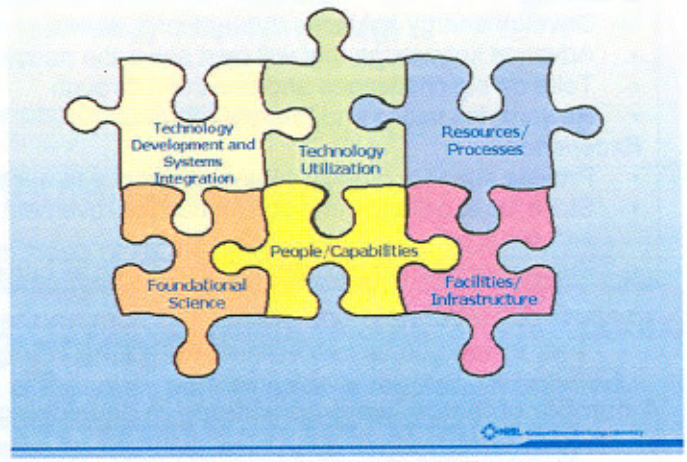
NREL National Renewable Energy Laboratory
Innovation for Our Energy Future
A national laboratory of the U.S. Department of Energy
Office of Energy Efficiency & Renewable Energy

National Renewable Energy Laboratory

FY 2006 One-Year Plan
January 2006

Operated by Midwest Research Institute • Battelle
Contract No. DE-AC36-99G010377

The National Renewable Energy Laboratory (NREL) is operated under a management and operating contract (M&O) by the integrated Midwest Research Institute and Battelle team on behalf of the United States Department of Energy (DOE). While the DOE Office of Energy Efficiency and Renewable Energy (EE) is the primary sponsor of work at the Laboratory, as a Federally Funded Research and Development Center (FFRDC), NREL may perform work for, or with, any DOE program sponsor, federal, state, or local entity, private sector company, or research or academic institution that furthers DOE's energy efficiency and renewable energy mission. To fulfill its role as prime management and operating contractor, Midwest Research Institute, in partnership with Battelle, and in close alliance with DOE - uses a performance-based management approach that promotes alignment of resources to, and progress towards, outcomes critical to EE and the nation. The MRI/Battelle executive management team at NREL has developed a draft Strategic Roadmap for NREL that was shared with EE at the institutional review held in May 2005. This Roadmap establishes the overall strategic context for the Laboratory, including mission, vision, and values, and it identifies the major elements of focus that will establish NREL as a leader and a preeminent energy research laboratory. The road to preeminence is through a focus on foundational science, technology development and systems integration, and technology utilization that are enabled by world-class capabilities, facilities and infrastructure, adequate resources, and effective processes.



NREL Strategic Roadmap Elements

This One-Year Plan identifies FY06 priorities that strike a balance between advancing the Laboratory's longer-term objectives and outcomes and addressing new operational requirements, both within a context of reduced resources. The plan was developed based upon the draft Strategic Roadmap for NREL and reflects the most important actions that need to be taken in FY06 to deliver on customer programmatic and operational expectations while maintaining the viability of the Laboratory. All of these elements guide the Laboratory's choices on the actions needed to accomplish its mission and achieve its vision for the future.

NREL's mission is to develop renewable energy and energy efficiency technologies and practices, advance related science and engineering, and transfer knowledge and innovations to address the nation's energy and environmental goals .The Laboratory's vision is that NREL, in partnership with its stakeholders, will lead the nation on the path to energy security, reliability, and reduced environmental impact. As such, NREL will set the standard for others and be the preeminent institution for advancing innovative renewable energy and energy efficiency technologies from concept to adoption.

In accomplishing its work, NREL will consistently demonstrate its values, and its plans incorporate these values into the actions taken and the improvements made at the Laboratory.

NREL Core Values

Safe and Supportive work environment
- Protect the safety and health of our employees and the community
- Respect for the individual
- Value individual initiative and foster professional growth
- Value teamwork and collaboration

Leadership for Societal Impact
- Improve our national and global energy future
- Demonstrate respect for our physical and social environment

Integrity
- Maintain the highest standard of ethics and honesty in our work
- Be objective in analysis and policy recommendations
- Be accountable for commitments and results – to customers, stakeholders, partners and employees

Creativity
- Develop energy solutions through innovation
- Advance knowledge that will best serve the nation
- Take on big challenges and see them through
- Reward risk taking and tolerate mistakes

Excellence
- Provide superior quality, value and service to our customers
- Strive for excellence and continuous improvement in all aspects of the organization and its products and services
- Practice outstanding communications with all our stakeholders

Planning Context

A number of factors were considered in developing plans for FY06. These include:

- The federal budget dynamics, with more competition for shrinking discretionary spending, will continue to place pressure on DOE's ability to grow, or even maintain budgets at FY05 levels. The Laboratory will enter into FY06 with reduced beginning uncosted balances and with an expectation of reduced operating budget authority.
- Steadily rising medical insurance and pension costs will place significant additional constraints on the Laboratory's ability to invest in the future.
- New and emerging DOE requirements (e.g., contractor assurance, Homeland Security Presidential Directive 12) could further constrain NREL's ability to make investments needed to sustain the Laboratory.
- A new Energy Bill is expected to provide new guidelines and influence the DOE agenda starting in FY06.

The environment that NREL is facing requires tough decisions and proactive actions. In response, the leadership at NREL is taking a rigorous look at everything it does and will likely stop doing certain activities in favor of others. These decisions will be guided by an underlying philosophy that recognizes it is better to cut some important but less high priority activities, as opposed to under-funding everything that the Laboratory does. Such decisions are in the best interest of DOE and the Laboratory.

Through interactions with DOE headquarters and Golden in planning for FY06, NREL took a fresh look at the critical outcome and key task structure used in the past. With the goals of reducing areas of overlap and focusing, this plan now reflects a simplified four critical outcome structure. Regardless, the emphasis remains on ensuring a supportive environment that enables delivering exceptional S&T; providing the leadership and stewardship necessary to

secure NREL's future; demonstrating ES&H is a core value of the Laboratory; and delivering effective and efficient business processes and infrastructure to enable the S&T mission. NREL has also recommended to DOE that a joint working group be formed to revisit the planning framework for FY07 and beyond, with the goal of having a proposed framework for discussion at an institutional review early in calendar year 2006.

The Laboratory has defined a core set of key tasks at the institutional level to reflect the FY06 priorities, these include:

- Strengthening the science foundation and creating leverage for the mission with the Office of Science.
- Moving ES&H from a priority to a core value.
- Focus the Laboratory's actions on strategic roadmap elements that advance the role of NREL as a leading national and international asset.
- Building institutional relationships that advance the mission.
- Developing and launching a robust technology utilization strategy.
- Completing construction of the S&TF.

It is within this context that this FY06 one-year plan was developed.

Outcome-Oriented Planning

NREL's priorities and outcomes are aligned to those of DOE through the integrated planning and budgeting process, supported by the Laboratory's critical outcome framework. NREL's One-Year Plan – consisting of critical outcomes, performance objectives, and high-level key tasks to which indicators are linked – provides the mechanism for achieving internal alignment and integration to DOE priorities. Over the course of the year, performance is regularly monitored and assessed by NREL and by DOE and formally evaluated at year end. Results of these assessments help guide course corrections, thereby fostering organizational learning and improvement.

Besides providing a robust performance-based management approach, this One-Year plan describes NREL's plans for FY06, and responsibilities to the challenging environment facing the Laboratory.

FY06 Critical Outcomes

CO 1.0 Science and Technology – MRI will establish a work environment that fosters quality and creativity, yields innovative and high quality scientific and technological outcomes, and results in utilization of NREL-originated technology and knowledge.

MRI and Battelle leadership at NREL will continue to plan and manage in innovative ways to meet the challenges in the context of the Laboratory's long-term goals. Maintaining and ensuring the value of its intellectual assets is vital to the viability of the Laboratory.

Achieving and sustaining excellence in the science and technology delivered in support of DOE and national renewable energy and energy efficiency needs is at the core of NREL's mission. To enable continued excellence and innovation, the Laboratory recognizes the importance of strengthening the science foundation and creating leverage for the mission with the Office of Science and other basic science organizations. A highly effective FFRDC also plays a key role

in enabling the transfer, and ultimately, the use of the knowledge and technologies developed for public benefit, thereby maximizing the nation's return on investment.

NREL will deliver high quality S&T results, supported by a strong analytic foundation, and transfer technology and technical knowledge through effective program stewardship and management practices. In FY06, The Laboratory will evolve its technology transfer/deployment approaches and begin to implement a knowledge management strategy that maximizes knowledge and technology transfer to market participants and decision makers. While continuing to emphasize the development and delivery of high quality S&T, NREL will also concentrate on building and strengthening the public and private partnerships that can help ensure that the Laboratory is working on the right things with access to the best available capabilities. In FY06 and well into the future, NREL will focus energy and resources on delivering breakthrough technology that will transform the nation's energy infrastructure, yielding energy security, economic, and environmental benefits

PO 1.1 Foundational Science: Develop an exceptional scientific foundation that underpins and leads to breakthroughs.

PI 1.1.1 Preeminence in key foundational scientific areas enable energy innovation.
PI 1.1.2 Excellence in linking basic science and applied R&D.
PI 1.1.3 Scientific advances result in breakthroughs in energy technologies.

Lab-Level Key Tasks

1. Advance foundational scientific knowledge through strategic partnerships with universities and other laboratories.
2. Demonstrate the quality of NREL's scientific leadership in areas such as solar science, biotechnology, and nanoscience.
3. Solicit, fund, and manage DDRD projects to yield viable new concepts that could have significant impact.

PO 1.2 Technology Development and Systems Integration: Deliver technology innovations and integrated systems-level approaches that advance DOE program objectives.

PI 1.2.1 Programs and projects produce significant research and development accomplishments that positively impact the advancement of DOE mission and program goals.
PI 1.2.2 Leadership in market-relevant technology innovations (components, viable systems, and manufacturing processes) positively impacts the advancement of DOE mission and program goals.

Lab-Level Key Tasks

1. Deliver market viable technologies and systems options that meet market needs to reduce cost and/or enhance performance and reliability.

PO 1.3 Technology Utilization: Transfer NREL-oriented knowledge and technology.

PI 1.3.1 Partnerships created result in transfer of important NREL technologies.
PI 1.3.2 Use of NREL knowledge and practices removes barriers to the use of EE and RE technologies.
PI 1.3.3 A robust strategy to support market viability is developed and implemented.

Lab-Level Key Tasks

1. Develop a strategic intellectual assets plan for NREL that enhances the technology base, attracting collaborative partnerships that advance DOE's mission.
2. Deliver knowledge and technical assistance that objectively informs decisions of market participants and policy makers.
3. Create pathways to deliver NREL research and development information to key stakeholders and the public to enhance NREL's mission and advance the Laboratory's strategic priorities.

CO 2.0 Laboratory Stewardship

MRI will provide leadership that enhances the long-term viability of NREL and its value as a recognized national and international asset.

Commensurate with its FFRDC responsibilities, MRI and Battelle leadership will enhance the value that NREL delivers to DOE through integration of a broad range of technical expertise with insights gained from collaborations with industry, academia, and consumers. In FY06, NREL will continue to refine its top-level strategy while developing and implementing next-level down action plans. NREL strategy not only informs the S&T agenda, but also assures that the right facilities, infrastructure, and competencies are in place to be able to perform work at the Laboratory. Further inroads will be made in Systems Integration and analysis capabilities will be brought on line that will assure EERE gets the credible, unbiased information it needs to make sound decisions.

PO 2.1 Demonstrate NREL's leadership in guiding an R&D agenda that increases the impact of renewable energy and energy efficiency.

PI 2.1.1 Ideas, analysis, and other input from NREL that influences the strategic direction of DOE program or business strategies as acknowledged by customers, stakeholders, and reviewers.

PI 2.1.2 Recognized as providing credible, objective knowledge that supports industry and informs policy and market decisions.

Lab-Level Key Tasks

1. Develop and implement an action plan that focuses NREL resources in areas of highest impact consistent with the strategic roadmap.
2. Bring fact-based information and new ideas to DOE through participation in EERE and ESE forums.
3. Provide integrated baselines, systems analysis, technical validation, systems engineering practices, and independent review/recommendations for use in decision-making processes through a systems-level approach to supporting EERE programs.
4. Implement the new analysis 'hub and spoke' business model to enhance the credibility, quality, and value of information to inform decisions and produce quality inputs to strategic management products.

PO 2.2 Develop, enhance, and sustain NREL's scientific, engineering, and analytic capabilities.

PI 2.2.1 The Lab's signature core technical competencies are identified, and a strategy for strengthening these competencies is in place.

PI 2.2.2 A competency focused Human Capital Management strategy is implemented.

PI 2.2.3 A knowledge management strategy for NREL is in place.

Lab-Level Key Tasks

1. Assess current core technical competencies and distinctive capabilities, determine gaps for us to have the greatest impact, and invest to strengthen and add competencies and capabilities.
2. Focus Human Capital Management strategy to support key competency needs through a Laboratory-wide integrated system that links to NREL's Strategic Roadmap.
3. Develop a knowledge management strategy to enhance NREL's ability to objectively and credibly inform decisions.

PO 2.3 Develop a sustainable campus to meet EERE strategic needs.

PI 2.3.1 Site and facility plans and discussions provide a useful basis for DOE capital investment decisions.

PI 2.3.2 Demonstrated progress against the goals and objectives of Sustainable NREL.

Lab-Level Key Tasks

1. Identify facility requirements to support expected research directions; reach agreement on priorities with DOE managers and develop plans to establish NREL as the showcase campus for efficiency and sustainability using innovative financing and partnership models as necessary.
2. Continue implementation of the Sustainable NREL Master Plan.

PO 2.4 MRI stewardship of NREL enhances the Laboratory's visibility and stature and value as a corporate citizen.

PI 2.4.1 External involvement demonstrates good corporate citizenship and enhances NREL's reputation.

PI 2.4.2 Available resources are effectively utilized for conducting DOE's science, mathematics, technology, and engineering education programs, and for positioning NREL as a science education leader.

Lab-Level Key Tasks

1. Selectively engage in local, national, and international leadership efforts that align with NREL's strategy and advance the mission.
2. Deliver educational opportunities that encourage a diverse generation of scientists and engineers to support the EERE mission.

CO 3.0 Mission Support

MRI will provide effective and efficient management and business systems and practices that enable execution of the NREL mission and effective stewardship of DOE assets.

NREL strives to maximize the use of program resources to deliver valuable knowledge and technology and maintain and enhance the assets that enable accomplishments in the most cost

The Laboratory recognizes that there should not be separate environmental and safety management systems, and in FY06 will focus on integrating the separate EMS and ISM systems into one stronger system.

PO 4.1 Demonstrate sustained excellence in safety, health, and environmental protection.

PI 4.1.1 A fully integrated Environmental Management System (EMS) and Safety Management System (ISM) is in place.

PI 4.1.2 A reassessment of the Integrated Safety Management program for further optimization, is performed.

PI 4.1.3 Regular Inspections and assessments demonstrate responsible ES&H management.

Lab-Level Key Tasks

1. Complete self-certification of EMS - ISM integration in conjunction with the Golden Field Office to meet the December 30, 2005 deadline as required by DOE Order 450.1, *Environmental Protection Program*
2. Conduct independent assessment of ISM implementation and develop gap analysis
3. Conduct evaluation of the lab-wide chemical inventory management system and identify improvements.
4. Conduct validation of Lab-wide chemical inventory
5. Collaborate with external ES&H organizations for continuous improvement and assess benefits of organizational certifications.
6. Evaluate and close-out open action items from previous Golden Office Surveillances.
7. Determine Fire and Life Safety Assessment needs and develop strategy.
8. Participate in GO Surveillance Program
9. Demonstrate progress towards achieving NEPT goals
10. Maintain Lab ES&H performance against DOE, industry, and best management baselines
11. Support GO in conducting the environmental reviews associated with site build-out activities.