The EERE investment approach is segmented into three distinct phases, shown in Figure 1:

Phase 1—Applied Research: EERE invests heavily through national laboratories and universities, as well as industry. Detailed analysis is performed to identify if a technology may be able to achieve market competitiveness and fundamentally lower costs to society. EERE often invests in several promising technology pathways guided by well-developed, long-term roadmaps that are created in collaboration with key stakeholders. EERE also promotes and sustains an internal culture that is open and receptive to new ideas and approaches in the context of these long-term roadmaps.

Phase 2—Development and Demonstration: EERE's investments during this phase focus on testing and validating performance, reliability, and costs through full-scale technology demonstration and analyses of the technology's market competitiveness. EERE may also fund small or limited scale demonstrations, with technologies integrated into full systems, to catalyze and leverage additional private sector investment. Aided by these EERE investments, the barriers to private investment are decreased, opening up development of business models and supply chains and further reducing cost.

Phase 3—Focus on Market Barriers: EERE focuses on activities that can help overcome barriers to high volume adoption, due to "Soft" or "Perceived Costs" described in Figure 1. These activities can include providing key information to consumers, regulators, financiers and other market participants or addressing particular market issues such as workforce training. EERE's Congressionally-authorized appliance standards program is another example of an activity to address market adoption by establishing minimal levels of product energy efficiency. These market adoption programs can provide an important catalyst in making sure that markets and industries for new clean energy technologies operate as efficiently as possible.

The description reflects a single technology for simplicity, though in practice, EERE invests in a portfolio of options in each sector and potentially at many points in the process. The investment pathway is intended to be flexible, and the nature of EERE and its partners' roles varies by technology, as does the nature of the activity as a technology moves down the cost curve.

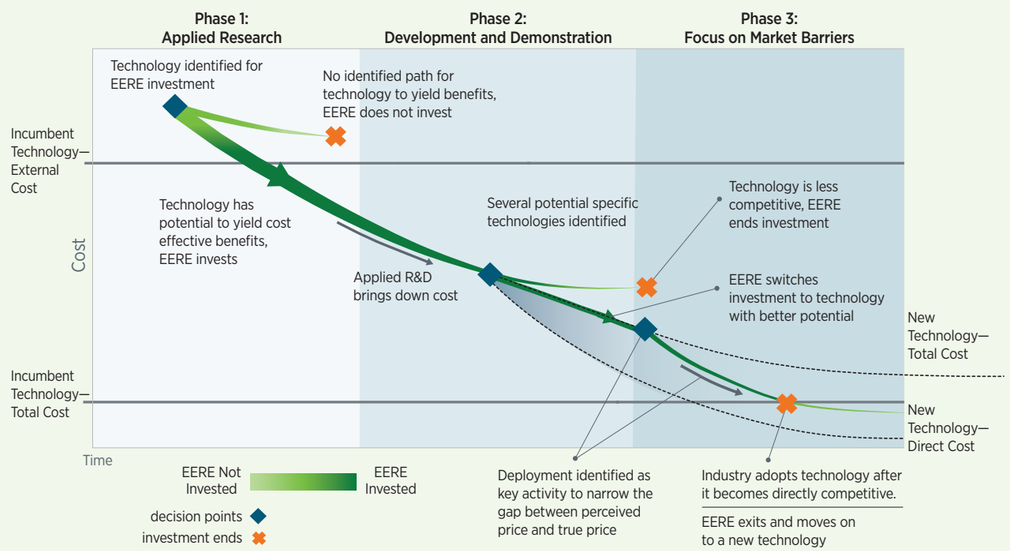

Figure 1: Diagram of the EERE investment pathway

Products incorporating a New Technology must have a Total Cost that is less than the Total Cost of those with the Current or Incumbent Technology to be widely adopted by the market. Total Cost includes the Direct Cost of the product itself plus User Costs, including operations and maintenance, and unique infrastructure or system integration costs. It may also include unique Acquisition or "Soft" Costs such as financing, installation, regulation, training, or certification. Finally, it may include less tangible Perceived Costs resulting from customer concerns about the products inherently novel and unfamiliar technologies.

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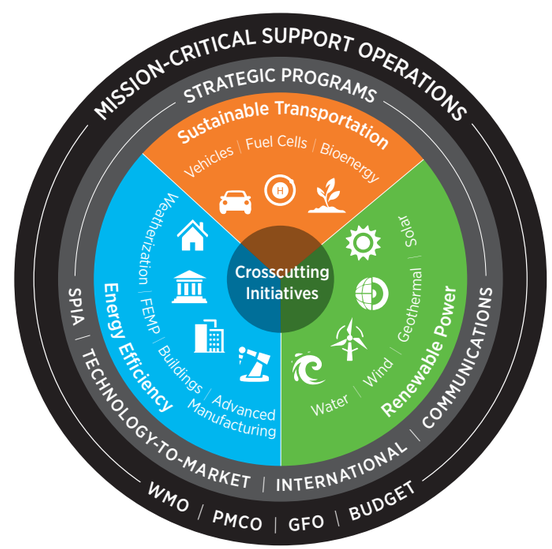
United States Department of Energy

Office of Energy Efficiency and Renewable Energy

2016–2020 STRATEGIC PLAN

In Brief



U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

EERE Vision
A strong and prosperous America powered by clean, affordable, and secure energy

EERE Mission
To create and sustain American leadership in the transition to a global clean energy economy

EERE's Activities are Guided by Key Organizational Principles
Economic Prosperity | Affordability | Reduced Environmental Impact | Energy Security | Consumer Choice

	Strategic Goals	Strategies	Success Indicators
SECTOR-SPECIFIC	Goal 1: Accelerate the development and adoption of sustainable transportation technologies	Strategies to achieve the first four Strategic Goals are organized into three areas: • Cost reduction and performance improvement • Technology validation and risk reduction • Market barrier reduction	The plan includes 39 indicators that reflect interim milestones or end goals of strategies. Many of these indicators directly align with larger federal goals and provide what we anticipate EERE's contribution to be. Given different technologies' life cycles, indicator target years range from 2017–2035, with a majority in the 2020 and 2030 timeframes. Some indicators map to single strategies while others map to several strategies.
SECTOR-SPECIFIC	Goal 2: Increase the generation of electric power from renewable sources		
SECTOR-SPECIFIC	Goal 3: Improve the energy efficiency of our homes, buildings and industries		
CROSS-CUTTING	Goal 4: Stimulate the growth of a thriving domestic clean energy manufacturing industry		
CROSS-CUTTING	Goal 5: Enable the integration of clean energy into a reliable, resilient, and efficient electricity grid	Strategies to achieve Goals 5, 6 and 7 are cross-cutting in nature.	
CROSS-CUTTING	Goal 6: Lead efforts to improve federal sustainability and implementation of clean energy solutions		
CROSS-CUTTING	Goal 7: Enable a high-performing, results-driven culture through effective management approaches and processes		

EERE's Work is Prioritized According to The Five EERE Core Questions

Impact	Additionality	Openness	Enduring Economic Impact	Proper Role of Government
Is this a high-impact problem?	*Will EERE funding make a large difference relative to existing funding from other sources, including the private sector?*	*Are we focusing on the broad problem we are trying to solve and open to new ideas, approaches, and performers?*	*How will EERE funding result in enduring economic impact for the United States?*	*Why is this investment a necessary, proper, and unique role of government rather than something best left to the private sector?*

Overview

EERE's vision is a strong and prosperous America that is powered by clean, affordable, and secure energy. In the context of this vision, EERE's mission is to create and sustain American leadership in the transition to a global clean energy economy. This mission requires that EERE perform its work at the intersection of national energy, economic, and environmental systems, as well as across industry and institutional organizations.

In order to realize its vision and achieve its mission, EERE has created a set of strategic goals that are both sector specific and crosscutting. These goals are:

1. **Accelerate the development and adoption of sustainable transportation technologies**
2. **Increase the generation of electric power from renewable sources**
3. **Improve the energy efficiency of our homes, buildings, and industries**
4. **Stimulate the growth of a thriving domestic clean energy manufacturing industry**
5. **Enable the integration of clean energy into a reliable, resilient, and efficient electricity grid**
6. **Lead efforts to improve federal sustainability and implementation of clean energy solutions**
7. **Enable a high-performing, results-driven culture through effective management approaches and processes.**

While the specific programs and initiatives to address these goals may change over time, all EERE activities are guided by the key organizational principles of **economic prosperity, affordability, reduced environmental impact, energy security, and consumer choice**. These principles parallel fundamental areas of national interest and underpin all of EERE's work to ensure lasting value from the work we do.

Each strategic goal section lays out a set of strategies, corresponding to the three phases of our investment approach, describing the actions that EERE will take to achieve that strategic goal. Where appropriate, our strategies are organized into three areas:

- **Cost Reduction and Performance Improvement**—applied research and development of components or whole technology systems.
- **Technology Validation and Risk Reduction**—confirming the performance of technologies, both in controlled laboratory and real world conditions, and providing benchmarks for performance and durability—all to reduce uncertainty for investors.
- **Reducing Market Barriers**—addressing specific gaps in market development, such as a lack of reliable product information, inconsistent regulatory environments, or inadequate skill standards for the clean energy workforce.

Each strategic goal has a set of associated Success Indicators that describe intermediate or ultimate targets that, if and when achieved, will affirm that EERE is successfully on track toward that goal. Success Indicators are intended to be data driven and selected to be challenging and meaningful to accomplish. Each Success Indicator is established using a combination of market data and detailed system high volume cost modeling, with market data increasingly used as technologies become commercially available.

The EERE Investment Approach

EERE designs its portfolio to make a significant impact in transforming the national energy landscape and maximizing the value it delivers to the taxpayer. Ultimately, EERE's goal for its investments is to make clean energy technologies and services more available and reliable while lowering their direct and indirect costs, both to energy users and society as a whole. EERE performs extensive analysis, based on a detailed understanding of energy costs and market structures, to project which investments offer the highest impact. The EERE investment approach is designed to address specific gaps in the technology development pathway—areas where the private sector or other non-government stakeholders are unable to make the required investments to the scale or in the timeframe required for clean energy technologies to be commercialized.

Even in this critical role, each EERE investment is closely scrutinized based on our Five Core Questions to ensure the highest return for taxpayer supplied funds.