

# EERE-National Laboratory Guiding Principles

March 9, 2015

## EXECUTIVE SUMMARY

The purpose of this document is to establish a set of principles that will guide and empower EERE and laboratory employees to ensure that the National Laboratories deliver innovative and transformative scientific and technological solutions to energy, security, economic, and environmental challenges facing the United States in the 21st century. These core principles, operating principles, and implementation strategies define and communicate how the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy (EERE) will uniformly and effectively engage with DOE's National Laboratories.

EERE helps lead DOE efforts to build a strong clean energy economy, while also reducing U.S. reliance on foreign oil, saving families and businesses money, creating new jobs and industries, and reducing carbon pollution. Toward that end, EERE supports some of America's best innovators in industry, universities, and at the National Laboratories, where they research, develop, and demonstrate cutting-edge technologies and work to break down market deployment barriers in EERE's three key energy sectors: sustainable transportation, renewable power, and energy efficiency.

The intellectual and physical assets at DOE's National Laboratories—when appropriately stewarded, engaged, and managed—provide world-class science and technology (S&T) capabilities to the Nation. These capabilities give the United States a unique competitive advantage in developing, manufacturing, and deploying the cutting-edge technology solutions that will power the emerging multi-trillion-dollar global clean energy economy. EERE invests approximately one-third of its current approximately \$2 billion annual budget into the National Laboratories in support of these world-class S&T capabilities.

This foundational document articulates and establishes a clear framework for how EERE will engage with the National Laboratories in a consistent, coherent, and strategic way in order to foster greater innovation, entrepreneurship, and market impact.

The principles and implementation strategies in this document build the foundation for maintaining and growing the National Laboratories' S&T capabilities by establishing an enduring, uniform business approach to EERE's National Laboratory activities. This document serves as the cornerstone of the relationship between EERE and the National Laboratories; it will be periodically refined based on lessons-learned, as well as to reflect new initiatives and guidance, best business practices, and/or reforms by the Office of the Secretary, the Office of the Under Secretary for Science and Energy, the Secretary's National Laboratory Policy Council and Lab Operations Board, and the National Laboratory Directors' Council. Nothing in this document shall supersede or change any contractual agreements between DOE and each of its National Laboratories. All planning and commitments referenced in this document are subject to appropriations.

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## CORE PRINCIPLES

The following core principles help maintain and enhance National Laboratories' science and technology (S&T) expertise by guiding interactions between the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy (EERE) and DOE's National Laboratories.

### I. WORLD-CLASS SCIENCE AND TECHNOLOGY

DOE's National Laboratories are science and engineering powerhouses. The most fundamental principle underpinning the relationship between EERE and the National Laboratories is the development, stewardship, and application of world-class science and technology capabilities to address the Nation's most important energy challenges and opportunities (Operating Principle 3 (OP 3)). EERE's work at the National Laboratories will represent tightly-integrated efforts across the full spectrum of the energy innovation chain (OP 4), from cutting-edge fundamental and applied research to advanced technology development and prototyping to pioneering technology demonstrations (OP 8). EERE's work with the National Laboratories is expected to result in the discovery, development, and ultimate successful commercialization of cutting-edge energy technologies, in concert with breakthrough energy-related scientific discoveries that are published in the world's leading peer-reviewed scientific journals (OP 9).

### II. LONG-TERM COMMITMENT AND STEWARDSHIP

Senior leadership at EERE and the National Laboratories have a long-term commitment to steward the government-owned S&T capabilities that exist at the National Laboratories. This commitment drives collaboration in strategic planning (OP 1) and EERE's engagement with National Laboratories in the identification and stewardship of core and enabling S&T capabilities (OP 3). This core principle is further supported by EERE's commitment to seek stable, predictable funding for National Laboratories (OP 2), as well as to communicate the National Laboratories' successes (OP 9). The nature of the significant scientific, technical, and market challenges that this nation must overcome to accomplish its most pressing energy, environmental, and economic goals<sup>1</sup> necessitates long-term commitment.

### III. MUTUAL RESPECT AND ACCOUNTABILITY

EERE and the National Laboratories are mutually accountable for the success of EERE-funded National Laboratory efforts and sustainment of National Laboratories' S&T capabilities related to EERE's mission. Mutual respect guides our planning, project execution, and evaluation processes. It also demands joint stewardship of S&T capabilities, including major research facilities (OP 3), and supports collaborative planning (OP 1). Collaboratively setting strategic, high-level goals empowers National Laboratories to draw upon their creativity and expertise to solve clean energy challenges. EERE will coordinate with other DOE offices (e.g., Office of Science, etc.) to ensure that laboratory planning reflects input from throughout the DOE complex. This empowerment supports the Laboratories' abilities to steward S&T capabilities, while managing for market impact (OP 6); facilitating technology transfer (OP 7); and strengthening impactful activities outside of traditional technology research, development, and demonstration (RD&D) (OP 8). Acting with mutual respect and accountability also means that EERE and the National Laboratories must jointly manage for results (OP 5). In all interactions, EERE and National Laboratory staff will make honesty, integrity, and mutual respect priorities. Where EERE and National Laboratory staff disagree, the dissenting party can and should voice its disagreement and basis for dissent without any fear of reprisal.

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<sup>1</sup> See Department of Energy Strategic Plan 2014–2018, March 2014

#### IV. INDUSTRY AND MARKET IMPACT

EERE and the National Laboratories' expertise needs to be informed by the private sector and other key stakeholders to correctly identify and overcome technical and market deployment barriers that will ultimately lead to U.S. clean energy industrial competitiveness and cost-effective deployment of clean energy and energy efficiency technologies (OP 6). National Laboratory S&T capabilities and major research facilities must be accessible through collaboration and partnership (OP 4), and EERE-funded work must be well-informed by stakeholders—direct industry engagement is of utmost importance. Work should impact the ultimate deployment of clean energy technology or be transitioned into the U.S. clean energy industry (OP 8). National Laboratory research and development that is informed by private-sector needs and realities strengthens National Laboratory expertise and ensures the successful development of more commercially relevant technologies. Leveraging the expertise, innovation infrastructure, talents, and insights of the National Laboratory enterprise enables the private sector to be more competitive in the global clean energy economy (OP 7).

# OPERATING PRINCIPLES AND IMPLEMENTATION STRATEGIES

The following nine operating principles and their associated implementation strategies support the core principles to sustain the S&T expertise that make the National Laboratories national assets. Directors of EERE's technology offices have the authority to make limited exceptions to these principles and implementation strategies based on their best judgment.

## 1. COLLABORATE IN PLANNING

*As EERE's strategic partners with world-class S&T expertise, National Laboratories can and should provide valuable input to EERE's strategic and annual planning processes.*

### **IMPLEMENTATION STRATEGIES**

- 1.1 EERE leadership<sup>2</sup> and staff will regularly engage closely with National Laboratory leadership and scientific and technical staff (in their capacity as Federally Funded Research and Development Centers (FFRDCs)<sup>3</sup>) to conduct annual and long-term strategic planning or idea summits,<sup>4</sup> that will inform EERE future direction (e.g., through multi-year program planning, technology roadmapping, and identifying future programmatic priorities).
- 1.2 Consistent with the FFRDC designation, National Laboratory leadership and staff will ensure they maintain objectivity and independence—acting in the national interest and free from conflicts of interest—in conducting research and analyses, advising DOE and EERE, and developing plans and proposals.
- 1.3 Annual Operating Plans (AOPs) will be the standard performance agreement between EERE and the National Laboratories and will be developed collaboratively through substantive interactions.
- 1.4 Strategic planning will inform National Laboratories' proposal development and EERE and National Laboratories' project planning, particularly the development of multi-year project objectives.
- 1.5 Each EERE technology office will collaborate with its National Laboratory counterparts to build larger projects or significant consortia with multi-year goals. This will allow National Laboratories more flexibility in deciding how to solve higher-level challenges and is meant to avoid micromanagement and inflexibility. This includes encouraging inter-lab cooperation and utilizing National Laboratories' S&T expertise to address broad energy challenges on a regional level (e.g., integrated multi-lab grid effort).

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<sup>2</sup> EERE leadership includes the EERE Assistant Secretary, Principal Deputy Assistant Secretary, Chief of Staff, Deputy Assistant Secretaries, Director of Strategic Programs, Director of Business Operations and its three subordinate Directors, all Program Office Directors, Golden Field Office Manager, Golden Field Office Procurement Director, and National Energy Technology Laboratory Office Director for Energy Project Management.

<sup>3</sup> A Federally Funded Research and Development Center (hereinafter "FFRDC") is defined in the Code of Federal Regulations. An FFRDC meets some special long-term research or development need that cannot be met as effectively by existing in-house or contractor resources. FFRDCs enable agencies to use private-sector resources to accomplish tasks that are integral to the mission and operation of the sponsoring agency. In order to discharge its responsibilities to the sponsoring agency, an FFRDC has access, beyond that which is common to the normal contractual relationship, to government and supplier data—including sensitive and proprietary data—and to employees and installations equipment and real property. An FFRDC is required to conduct its business in a manner befitting its special relationship with the government, to operate in the public interest with objectivity and independence, to be free from organizational conflicts of interest, and to have full disclosure of its affairs to the sponsoring agency. It is not the government's intent that an FFRDC use its privileged information or access to installations equipment and real property to compete with the private sector. However, an FFRDC may perform work for an entity other than the sponsoring agency under the Economy Act, or other applicable legislation, when the work is not otherwise available from the private sector. 48 C.F.R. § 35.017 (2014)

<sup>4</sup> EERE will participate in DOE Lab idea summits led by the Office of the Under Secretary for Science and Energy, and, to the extent possible, EERE will help lead greater collaboration and integration among multiple DOE offices and National Laboratories.

## 2. PROVIDE STABLE, PREDICTABLE SUPPORT

*Providing each National Laboratory with a combination of reasonable year-to-year funding stability and transparency in funding shifts across its portfolio preserves critical scientific talent and technical capabilities. EERE commits to communicating major changes in a National Laboratory's funding from year to year.*

### **IMPLEMENTATION STRATEGIES**

- 2.1 EERE will strive to have a relatively constant fraction of its funding invested in the National Laboratories to steward S&T capabilities. Individual technology office commitments will inevitably rise and fall based on mission needs, National Laboratory performance results, and the evolution of EERE priorities.
- 2.2 When significant shifts of funding support are necessary, EERE will seek to responsibly and transparently make these shifts over reasonable periods of time. To the extent possible, EERE technology office directors will notify National Laboratories 6 months or more prior to major funding changes within EERE's control.
- 2.3 EERE will establish uniform AOP formats, templates, and processes as vehicles for establishing performance expectations and planning funding for multi-year projects (see Appendix B for the EERE AOP planning and evaluation process), including a formal change control process for addressing changes to approved AOPs.
- 2.4 EERE technology office directors will provide initial AOP guidance for the next fiscal year to their National Laboratory counterparts prior to the start of AOP Development (typically no later than June 1<sup>st</sup>). Additional feedback will be provided based on merit review<sup>5</sup> comments.
- 2.5 EERE technology office directors and their National Laboratory counterparts will negotiate and sign AOPs for the upcoming fiscal year by the first of October each year. These planned commitments are based on the best-available appropriations information and are subject to change. In the event that an Appropriations Bill is not passed, the AOP will be based on an EERE-developed planning level and may include over-target projects or activities (pending funding availability).
- 2.6 To ensure continuity, the target for a continuing project's unencumbered,<sup>6</sup> uncosted obligations at the end of the fiscal year is 25% of the 12-month project budget in the AOP, with flexibility as appropriate to the nature of the project. A National Laboratory's uncosted obligations with each EERE technology office will vary based on a range of factors, including the type of project and funding levels of continuing projects.
- 2.7 EERE will commit to multi-year projects (nominal planned length of 3 years) with the National Laboratories, contingent upon performance and appropriations (e.g., meeting agreed-upon milestones and passing project merit review). EERE will develop annual funding plans for these projects; however, funding may be allocated monthly due to budgetary restrictions. Continued funding will be dependent on agreed-upon performance and appropriations, including meeting established annual milestones, meeting go/no-go decision points/milestones, and receiving a favorable merit review. If a project is not reviewed well, an alternative project may be proposed—allowing for new topics and innovations, while removing non-performing projects.

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<sup>5</sup> See EERE National Laboratory Project Merit Review (Prior to Funding) Guidance.

<sup>6</sup> Unencumbered funds are all funds that are not encumbered; encumbered funds are those that a lab has committed to specific subcontracts and thus are not available for the National Laboratory's direct costs.

### 3. JOINTLY STEWARD AND MANAGE SCIENCE & TECHNOLOGY CAPABILITIES AND MAJOR RESEARCH FACILITIES

*By jointly stewarding National Laboratory S&T capabilities and major research facilities<sup>7</sup>, EERE and National Laboratory leadership ensure the continuing relevance, vitality, and operation as FFRDCs. S&T capability stewardship, including facilities, is central to sustaining the world-class physical and intellectual S&T assets of the National Laboratory Complex.*

#### **IMPLEMENTATION STRATEGIES**

- 3.1 EERE commits to steward EERE-recognized core S&T capabilities and EERE-recognized major research facilities throughout their natural life cycles by engaging with National Laboratories to clearly identify them (see Appendix A), funding them directly through AOPs (i.e., not competing them), and encouraging industry utilization. Both core S&T capabilities and major research facilities will be retired or transitioned to other uses when appropriate and, when possible, with advance notice (see OP 2). EERE-supported core and enabling S&T capabilities and major facilities within the National Laboratories are expected to be world-class and to result in the discovery, development, and ultimate successful commercialization of cutting-edge energy technologies, in concert with breakthrough energy-related scientific discoveries that are published in the world's leading peer-reviewed scientific journals.
- 3.2 EERE will use the AOP to directly fund core and enabling S&T capabilities (see Appendix A) that have long-term value in advancing EERE strategic and programmatic objectives. Any Funding Opportunity Announcement (FOA) funding attained should be supplementary, meaning the funds are not necessary to sustain core or enabling capabilities. EERE expects that it will generally continue to allow National Laboratories to submit applications as primes and sub-awardees through competitive FOAs to support activities that build on, are complementary to, and/or are differentiated from core and enabling capability work funded through AOPs. EERE may conduct inter-lab competitions or lab calls; these may be appropriate for new or emerging capabilities and for determining capabilities that may exist at National Laboratories but are not currently recognized by EERE. Lab calls may also be a good tool to encourage inter-lab collaboration and bigger consortia-like projects where labs synergistically combine enabling capabilities to accomplish a challenging multi-year goal in one project.
- 3.3 EERE commits to steward identified core S&T capabilities—which are unique to a single National Laboratory—over the long-term (10-year planning horizon) and enabling S&T capabilities over the mid-term (3-year planning horizon) until such capabilities are no longer needed.
- 3.4 EERE technology office directors will annually publish the status and 3-year outlook for core capabilities and enabling capabilities. This status will communicate whether the capability is emerging, existing (steady), or transitioning.
- 3.5 EERE technology office directors will also annually publish the 3-year outlook for EERE-stewarded major research facilities. The outlook for facilities will be broken down into projected outlook for direct facility operations and maintenance funding and/or research and development project funding will be provided, as well as the level of support that will be provided (e.g., full, partial, or none) for each identified major research facility.
- 3.6 In some cases, EERE will require National Laboratories to develop major research facility “stewardship plans” for existing EERE-stewarded facilities. These plans must be approved by EERE. These plans should include research output metrics, utilization/user metrics, business approach for operations and maintenance, and timing for decommissioning or alternate uses. When applicable, these plans will identify how non-federal partners can access these government-owned assets. Metrics gathered for Department

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<sup>7</sup> A major research facility is a facility, or group of facilities, that support an enabling or core capability being stewarded at a National Laboratory. This includes formal DOE-designated “user” facilities.



wide activities regarding technology transfer and commercial use of facilities will be negotiated with and administered through the Office of Technology Transitions to avoid imposing duplicative or excessive reporting requirements on the National Laboratories.

- 3.7 National Laboratory leadership will commit to strengthening individual National Laboratory S&T capabilities—while avoiding unnecessary duplication—in order to work collaboratively with other Laboratories, develop proposed concepts and roadmaps for national impact, and field the strongest national scientific and technical teams to optimize performance.
- 3.8 EERE will support National Laboratory programs to strengthen human capital resources and development.

#### 4. LEVERAGE LABORATORIES' SCIENCE & TECHNOLOGY CAPABILITIES AND FACILITIES THROUGH COLLABORATION AND PARTNERSHIP

*National Laboratories are encouraged to partner with, and make their capabilities and unique assets available to, universities, industry, other National Laboratories, and other Federal agencies to deliver innovative and transformative scientific and technological solutions to the Nation's energy, security, economic, and environmental challenges. National Laboratories are strongly encouraged to collaborate with each other to leverage S&T capabilities and avoid duplication of efforts.*

#### **IMPLEMENTATION STRATEGIES**

- 4.1 EERE leadership will encourage inter-lab cooperation and intra-DOE cooperation in mission planning and execution.
- 4.2 EERE will communicate with any affected National Laboratories prior to a FOA if/when DOE wants to make one or more of the National Laboratories' unique capabilities available to FOA recipients, and EERE may choose to bar the National Laboratory from participating in an application submitted in response to the FOA. EERE and National Laboratory leadership have a responsibility to manage conflicts of interest. This communication will occur as early in the notice of intent/FOA process as practical.
- 4.3 As a default, any funding that a National Laboratory receives through a FOA (including cases above) will be included in the Laboratory's AOP using the formal AOP change control process; EERE technology office directors can make exceptions when it is in the best interest of project outcomes.
- 4.4 National Laboratories may, when permitted by the FOA and contracting officer, participate in teams submitting applications under FOAs targeted toward university or industry to stimulate partnerships and technology transfer with industry and academia.
- 4.5 EERE technology office directors will seek to avoid the development of unconnected project portfolios and will instead prefer the establishment of larger, integrated, multi-year, multi-lab consortia or projects focused on well-defined key challenge areas/project goals with well-defined consortia. Small projects may be appropriate in limited situations, such as investigative/scoping projects initiated out of cycle.
- 4.6 EERE technology office directors will assign one EERE management point of contact, and National Laboratories will assign one empowered leader for each of these larger integrated, multi-laboratory efforts, such that individual principal investigator projects are an exception, not the rule.

#### 5. MANAGE FOR WORLD-CLASS SCIENCE AND TECHNOLOGY RESULTS

*EERE's science and technology work with the National Laboratories is expected to be world-class and to result in the discovery, development, and ultimate successful commercialization of cutting-edge energy technologies, in addition to breakthrough energy-related scientific discoveries that are published in the world's leading peer-reviewed scientific journals. To enable these results, all National Laboratory consortia and projects should address EERE's five core questions, as outlined in the EERE strategic plan: **High Impact, Additionality, Openness, Enduring***

**Economic Impact, and Proper Role of Government.** Use of merit review is critical to sustaining National Laboratory S&T capabilities.

### **IMPLEMENTATION STRATEGIES**

- 5.1 EERE will develop effective methods to identify and reward world-class science and technology results that are achieved by the National Laboratories, including both important technology development accomplishments in addition to publications in the world's leading peer-reviewed scientific journals.
- 5.2 EERE will engage with the National Laboratories on business process and operational changes to ensure (and establish, where needed) efficient processes that deliver world-class S&T capabilities.
- 5.3 For each multi-year project, a quantitative multi-year goal should be clearly identified that is consistent with EERE multi-year program plans or technology roadmaps.
- 5.4 EERE technology offices will merit review new National Laboratory projects before making funding decisions. EERE has developed a merit review guide of lab projects that is modeled after merit reviews for FOA applications. Technology offices will provide the merit review comments/feedback to National Laboratory staff so that they understand the rationale of funding decisions.
- 5.5 EERE and the National Laboratories will jointly establish one major "SMART"<sup>8</sup> end of multi-year project deliverable for each AOP project.
- 5.6 EERE and the National Laboratories will jointly establish one major annual "SMART" milestone/deliverable per AOP project. It is not required that this be an end-of-year or fourth-quarter milestone.
- 5.7 Each multi-year AOP project will include a go/no-go milestone every 12 to 18 months and should be planned during initial project development. Go/no-go milestones are considered "SMART" and can fulfill the requirement for an annual SMART milestone.
- 5.8 When AOP projects do not meet their milestones, or if market conditions have changed, EERE will engage with the National Laboratories to quickly and collaboratively restructure or terminate the activities, and ensure that resources can be used on more promising activities.
- 5.9 EERE technology offices will hold a public (open-to-all) merit/peer review for all funded projects, including National Laboratory AOP projects, no less frequently than once every 2 years and according to procedures outlined in the *EERE Peer Review Guide*.

## **6. MANAGE FOR MARKET IMPACT**

*EERE considers potential market applications for all RD&D and strives to support a balanced portfolio of activities that are innovative and informed by industry at each stage of development. The abilities to "push" innovative technologies into the market and respond to market "pull" are equally important to achieving a sustainable cycle of innovation and eventual commercialization. EERE will work with the Office of Technology Transitions in developing policies and procedures to transition National Laboratory science and technology outcomes into the market.*

### **IMPLEMENTATION STRATEGIES**

- 6.1 EERE and the National Laboratories will work together and in coordination with the Office of Technology Transitions to define and implement changes to current practices that increase industrial engagement and the impact of EERE-funded S&T work at the National Laboratories.
- 6.2 EERE will work with the Office of Technology Transitions on DOE-wide policies that affect non-EERE-owned National Laboratories to facilitate technology transfer and increase engagement with industry for all EERE-funded activities. This will require strong coordination among EERE and other DOE offices.

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<sup>8</sup> A SMART milestone is Specific, Measurable, Attainable, Relevant, and Time-based.

- 6.3 EERE will fund a portfolio of RD&D across the National Laboratories that includes industry-led efforts, as well as Laboratory-led RD&D engagements, which will occur through working groups, technology-specific technical teams, and public-private partnerships. This could be achieved through Cooperative Research and Development Agreements, consortia, user facility grants, memoranda of understanding, or other agreements (e.g., Strategic Partnership Projects).<sup>9</sup>
- 6.4 EERE expects National Laboratories to demonstrate that they have engaged industry by implementing technology-to-market activity plans for research, development, demonstration, and deployment projects, as appropriate.

## 7. FACILITATE TECHNOLOGY TRANSFER AND INDUSTRY ENGAGEMENT AT THE NATIONAL LABORATORIES

*Technology transfer<sup>10</sup> should be an integral component of all EERE AOP work and a crosscutting, enabling capability of the National Laboratories. EERE considers Laboratory-industry engagement, including joint RD&D, to be critical to the development and pursuit of commercially relevant RD&D and other activities at the National Laboratories. Engagement of this sort exposes National Laboratory scientists to the technical challenges and market demands faced by industry. EERE's technology-to-market, technology transfer, and industrial engagement activities will be coordinated with the Department's Office of Technology Transitions.*

### **IMPLEMENTATION STRATEGIES**

- 7.1 EERE will stimulate technology transfer at the National Laboratories by funding technology-to-market activities at the project and/or portfolio level. National Laboratories will leverage existing market expertise (e.g., technology transfer and industry partnership offices) to enable and support market-relevant, EERE mission-oriented work.
- 7.2 EERE will fund entrepreneurship and industrial impact activities at the National Laboratories, such as activities to incubate spin-off technologies through new business ventures that adhere to the DOE management and operating contractual requirement related to fairness of opportunity,<sup>11</sup> as a way to facilitate technology transfer. This includes activities where principal investigators engage with the private sector, customers, and end users in order to increase or accelerate the commercial impact of National Laboratory knowledge and technologies.
- 7.3 EERE-funded National Laboratory S&T work will reflect an understanding of the market—even at early technology readiness levels. This includes developing partnerships with other National Laboratories, the private sector, non-governmental organizations, and state and local governments that aim to accelerate technology transfer from National Laboratories.
- 7.4 Per EERE guidance, National Laboratories will routinely collect data on AOP projects for impact evaluation and return on investment studies. Metrics gathered for Department wide S&T activities regarding technology transfer and commercialization will be negotiated with and administered through the Office of Technology Transitions to avoid imposing duplicative or excessive reporting requirements on the National Laboratories.

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<sup>9</sup> Strategic Partnership Projects were formerly known as Work for Others agreements.

<sup>10</sup> From the Secretarial Policy Statement: "the term 'technology transfer' refers to the process by which knowledge, intellectual property or capabilities developed at the Department of Energy's National Laboratories, single purpose research facilities, and other facilities are transferred to any other entity, including private industry, academia, state and local governments, or other government entities to meet public and private needs."

<sup>11</sup> U.S. Department of Energy. Guidance for providing fairness of opportunity for Technology Transfer Activities at DOE Facilities. June 10, 2011. Accessed on March 23, 2014. <http://www.lbl.gov/Workplace/CFO/assets/docs/ospip/policy/processes/DOE/DOE%20FOO%20Guidance%20June%202011.pdf> and DOE Order 483.1 and the Secretarial Policy Statement on Technology Transfer at DOE Facilities dated March 28, 2011, and DEAR 970.5227-3(e).

## 8. STRENGTHEN IMPACTFUL ACTIVITIES OUTSIDE OF TRADITIONAL TECHNOLOGY RD&D

*EERE recognizes and considers National Laboratory initiatives that enable and generate impact outside of traditional technology RD&D critical to commercializing a technology. These non-RD&D, non-technology-readiness-level activities complement and accelerate the commercial impact of National Laboratory science and technology in indirect ways by removing non-technical barriers to the market. EERE considers the National Laboratories a unique, sustainable environment, where disciplinary and multi-disciplinary training and expertise facilitate enabling activities outside of traditional technology RD&D. In addition, National Laboratories are in a unique position to provide market data; honest broker analysis of energy, environmental, and economic issues; and unbiased technical assistance to policymakers, regulators, and other technology developers in their regions.*

### **IMPLEMENTATION STRATEGIES**

- 8.1 EERE technology offices will fund National Laboratory activities that generate unique and value-added information—like protocols, standards, datasets, and codes—that aid in the decision-making process of DOE, federal and state/local agencies, regulators, Congress, the public, academia, and industry. This includes, but is not limited to, the development of core analytic capabilities to assess current and future energy markets and systems to inform strategic priorities, including new S&T thrusts, business development expertise, and project finance capabilities.
- 8.2 EERE expects National Laboratories to make data transparency (i.e., available to the public) the default, in accordance with U.S. Government policy such as the Open Data Initiative<sup>12</sup> unless justified (e.g., proprietary information/agreements, privacy issues, or burdensome costs) and concurred upon by the appropriate EERE management.
- 8.3 National Laboratories are encouraged to build regional partnerships to inform stakeholders of emerging energy issues, provide technical assistance and S&T expertise, and form industry/university collaborations.
- 8.4 National Laboratories may perform systems integration functions on behalf of EERE where it is necessary to manage the interfaces of several components or subsystems that make up a large, complex project or technology area.
- 8.5 EERE and National Laboratory senior management will establish common sets of metrics for all EERE AOPs to measure commercial and market impact of EERE National Laboratory investments in addition to other, more traditional performance metrics (e.g., licenses) and sector-specific metrics as appropriate.

## 9. COMMUNICATE NATIONAL LABORATORIES' SUCCESSES

*The National Laboratories are world-class research and development facilities that support the advancement of groundbreaking discovery science and applied technology development; therefore, National Laboratory scientists and engineers should strive to be the best in their fields. EERE recognizes that the acceleration of science and technology from the DOE National Laboratories leads to economic growth and global competitiveness. In partnership with the National Laboratories, EERE will share the results of EERE-funded activities in order to communicate the impact of taxpayer investments on the clean energy market.*

### **IMPLEMENTATION STRATEGIES**

- 9.1 EERE and the National Laboratories encourage researchers to share their S&T results of EERE-funded activities and lead the dialogue among scientists and engineers in their particular fields of expertise. This

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<sup>12</sup> See <http://www.whitehouse.gov/open>

can be done through stakeholder engagement, speaking at prestigious conferences and events, peer-reviewed publications, and other appropriate means.

- 9.2 EERE—as a part of a DOE-wide communications strategy—will publish frequent success stories for targeted audiences, detailing world-class science and technology development, accomplishments (including publications in the world’s leading peer-reviewed scientific journals), market impact and technology transfer activities, manufacturing innovations, and other National Laboratory accomplishments that advance the nation’s energy, environmental, and economic competitiveness.
- 9.3 National Laboratories, working with EERE, are encouraged to identify and proactively report S&T success stories that illustrate how their work is helping to meet EERE’s mission and other DOE office missions.
- 9.4 National Laboratories will communicate planned press releases and public engagement activities regarding EERE-sponsored activities. The National Laboratories and EERE will coordinate closely before public release to enable increased awareness and impact of these communications.
- 9.5 National Laboratories are encouraged to develop recognition programs for those principal investigators who are particularly successful in research and development, as well as technology-to-market activities. Further, National Laboratories are urged to share best practices and implementation suggestions with EERE and other National Laboratories.

## APPENDIX A: DEFINITION OF NATIONAL LABORATORY CAPABILITY TYPES

### CORE SCIENCE AND TECHNOLOGY (S&T) NATIONAL LABORATORY CAPABILITIES

Funding Policy—EERE commits to steward core (S&T) capabilities over the long term (decadal).

*Core S&T National Laboratory Capabilities* are composed of enduring intellectual and/or physical assets that are designed to solve a long-term, difficult challenge associated with clean energy; are not easily duplicated; and have a unique, world-leading S&T component. Core capabilities distinguish the National Laboratories from one another, as well as from industry. As such, each National Laboratory will have a limited number of core S&T capabilities.

### ENABLING SCIENCE AND TECHNOLOGY (S&T) NATIONAL LABORATORY CAPABILITIES

Funding Policy—EERE commits to support enabling S&T capabilities over a 3-year period.

*Enabling S&T National Laboratory capabilities* are composed of resident, critical, technical expertise, and/or physical assets that EERE accesses to address specific needs; are readily accessible; and complement core capabilities, strategic initiatives, and/or needs at the National Laboratories. EERE will continue to invest in these S&T capabilities for as long as they enable critical and relevant research, development, and demonstration, and EERE may invest in the complementary S&T enabling capabilities at multiple National Laboratories.

### DOE CORE S&T CAPABILITY CATEGORIES

DOE's Office of Science has defined 24 core capability categories (e.g., chemical engineering). Each EERE capability can be cross-walked to one or more of DOE's Office of Science Core Capability Categories. Generally, EERE capability types differ from, but relate to, Office of Science capability categories because they incorporate domain-relevant expertise.

### DEFINITION OF CAPABILITY OR FACILITY STATUS<sup>14</sup>

All National Laboratory project proposals will be merit reviewed prior to funding. Core and enabling S&T capabilities are funded directly and not regularly competed. All funding is subject to agreed-upon performance and funding availability. Note that if a National Laboratory believes it has a relevant core or enabling capability not currently funded by EERE, it should discuss with the relevant technology office and plan to submit a proposal for merit review.	
<b>Existing (Green)</b>	EERE's level of support (for capabilities and/or facility operations and maintenance) and type of use is not expected to change significantly over the next 3–10 years (3 years for enabling; 10 years for core).  Funding Policy—A National Laboratory interested in working in an area for which EERE has already recognized another National Laboratory should first seek to collaborate with the existing Laboratory (or Laboratories, if applicable).
<b>Emerging (Yellow)</b>	An emerging capability/facility is one that is not fully developed. Emerging facilities have current or planned construction or major capital improvements planned that will substantially change the nature or extent of EERE's use and/or stewardship. EERE should clarify its vision for emerging capabilities through the comments column.  Funding policy—Offices may choose to issue a lab call (i.e., request for new proposals from one or more specific National Laboratories).
<b>Transitioning (Red)</b>	This capability/facility is being transitioned to a different state. This state can also be used for capabilities that EERE wishes to transition to the private sector or capabilities or facilities for which EERE wishes to change its level of stewardship (e.g., from core to enabling or a shift in level of operations and maintenance or research and development facility support).  Funding policy—Major transitions <sup>14</sup> will be signaled 6 months to 2 years in advance, to the extent possible, depending on the complexity and breadth of the enabling and core capabilities.

<sup>14</sup> In conjunction with EERE's Capability and Facility Matrices, capability and facility statuses are color coded as described in this table.

# APPENDIX B: UNIFORM EERE AOP PLANNING AND EVALUATION PROCESS

