were discussed.[59] Each manager was given the opportunity to challenge the data and make his/her case for staffing needs. Several of the program managers indicated that these meetings were the most valuable part of the entire effort.[60]

The Project Management Center

EERE's initiative to take control of its acquisition/financial assistance and project management operations experienced several problems due to inadequate up-front planning. As noted in Chapter 3, when EERE attempted to implement the Project Management Office in Golden, EERE leadership established a timetable for transferring work from the DOE service providers to Golden without adequately assessing the workload or EERE's ability to obtain the necessary resources to perform the work in Golden. The result was a hasty retreat from the Project Management Office concept. Fortunately, a viable alternative, in the form of the National Energy Technology Laboratory, presented itself.

[58] See Appendix A, recommendation 16.

[59] Meetings were not held with FEMP, OWIP, the regional offices, and the Office of Communication and Outreach, pending the results of the deployment task force.

[60] Most of the program managers interviewed indicated that the workforce analysis project was time-consuming and the process took too long. Some questioned the value of the data collection process and thought the meetings with the DASs to discuss their workforce needs would have sufficed.

The Panel was concerned about what it viewed as a pattern in EERE's change management process where proposed changes were not adequately analyzed and roles and responsibilities defined. As a result, it recommended that EERE apply more structure and analytic rigor to the change management process by including a preliminary review stage to ensure that roles and responsibility are established, staff capacity is assessed, and that all affected offices review new organizational concepts before changes are initiated.[61]

The Deployment Task Force

In its latest major change management initiative, the review of its deployment operations, it appears that EERE leadership has addressed the Panel's concerns. EERE has started to move from an organization where decisions are imposed from the top down to one where staff involvement is valued and ideas for change are being generated from the bottom up.

As discussed in Chapter 4, EERE leadership has formed a task force to develop a Technology Deployment Strategy for EERE. Top management has met with the task force to establish a vision and mission for the strategy. The end product will be dictated largely by the information gathered from dozens of interviews with EERE staff and stakeholders. But the task force's action plan also calls for the draft strategy to be circulated widely throughout EERE and its stakeholders for review and comment. This bottoms-up approach, which will examine the roles, responsibilities, staff capacities, and roadblocks to implementing the deployment strategy represents an inclusive, structured, methodical change management effort that the Panel believes will allow for implementation timelines that are reasonable and can be followed.

COMMUNICATION MECHANISMS

Establishing effective communication mechanisms in an organization is always a challenge, and maintaining open lines of communication requires constant attention. Communication must be frequent and two-way, the subjects relevant to the needs of the participants, the environment open and trusting, and the messages clear and understood by all parties.

Since the reorganization was implemented, the Principal Deputy Assistant Secretary and two DASs have met almost daily as part of their daily management routine.[62] During these meetings, current and pending problems are discussed and solutions proposed and adopted. The collegial working relationship that has developed has enabled senior management to lead EERE through the challenges posed by the reorganization. The Panel believes that this collaborative environment needs to be created throughout EERE headquarters and its entire field structure if EERE is to achieve the reorganization's goal of eliminating the stovepipe organizations that the market sectors had become and promoting better interaction and coordination throughout the organization.

Weekly staff meetings are the primary communication mechanism used within EERE. The Assistant Secretary has weekly staff meetings with the DASs, their program and office

[61] See Appendix A, recommendation 54.
[62] Sometimes, the Assistant Secretary attends these meetings.

managers, regional office directors, and several other senior staff positions. The DAS-TD has weekly staff meetings with the program managers and regional office directors and a separate weekly meeting with key regional office staff. The program offices also have regular staff meetings. The Panel believes that these staff meetings are an important part of an effective corporate communication system. However, staff reported that the information flow during these meetings is often downward, the agendas often do not include issues they would like discussed, and there is no formal record of what was discussed, the issues raised, and decisions made. These information-sharing meetings also are often not the appropriate forum for managers to discuss specific operational or personnel-related issues.

Recently, EERE leadership began a new Thursday staff meeting—Management Challenge's meeting—with program managers and office directors.[63] The meeting is for principals only and no substitutes or other staff can attend. These meetings are scheduled when the leadership believes there are specific management issues that need to be discussed among senior staff. The first few such meetings were devoted to the workforce analysis effort.

The Management Challenges meetings offer EERE an opportunity to build a more collaborative management team. Unlike the weekly staff meetings that have been taking place, which are primarily for information sharing, the Thursday meetings will provide a forum where EERE senior managers are part of the process to discuss and resolve issues facing the entire organization. The Panel believes that the working relationships and sense of teamwork that such interactions create may carry over into other aspects of EERE management practices and help reduce the stovepipes surrounding EERE's research areas. According to interviews with senior staff, it appears that these meetings are helping improve communication among EERE's management team.

The reorganization and resulting new ways of doing business have forced changes to EERE's organizational culture. The independence and relative autonomy of the sectors have been replaced by an organization where the offices are expected to and, in some cases, must rely on one another to accomplish their mission. Roles and responsibilities have been and continue to be redefined, and there is an increased emphasis on mission achievement and holding staff accountable for results. The Panel believes that these changes are moving EERE in a positive direction. But the suddenness and magnitude of the changes resulting from the reorganization caused widespread concern among EERE staff. Many staff were unsure about where they fit into the new organization; others were slow to accept the far-reaching changes envisioned by EERE's leadership.

The Panel recognizes that major organizational change often causes morale problems, but cautioned top management that poor morale, if not addressed, could reduce the reorganization's effectiveness and work against efforts to elicit support for sustaining the changes that had taken place. The Panel believed that some of these issues could be managed through better communication mechanisms throughout the organization. It recommended that EERE leadership develop some simple mechanisms to keep EERE staff current on the status of the reorganization's implementation and to obtain staff feedback to help ease their concerns; provide

[63] Top management also is having similar weekly meetings with the Golden and NETL managers and the regional office directors.

an opportunity for staff to recommend ways to fine-tune EERE's new business model; and build support for the change effort.[64] The Panel further emphasized that the organizational climate in EERE needed to be built on trust. The Panel believes that EERE has made progress in this area. Interviews indicate that morale in EERE appears to be improving and that staff have accepted the reorganization and the changes that have ensued. But the Panel also believes that EERE needs to explore other avenues to facilitate communications throughout the organization. Particularly in times of major organizational change, EERE leadership needs to keep staff well informed about new ideas and directions that will affect them.

Finally, the Panel believes that good external communication mechanisms are equally important. EERE relies heavily on outside entities—public and private—to achieve its mission. Program managers have indicated that they believe their communications with stakeholders and partners are working well. But these exchanges revolve largely around technical issues. The Panel believes that EERE also needs to ensure that stakeholders are kept adequately informed about new changes in policy and direction. A regular, consistent communication mechanism that keeps EERE stakeholders advised of corporate management issues affecting EERE's operations still appears to be lacking. The Panel believes that the new Communications and Outreach director may help improve these types of communication with its external stakeholders.

FUTURE CHALLENGES

Sweeping and successful organizational change is incredibly difficult to accomplish under any circumstances, but in two years, EERE has made significant strides to reinvent how it does business. However, much still remains to be done. The progress EERE has made must continue and intensify for the goals of the reorganization to be fully achieved. For example, the coordination and collaboration among program offices, which was a major goal of the reorganization, has not been achieved to the full extent envisioned. Although encouraged by top management, there are no formal mechanisms that bring together program office staff to explore areas where they can and should work together. Rather, collaboration among the program offices seldom occurs except when it is initiated by the offices at the program manager or staff level. Likewise, the services provided by the consolidated Business Administration offices and the relationships between the business and program offices, while significantly improved over the past two years, still need further improvement in some areas. Among the various challenges that lay before EERE, the Panel believes that the following are most important.

Metrics to Evaluate the Reorganization

As noted in Chapter 2, the Panel believes that the success of the reorganization will be determined over time by how it has better enabled EERE to meet its mission, and recommended that EERE develop a strategy to evaluate the results of the reorganization. In June 2004, EERE hosted a one-day workshop on developing management efficiency measures. EERE and the Academy also co-sponsored a one-day workshop to begin the process of developing indicators of program/project management effectiveness to help assess how the reorganization has/will impact EERE's ability to manage its programs. Participants for both workshops included

[64] See Appendix A, recommendations 17 and 53.

representatives from EERE program and business offices, the PMC, DOE, and Academy Panel and staff. By the conclusion of the workshops, the participants developed ideas concerning over 70 possible indicators covering a wide range of EERE programmatic activities.

Panel members attending the workshops were impressed with the EERE staff's high level of involvement and energy during the workshops. They appeared to have a genuine interest in generating ideas about how to evaluate the effectiveness of the reorganization. The workshops are an example of how EERE is evolving into an organization where change management is a major top management priority that involves the entire management team. But much work is now required to build on the ideas generated and establish specific indicators.

The Panel believes that EERE leadership needs to make it a management priority to continue the process of identifying indicators to assess the results of the reorganization. It should not miss the opportunity to build upon the momentum created during the workshops to complete what it has started. As EERE continues with its efforts, it may identify additional ideas that can lead to appropriate indicators. A senior official also indicated that EERE may use some of the ideas from the workshop to revise the MAP as part of its continuous improvement program.

The Panel recommends that EERE leadership include in the Management Action Plan an area to continue the process to develop indicators of program management performance and effectiveness that can be used to assess the results of the reorganization. It also recommends that EERE select some of the ideas generated during the efficiency and effectiveness workshops to focus on as part of its continuous improvement program.

Defining Roles, Responsibilities and Accountability Mechanisms

Clearly defined roles and responsibilities and mechanisms for holding staff accountable are essential ingredients to an effective organization. Several times during this study, the Panel found instances where EERE had not addressed these management elements before it implemented organizational changes. A recurring recommendation from the Panel has been that EERE clarify roles and responsibilities and develop accountability mechanisms for its new business model. The Panel believes strongly that EERE must address these basic management principles both for initiatives already underway and before implementing new changes. Unless this is done, the effectiveness of the new organization will be diminished.

The Panel recommends that as EERE continues efforts to implement the reorganization, it include in its implementation plans action items for both existing and new change management initiatives to define and clarify roles and responsibilities and create mechanisms to hold staff accountable for new processes and procedures.

Acquisition/Financial Assistance

EERE has responded positively to many of the Panel's recommendations to improve its acquisition/financial assistance operations. Of particular interest to the Panel is EERE's decision

to use performance metrics and past performance information in its financial assistance award decisions. EERE has produced plans to develop program and project outcome statements and appropriate performance metrics in its financial assistance awards and to use past performance in financial award decisions, but the plans have not yet been implemented.

The Panel recommends that EERE move forward quickly to use performance metrics and past performance information in its financial assistance award decisions.

The Project Management Center

The NETL and Golden elements of the PMC seem to be coming together. However, STAC is still an uncertain part of the PMC equation. STAC has made its first awards and the contracting process appears to have gone well. Even with this early success, however, there are still a number of major questions about how STAC will operate and be held accountable for its work. Currently, EERE has no way to evaluate STAC's performance or hold it accountable other than assessing how quickly STAC is able to award projects. The draft implementation plan for the PMC does not address the details of STAC's operations and interactions with EERE. Recent changes concerning the EERE regions' role in STAC project management raise additional questions about how STAC will oversee its projects and what the cost of those activities will be.

The Panel recommends that EERE obtain independent outside expertise to evaluate STAC including its processes; the quality of its awards and how they further EERE's mission; its project management capabilities; its cost of doing business; and EERE's mechanisms to hold it accountable.

Developing EERE's Deployment Strategy

The Panel believes that defining and developing a strategy for deployment in EERE is perhaps the most critical piece of the reorganization that still needs to be addressed. This aspect of EERE's operations has languished from a lack of clear direction and management oversight. The deployment task force appears to have a sound grasp on what needs to be done. It plans to cover the full range of deployment activities in its review and make the process as inclusive as possible. The Panel supports the task force's plan. However, it believes that EERE needs to include technology transfer as part of the deployment activities being examined.

The task force plans to interview a large number of stakeholders. But because EERE's work impacts major elements of the Nation's energy system, EERE's stakeholder community is vast. Stakeholders also appear to take great interest in EERE's operations and want to have a say in EERE initiatives that will affect them. The task force plans to provide its draft strategy to EERE stakeholders for comment. In doing so, the Panel believes that EERE needs to ensure that the process assures its stakeholder community that it has been heard.

The Panel recommends that the deployment task force (1) include issues related to technology transfer as part of the deployment strategy, (2) convene a forum of stakeholders to obtain input on its draft strategy before it is finalized, and (3) assess

the organizational implications of its recommendations to ensure that the management of these functions is properly positioned within EERE and that management accountability is ensured.

APPENDICES

APPENDIX A: Status of EERE's Actions in Response to Panel Recommendations

APPENDIX B: Energy Efficiency and Renewable Energy Programs

APPENDIX C: Project Panel and Academy Staff

APPENDIX D: Individuals Interviewed or Contacted

APPENDIX E: Elements of the Management Action Plan

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
1	Develop a management action plan to implement the reorganization.	Done	EERE issued a Management Action Plan August 26, 2003 and updated it February 2004.
2	That (1) the positions of departing Board members not be refilled until EERE has a definite, agency-wide function in mind for such a high-level group of staff and (2) that a name be devised for this group that is more aligned with its actual roles and responsibilities.	None	EERE requests reconsideration. (See also recommendation # 47.)
3	That EERE appoint a budget officer who can ensure consistency between budget formulation and execution, and is empowered to act as EERE's spokesperson on all issues related to the budget.	Done	EERE appointed a budget officer and transferred budget execution to the office performing formulation. EERE leadership has empowered the budget officer to be EERE's representative/liaison on budgetary matters.
4	That (1) EERE amend its Action Plan to add an Area of Improvement to develop a strategy for its deployment activities, including a clear definition and goals for those activities and the role of the regions, and (2) based on the resulting deployment strategy, decide whether a name change for the Office of Technology Development is appropriate.	Begun	EERE has established a task force to address this issue, announced plans to establish a position for Director of Regional Office and Deployment Operations, and reorganized the regions. EERE also has reviewed deployment programs during the 2006 Budget Summit.
5	That EERE designate a manager closely aligned with EERE's leadership to be responsible for monitoring and coordinating the ongoing reorganization implementation efforts. The Panel suggests that the Assistant Secretary assign the Principal Deputy Assistant Secretary that responsibility.	Done	The Principal Deputy Assistant Secretary has been given this responsibility and monthly reviews are being held. Some senior managers report that the process has resulted in improved communication.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
6	That EERE include an Area of Improvement in its Action Plan to develop an evaluation plan that includes metrics for assessing the results of the reorganization.	Begun	EERE and the Academy have cooperated in the conduct of two metrics workshops that should lead to the development of the evaluation plan and associated metrics. EERE plans to include this in its next version of the Management Action Plan.
7	The Panel recommends that the new budget officer ensure that the analysis and formulation teams are separated to help shelter the analysis staff from the day-to-day activities of budget formulation.	Begun	The budget officer is separating the work of the analysis and formulation staffs as much as possible, although some overlap will continue for some time.
8	That as part of its overall review of staff skills in EERE, top management examine the skills of staff transferred to the two budget functions and determine whether any adjustments are needed in assignments or whether training would be beneficial.	Begun	The budget officer believes that while the Panel's original assessment was correct, the passage of time has resulted in the inexperienced staff developing some new skills, knowledge, and abilities. That development, along with training, should correct the situation.
9	That EERE consider transferring the responsibility for formulating the program direction budget to the budget execution staff who monitor those funds.	Done	The new budget officer agrees with the intent of this recommendation. Rather than transfer full responsibility, however, he has decided to establish a team consisting of both formulation and execution staff to develop the program direction budget.
10	That EERE include in its Action Plan an Area of Improvement to study formal and informal collaboration mechanisms and develop recommendations for use within the organization.	Begun	While EERE has not begun a formal study of formal and informal collaboration, it believes that the senior management meetings it has instituted and the training given to staff are sufficient to promote interactions and collaboration. These meetings may promote greater collaboration. (See recommendation # 53.)
11	That EERE examine each of its program office to assess the program managers' span of control, and allocate additional management capacity to program offices as necessary.	Done	The Buildings Program is getting two supervisors. EERE believes no more are warranted at this time However, top management remains open to further changes in the future.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
12	That EERE seek the assistance of an entity with public affairs expertise to clarify the proper functions, processes, and staffing of the Communications and Outreach office.	Begun	Rather than seeking a contractor, EERE has appointed a new director with extensive experience to review and reshape the office.
13	Regarding EERE staff, that EERE proceed expeditiously with the process and procedural changes that have the most potential for helping it better achieve its mission while enhancing potential savings accruing from the consolidation of functions.	Begun	EERE is issuing new staff and position guidance to most offices as a result of the workforce analysis effort.
14	Regarding non-staff savings, that EERE place a high priority on completing the Areas of Improvement in the Action Plan that have the most potential for enhancing mission accomplishment while achieving cost savings, and develop proposals for the appropriations committees on possible uses for those savings.	Begun	EERE has revised its Action Plan priorities and has already identified substantial savings.
15	EERE include in its fiscal year 2005 budget justifications an explanation of the staffing level and grade changes that have occurred since the reorganization was put in place.	None	EERE stated that it intended to do this as an addendum to the justifications. However, no action has been taken. EERE intends to include this as part of its FY 2006 presentation.
16	EERE develop a methodology to analyze the workforce analysis data that involves the staff throughout the process, including the development of strategies to address workforce needs and close staffing gaps identified during the process.	Begun	EERE developed an interactive process to analyze the workforce data and completed its workforce allocation for most offices.
17	EERE develop a mechanism for staff to communicate upward their thoughts and concerns without fear of retribution, and to receive management's feedback on the issues raised.	Begun	According to recent interviews, a "Thursday Management Challenges Meeting" for principals only has improved communications. (See also recommendation # 53.)

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
18	EERE review the activities of those program offices where small amounts of split funding are involved and assess whether they can be realigned in an effort to simplify the funding structure. EERE should report to all four subcommittees the results of this review and the rationale for maintaining jointly funded offices.	None	EERE does not intend to develop this report. EERE states that it has reviewed the affected programs and believes that no change is warranted at this time.
19	For those situations where EERE is requiring definitive scopes of work, a spot check system should be established to ensure that proper Budget & Reporting codes are used for various activities.	Done	EERE provided additional information on the processes used to ensure the proper use of codes and believes no further action is necessary. The Panel concurred.
20	EERE develop and implement a system to periodically determine the time non program-specific staff spend working on Interior versus Energy and Water Development activities in order to more accurately calculate program management/program direction funds chargeable to each appropriation account.	Begun	EERE provided additional information on this issue and believes no further action is necessary. The Panel concurred. However, EERE is reviewing the work of regional office staff for possible split funding determinations.
21	EERE include a separate "Analysis" section in its 2005 budget justifications explaining the funds needed for the three types of analysis, the offices using those funds, and for what purpose.	Begun	Initially, EERE stated that it planned to submit supplementary material to Congress. This was not done. However, EERE is looking at this issue for treatment in the 2006 budget.
22	The 2005 budget include an appropriation restructuring proposal for both Interior and Energy and Water Development funds to provide a separate line item for the "Analysis" function.	Begun	EERE proposed to include this in the 2005 budget, but stated that it was deleted at the DOE level. EERE plans to make the proposal again.
23	EERE include a separate "Communications and Outreach" section in its 2005 budget justifications detailing the use of communications funds in 2004 and proposing, for 2005, an appropriation restructuring for both the Interior and Energy and Water Development accounts to provide a separate line for office level communications and outreach activities.	Begun	Data are not yet available to calculate the communications and outreach budget. If it is available, EERE plans to include it in the 2006 budget.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
24	EERE's acquisition/financial assistance environment should pursue being a "laboratory" for innovation and change related to the award and administration of financial assistance. The goal should be to develop more effective ways of doing business in areas that are constrained by DOE's Financial Assistance Regulations.	Done	EERE cited several areas where it has been involved in DOE-wide financial assistance improvement efforts.
25	Implement an annual acquisition and financial assistance planning process that produces an annual plan sufficiently in advance of the fiscal year to allow for the timely and orderly award of all EERE funded instruments.	Done	EERE has developed a FY 2005 plan for new awards.
26	Establish clear lines of authority and responsibility for developing, reviewing and implementing the annual acquisition/financial assistance plan.	Begun	A draft SOP that addresses this recommendation is under consideration.
27	Include acquisition and financial assistance plan execution as a critical element in the performance standards of EERE managers.	Begun	EERE has advised that it will include an element that addresses procurement plan development and execution in the managers' FY 2005 performance standards.
28	Include clear program and project outcome statements and (whenever possible) associated performance metrics in each EERE financial award.	Begun	EERE agreed with the concept and developed a sound plan for its implementation.
29	Modify the provision that is entitled "Continuation, Renewals and Extensions" to clearly identify the role metrics will play in EERE follow-on funding decisions for financial assistance actions.	Begun	EERE has drafted a new proposed "Continuation Application and Funding" standard provision. This item should be considered "Done" when the directive mandating the use of the provision is issued.
30	Ensure the National Renewable Energy Laboratory (NREL) contract's annual performance plan describes the relationship between the broad programmatic objectives contained in the National Energy Policy, DOE and EERE's Strategic Plans, and the critical outcomes that will be evaluated.	Done	Academy staff reviewed EERE's detailed table that reflects program alignment for major program areas (68% of the EERE NREL funding).
31	Develop more objective metrics for the NREL contract's Performance and Evaluation Plan and link them to a defined portion of the award fee pool on a predetermined basis.	Begun	EERE plans to pilot the use of two fee-bearing objectives. EERE modified the second evaluation period of the FY 2004 NREL contract to include specific, fee-bearing performance objectives for the Hydrogen Program. Additionally, EERE has developed a specific fee-bearing objective for the Science and Technology Facility construction project that will be added in FY 2005.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
32	Require each program office to implement a sound set of performance standards/metrics and monitoring procedures for each DOE laboratory that it uses.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.
33	Ensure that past performance is properly considered in acquisition decisions by requiring Golden Field Office to fully implement requirements related to the collection, verification, and recording of contractor past performance information.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.
34	Develop and implement policies and procedures for the collection and use of information regarding past performance under financial assistance.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.
35	Strengthen the Operations and Logistics Team by adding one or more experienced acquisition and financial assistance specialists and providing training to existing staff to enhance their capabilities to assist programs clients.	Begun	EERE has no plans to provide additional staffing at this time. However, EERE will review staffing needs on an annual basis and make appropriate adjustments. Training plans have been developed for the Operations and Logistics Team, and training commenced as funding became available. No-cost training in financial and procurement-related areas is being provided to staff.
36	Golden & NETL—Establish staffing standards that (1) directly relate to the types of acquisition and financial assistance transactions Golden awards and administers, and (2) that can be used to project staffing requirements as well as assess staff productivity.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.
37	Golden & NETL—Acquire an automated system that (1) tracks acquisition/financial assistance transactions from receipt of the procurement request to execution and, (2) provides Golden managers and customers with query and reporting capabilities concerning workload volume and status.	Done	EERE is working with the I-Manage and eProcurement teams on a DOE-wide system. In the interim, the annual procurement planning spreadsheet application will provide the capability to track key acquisition/financial assistance milestones.
38	Golden & NETL—Develop aggressive processing times for all types of acquisition and financial assistance transactions that start with initiation of the procurement request through award of the instrument.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
39	Golden & NETL—Communicate processing standards to the program customers, and monitor actual processing times to identify problem areas and targets for streamlining.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.
40	Simplify the competition and evaluation requirements for financial assistance transactions below a certain dollar threshold (e.g. $100,000).	Begun	Efforts are underway to renew a 2-year pilot that the Golden Field Office initiated to streamline financial assistance transactions under $100,000.
41	Examine all situations that impose a higher-level review and approval requirement during the acquisition and financial assistance cycles and eliminate any unnecessary requirements.	Begun	EERE has agreed with the concept and developed a sound plan for its implementation.
42	EERE revise its plan to implement the PMC to include an action item to develop standard operating procedures for the PMC that establish the roles and responsibilities of the PMC participants, mechanisms to oversee PMC operations, and the means to hold it accountable.	Begun	EERE and NETL are working toward developing one way of doing business for all processes by Oct. 1, 2004. The Project Management Operations Guide includes all SOP's and procedures currently being used by the two organizations and a list of areas that require business process reengineering and\or integration. EERE plans to include an item in the FY 2005 Management Action Plan to complete the revisions to the PMC's SOPs. The Panel has not seen any documents dealing with the accountability issue.
43	EERE develop a resource strategy for the PMC that addresses the resource availability for the PMC, includes an analysis comparing the cost of doing business using the PMC structure with doing the work all in Golden, and ensures that EERE offices receive comparable levels of service from all elements of the PMC.	None	The Panel has not seen any evidence of such a strategy.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
44	As part of its implementation plan for the PMC, EERE clearly define the project management role of the regional offices for STAC projects and develop metrics to assess STAC's performance within the context of EERE's strategic mission and hold it accountable.	None	Although EERE has stated its intention to address these issues, nothing has been done at this time. The Panel's final recommendation to evaluate STAC should include these issues.
45	EERE revise the format of the Management Action Plan reports to include information on progress made between reports.	Done	EERE staff make a presentation every month on changes occurring between reports.
46	EERE adopt a program of continuous improvement and institutionalize the management tools and processes needed to ensure that the progress resulting from the Management Action Plan and the change management process that has evolved continue into the future.	Begun	EERE leadership has decided to maintain the Management Action Plan as part of a program of continuous improvement. Ideas generated at a joint Academy/EERE metrics workshop will help generate future action items.
47	EERE conduct an analysis of the work performed by current and proposed Board members, clearly identify their roles and responsibilities, and create the appropriate office(s) with the necessary resources to carry out those functions.	None	EERE does not intend to change its practices with regard to the Board of Directors. (See also recommendation # 2.)
48	EERE clearly define the roles and responsibilities of the Regional Office and Deployment Operations position and ensure that it has the resources needed to effectively carry them out.	Begun	EERE has established a task force to develop a deployment strategy. This effort will help define the roles and responsibilities of the new position.
49	EERE begin planning for the eventual transformation of the Regional Office and Deployment Operations position to become the focal point for all of EERE's technology deployment activities and a clearinghouse for information on its technology transfer activities.	None	EERE disagrees with this recommendation. The Panel suggested that EERE reconsider the future of this position based on the deployment task force report.

Status of EERE Actions in Response to Panel Recommendations

	Recommendations	Actions	Academy Staff Comment
50	EERE leadership review the Panel's reactions to the EERE procurement staff response on the acquisition and financial assistance recommendations and submit its response to the Panel.	Done	EERE leadership submitted its response to the Panel on July 12, 2004.
51	EERE develop an implementation plan to address the recommendations in the Panel's November 2003 *Assessment* and provide the plan as well as the additional information the Panel requested in this section of the document by June 30, 2004.	Done	EERE leadership submitted its response to the Panel on July 12, 2004. The Panel's assessment of specific recommendations is reflected in items 24-41 above.
52	EERE develop and submit to the congressional appropriations committees a report on what it has achieved in savings resulting from the reorganization and the type of savings it hopes to achieve in the future.	Begun	EERE staff is developing a document on this subject for the Academy. It is not clear whether EERE also plans to send this document to the congressional appropriations committees.
53	EERE top leadership explore with senior managers additional steps that might be taken to improve communication mechanisms, formal and informal, throughout EERE.	Begun	According to recent interviews, new Thursday staff meetings for principals only have improved communications among EERE managers.
54	EERE leadership institute a preliminary review stage in its change management process to ensure that roles and responsibilities are established, staff capacity is assessed, and that all affected offices review new organizational concepts before changes are initiated.	Begun	While no formal change has been made, EERE actions to conduct its workforce analysis and establish its deployment task force reflect a noticeable improvement to its change management process.

Energy Efficiency and Renewable Energy Programs[65]

BIOMASS PROGRAM

The Biomass Program develops technology for conversion of biomass (plant-derived material) to valuable fuels, chemicals, materials, and power to reduce dependence on foreign oil. The program includes major initiatives for developing and improving technology for biomass power; making biofuels such as ethanol (from biomass residues as well as grain) and renewable diesel; making plastics and chemicals from renewable, biobased materials; and fostering the growth of biorefineries.

BUILDINGS TECHNOLOGIES PROGRAM

The Buildings Technologies Program works to improve energy efficiency of both residential and commercial buildings through innovative new technologies and better building practices. Energy-efficient buildings use less energy and cost less to operate, saving money for homeowners and businesses alike. The program conducts research and development on technologies and practices for energy efficiency, working closely with the building industry and manufacturers; promotes energy and money-saving opportunities to builders and consumers; and works with state and local regulatory groups to improve building codes and appliance standards.

WEATHERIZATION and INTERGOVERNMENTAL PROGRAM

The Weatherization and Intergovernmental Program works through regional and state energy offices to deliver programs and services, including grants for increasing the energy efficiency of dwellings occupied by low-income Americans. The program has partnered with state and local energy organizations, such as the National Association of State Energy Officials, the National Conference of State Legislatures, the National Association of Counties, and the Council of Mayors, to deliver targeted solutions designed to increase energy efficiency in buildings, transportation, industry, and communities by providing information and technical and financial resources. It helps state, local, and international policymakers develop and implement energy policies. It also facilitates the development and commercialization of innovative energy-efficient technologies, and fosters the development and adoption of building energy codes at the state level. Furthermore, the Weatherization and Intergovernmental Program demonstrates and encourages the use of renewable energy and energy-efficient technologies on tribal lands and in international markets.

DISTRIBUTED ENERGY RESOURCES PROGRAM

The Distributed Energy Resources Program provides funding for research and development on an array of small, modular energy generation devices, such as reciprocating engines, industrial turbines, microturbines, and thermally activated equipment, that is available for utilization by

[65]Source: The Office of Energy Efficiency and Renewable Energy, available at http://www.eere.energy.gov/

manufacturing plants, industrial facilities, commercial businesses, schools, hospitals, government agencies, and electric and gas utilities to reduce costs and environmental impacts, and increase electric reliability, power quality, and energy security.

Distributed energy can be used by both energy producers and consumers to solve the Nation's energy and electric power problems, including blackouts and brownouts, energy price spikes, energy security concerns, power quality issues, rising energy costs, tighter emission standards, and transmission bottlenecks.

FEDERAL ENERGY MANAGEMENT PROGRAM

The Federal Energy Management Program (FEMP) works to reduce the cost and environmental impact of the federal government by advancing energy efficiency and water conservation; promoting the use of distributed and renewable energy; and improving utility management decisions at federal sites. FEMP helps federal facility and energy managers achieve greater energy efficiency and cost-effectiveness in areas such as new construction, building retrofits, equipment procurements, operations and maintenance, and utility management.

FreedomCAR & VEHICLE TECHNOLOGIES PROGRAM

The FreedomCAR and Vehicle Technologies Program works with industry to develop and deploy advanced highway transportation technologies that reduce the Nation's use of imported oil and improve air quality. It leads an extensive research and development effort for the advancement of alternative fuels, fuel-efficient vehicles, and other advanced automotive technologies. The program enhances energy efficiency and productivity; brings clean, reliable, and affordable energy technologies to the marketplace; and makes a difference in the everyday lives of Americans by enhancing their energy choices and their quality of life.

GEOTHERMAL TECHNOLOGIES PROGRAM

The Geothermal Technologies Program works in partnership with U.S. industries to establish geothermal energy as an economically competitive contributor to the U.S. energy supply. Geothermal energy production generates electricity or provides heat for direct applications including aquaculture, crop drying, and district heating, or for use in heat pumps to heat and cool buildings. The technologies developed by the program will provide new sources of electricity that are highly reliable and cost competitive, and do not add to America's air pollution or the emission of greenhouse gases.

HYDROGEN, FUEL CELLS & INFRASTRUCTURE TECHNOLOGIES PROGRAM

Hydrogen and fuel cell technologies have the potential to solve the major energy security and environmental challenges that face America today—dependence on petroleum imports, poor air quality, and greenhouse gas emissions. The Hydrogen, Fuel Cells & Infrastructure Technologies Program is working with partners to accelerate the development and successful market introduction of these technologies.

The Hydrogen, Fuel Cells & Infrastructure Technologies Program responds to several recommendations in the President's National Energy Policy, including the development of next generation technologies, establishment of an education campaign that communicates potential benefits, and better integration of subprograms in hydrogen, fuel cells, and distributed energy.

INDUSTRIAL TECHNOLOGIES PROGRAM

The Industrial Technologies Program works in partnership with U.S. industry to develop and deliver advanced technologies that increase energy efficiency, improve environmental performance, and boost productivity. The program cover the continuum from long-term research and development to in-plant assessments and demonstrations. It partners with industry and its many stakeholders to reduce reliance on foreign energy sources, reduce environmental impacts, increase the use of renewable energy sources, and improve competitiveness.

SOLAR ENERGY TECHNOLOGY PROGRAM

The Solar Energy Technology Program leads the effort to research, develop, and deploy cost-effective technologies toward growing the use of solar energy throughout our Nation and the world. The program also educates the public about the value of solar as a secure, reliable, and clean energy choice.

The Solar Energy Technology Program researches and deploys solar energy technologies, namely concentrating on solar power, photovoltaics, and solar heating and lighting. Solar energy holds tremendous potential by potentially diversifying the energy supply, reducing dependence on imported fuels, improving air quality, and stimulating the economy by creating jobs in the manufacture and installation of solar energy systems.

WIND and HYDROPOWER TECHNOLOGIES PROGRAM

The Wind and Hydropower Technologies Program is developing and improving wind energy technology so that it can generate competitive electricity in areas with lower wind resources, and develop new, cost-effective, advanced hydropower technologies that will have enhanced environmental performance and greater energy efficiencies.

Wind energy diversifies the Nation's energy supply, takes advantage of a domestic resource, and helps the Nation meet its commitments to curb emissions of greenhouse gases, which threaten the stability of global climates. Through program-sponsored research and development activities, the Wind and Hydropower Technologies Program enables greater use of two abundant domestic resources for electric power generation, helps stabilize energy costs, enhances energy security, and improves the environment.

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[66] Interviewed also as President of the Electric Drive Transport Association

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Elements of the Management Action Plan

1. **EERE Corporate Program Management System/I-Manage Interface—**Describes a plan to transition to a single EERE program/project management system as an interim step to a single DOE-wide system for research, development, demonstration and deployment (RDD&D) program/project management (e-Government activities).

2. **Uncosted Obligations—**Addresses the factors that affect the amount of obligations that have not yet been turned into work performed—referred to as "uncosted obligations"—and management actions to minimize the level of such uncosted obligations in the future.

3. **State Issues—**Describes issues and provides management actions to improve the effectiveness of state grant programs.

4. **Work Packaging—**Describes steps necessary to use EERE funds more efficiently by repackaging work for some programs in order to improve the linkage to performance and results and reduce process workloads.

5. **Program Management Initiative—**Provides a planned approach to train employees in program and project management based on EERE-identified best practices.

6. **EERE Program Reviews—**Sets forth the basis for using a single management approach for technical and management reviews of programs.

7. **Project Management Center—**Provides a plan to consolidate project management activities in the EERE Golden Field Office and the National Energy Technology Laboratory.

8. **Split Funding—**Describes EERE's efforts to ensure that appropriate management controls exist for programs that receive funding from both the EWD and Interior appropriation subcommittees.

9. **Corporate Planning, Budget Formulation and Analysis—**Describes EERE's approach to improve the planning and analysis for its programs; coordinate budget formulation and execution activities; and improve EERE's responsiveness to congressional committees.

10. **RDD&D Decision Processes—**Describes plans to develop uniform decision processes for EERE programs.

11. **Communications and Outreach—**Describes the benefits of having a consolidated approach to communications and outreach functions and identifies actions leading to cost savings.

12. **Standard Operating Procedures (Office of Business Administration)—** Describes the need to develop standard operating procedures as part of EERE's new "one-way" of doing business and outlines a plan for their development and implementation.

13. **EERE Workforce Analysis—**Describes the process to identify the workload of each organizational entity in EERE; analyze gaps and significant variations in resources used to perform similar functions; and develop and implement actions to better utilize available staff.

14. **Support Services—**Describes significant variations in the use of support services among programs and offices and provides a plan to determine the "value-added" of support services and to develop and implement corrective actions, as appropriate.

15. **Use of Local Management and Operations (National Laboratory) Contractors—** Describes significant variations in the use of local national laboratory employees among EERE programs and offices and a plan to reduce their number and more strategically use local national laboratory employees starting in FY 2004.

16. **Program Direction—**Describes EERE's efforts to ensure that appropriate management controls exist in the use of program direction funds and the actions needed to obtain adequate levels of program direction funding for EERE operations.

17. **Strategic Use of National Laboratories—**Outlines a mechanism to develop policies and procedures for the proper use of the national laboratories and identifies actions leading to cost savings.

18. **EERE Approach for Evaluating Office of Science and National Nuclear Security Administration Laboratories—**Describes the implementation of a standard EERE management review process for input to award fee determinations for national laboratories (other than the National Renewable Energy Laboratory) that EERE uses.






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