

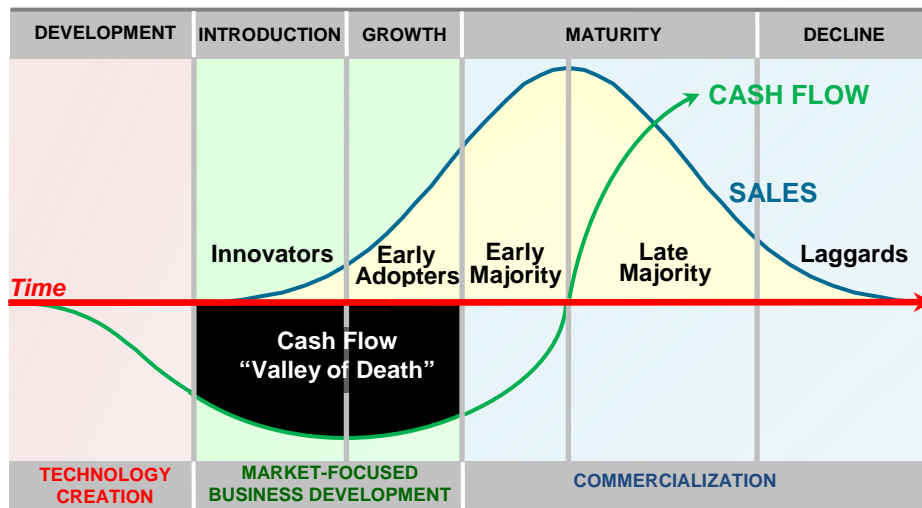
# Technology Deployment Business Plan Executive Summary

## Introduction

The Office of Energy Efficiency and Renewable Energy (EERE) is focused on broad market adoption of clean energy technologies that strengthen the economy, protect the environment, and reduce dependence on foreign oil. A key component of this effort is the development of new technologies and transitioning these technologies to commercial market solutions.

EERE's Federal Energy Management Program (FEMP) can facilitate the execution of this vision by leveraging its reach into the Federal market through the understanding of Federal agency needs. Early stage energy technologies often fail in commercialization as they enter the cash flow "valley of death", characterized by heavy investment requirements before the growth of sales.

By providing an early marketplace for these emerging technologies, the Federal government can serve as a bridge across this valley, and serve to accelerate the acceptance and adoption of innovative EERE clean energy technologies.



## Vision and Mission

FEMP is creating a Technology Deployment program to facilitate the Federal market for emerging clean energy technologies. The Program's mission is to accelerate acceptance and adoption of innovative EERE products in the Federal sector, supporting the transition of clean energy technologies from research and development to successful commercialization.

### **FEMP's Technology Deployment Mission**

To accelerate acceptance and adoption of innovative EERE products in the Federal sector

## FEMP's Role in the Federal Market for Clean Energy Technologies

EERE is very effective at supporting the research and development of innovative technologies. FEMP assistance is designed to accelerate adoption of those technologies in Federal facilities moving early-stage technologies past development to market adoption. As the nation's largest energy consumer, the Federal Government can serve as the bridge from technology creation to demonstration and deployment while leading by example. FEMP, through its own mission—to facilitate the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship—and existing partnerships and services is well-positioned to accelerate the acceptance and adoption of innovative EERE products in the Federal sector.

### **Program Goals and Measurement**

Federal market uptake of emerging technologies and energy and GHG savings achieved

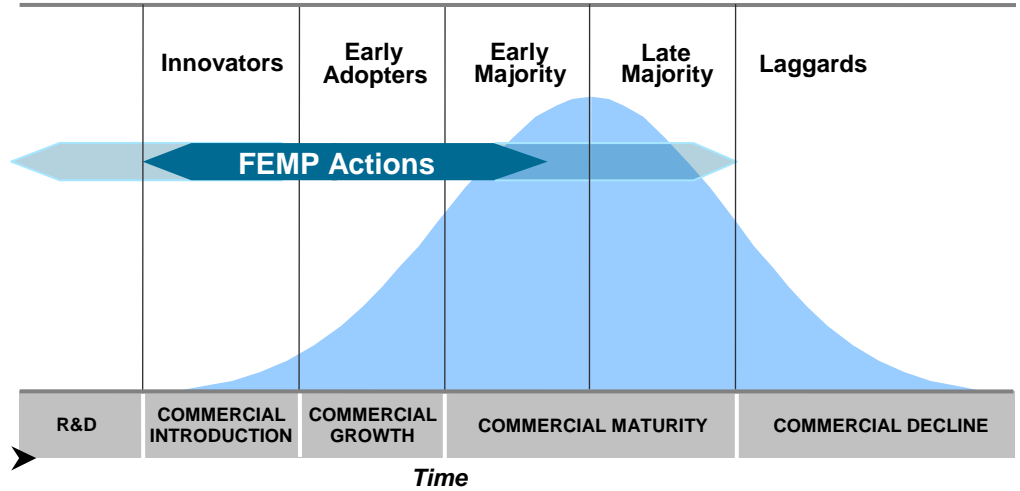
## FEMP's Technology Deployment Program Goals and Objectives

The success of FEMP's Technology Deployment Program is almost entirely defined by the Federal market uptake of EERE emerging clean

energy technologies and the energy and greenhouse gas (GHG) savings achieved by the deployment of those technologies. Although, FEMP already provides many efficiency and renewable energy deployment services, the program has not been organized to focus on optimizing the Federal use of emerging clean energy technologies. By creating the Technology Deployment Program with these goals and objectives, FEMP is well-positioned to help ensure the accelerated acceptance and adoption of innovative EERE products in the Federal sector.

## Services Provided by the Technology Deployment Program

The value chain for bringing innovation to the commercial and Federal marketplace consists of a series of linked activities from idea generation and selection, research and development, and demonstration and promotion through adoption and growth in the commercial arena. FEMP services are focused to create the effective linkages of upstream research and development with commercial deployment to accelerate acceptance and adoption of innovation in the Federal sector.



FEMP technology deployment support focuses on assisting Federal agencies in overcoming the barriers to commercialization of emerging technologies primarily in the early stages of the market lifecycle, the “introduction” and “growth” stages. In each of these stages, FEMP’s goal is to assist emerging technologies in gaining market traction, demonstrating commercial viability, and refining business models through access and adoption by the Federal market. This includes addressing lack of awareness, the need for performance verification, design tools, and technical guidance, and the need to demonstrate viability in federal applications. In later stages of the market lifecycle, FEMP support includes facilitating widespread Federal deployment of high priority technologies through the FEMP-Designated Products program, promotion in the ESPC and UESC markets and promoting these products through best practices and benchmarking tools.

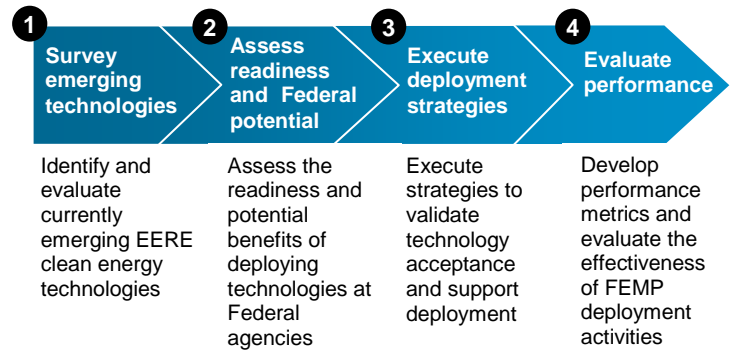
Market Stage	Primary Commercialization Goal	FEMP Technology Deployment Services
<b>PRODUCT RESEARCH AND DEVELOPMENT</b>	<ul style="list-style-type: none"> <li>Market readiness</li> <li>Concept development and testing</li> </ul>	<ul style="list-style-type: none"> <li>Provide Federal test beds for technology testing</li> <li>Increase awareness of EERE technologies in development</li> </ul>
<b>INTRODUCTION</b>	<ul style="list-style-type: none"> <li>Establish market</li> <li>Build product awareness and demand</li> </ul>	<ul style="list-style-type: none"> <li>Identify emerging EERE clean energy technologies</li> <li>Assess technologies by readiness, feasibility, agency needs, and potential benefits</li> <li>Provide feedback to technology developers through EERE</li> <li>Validate technology performance claims</li> <li>Demonstrate technologies at Federal sites</li> <li>Create a technology “Tool Box” for agencies</li> </ul>
<b>GROWTH</b>	<ul style="list-style-type: none"> <li>Increase market share</li> <li>Meet customer needs/quality</li> <li>Efficiencies to reduce costs</li> </ul>	<ul style="list-style-type: none"> <li>Educate and inform federal energy/facility managers</li> <li>Revise Federal standards/specifications</li> <li>Provide direct technical assistance for federal sites</li> <li>Respond to industry requests through EERE Program offices</li> </ul>
<b>MATURITY</b>	<ul style="list-style-type: none"> <li>Maintain market share</li> <li>Differentiate product</li> <li>Expand distribution channels</li> </ul>	<ul style="list-style-type: none"> <li>Expand deployment by facilitating Federal performance contracting vehicles</li> <li>Maintain “FEMP-Designated” clean energy technologies recommendations</li> <li>Support technologies through best practices recommendations</li> </ul>

## Service Offerings

The core business of the Technology Deployment Program consists of four primary service offerings:

(1) **Survey emerging EERE clean energy technologies and Federal Demand.** A technology evaluation team will identify, understand, and catalog promising technologies under development at EERE, on an ongoing basis. FEMP will dedicate resources to partner and coordinate with EERE technology development programs to facilitate this process. This inventory, provided with potential Federal application opportunities, will be made available to Federal energy and facility managers through appropriate distribution channels. Simultaneously, FEMP will conduct market analyses and develop survey instruments in order to assess the demand for EERE technologies across its Federal customers.

(2) **Assess technologies for Federal deployment potential.** FEMP will employ a Federal technology acceptance protocol to assess the readiness and feasibility of deploying technologies at Federal agencies. Criteria used in selecting technologies include (1) availability, (2) market maturity and lack of Federal market penetration, (3) technical feasibility and system applicability for Federal agencies, (4) cost-effectiveness, (5) energy efficiency, (6) GHG reduction potential, (7) Federal agency needs, and (8) potential market impacts of deployment in the Federal sector. The ultimate goal is to select emerging technologies that have greatest potential energy and GHG reduction benefits compared to costs, and largest potential market.



(3) **Execute deployment strategies.** Deployment actions are designed to overcome barriers inherent in the early market stages. For technologies entering market introduction, FEMP will focus on performance verification and demonstration of technologies with promising deployment potential at Federal sites. A robust technology “tool box” and FEMP technical assistance will support agencies in identifying emerging clean energy technologies and understanding how to apply those technologies to reduce energy consumption and GHG emissions. For more mature technologies, FEMP will support deployment through identification of optimal Federal application opportunities, direct technical assistance for federal sites, and use of performance contracting vehicles available to the federal government. Promotion activities will include FEMP publications and online communities.

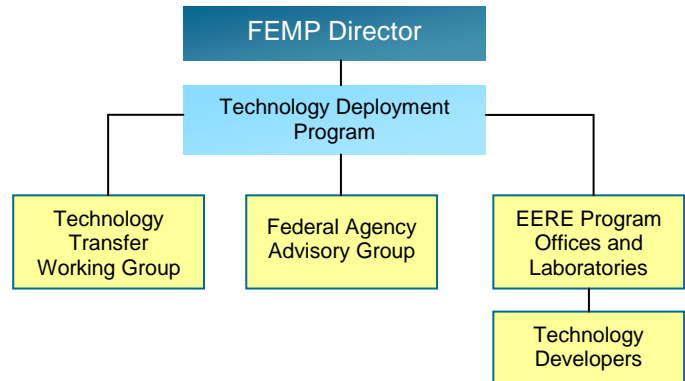
(4) **Evaluate the effectiveness of FEMP deployment activities.** FEMP will develop performance goals and metrics to measure effectiveness of its Technology Deployment Program. Metrics will assess Federal technology penetration and FEMP’s ability to scale technology implementation. Based on these evaluations, FEMP will refine market deployment strategies to improve clean energy technology market development.

## Organization and Management

The Technology Deployment Program will be organized under the FEMP Director.

The program consists of the following three components:

- Technology Transfer Working Group.** This group is responsible for identifying and assessing the Federal deployment potential of promising technologies under development at EERE, and other organizations, and for developing deployment strategies.
- Federal Agency Advisory Group.** This group will advise FEMP on market conditions relative to emerging technologies, including communication strategies, technical assessment needs, and barriers to deployment. Membership in the Group will include officials from: GSA Office of High Performance Buildings, DoD, US Navy TechVal Program, EERE Building Technologies Program, DOE National Laboratories, and other Federal agencies and programs (to be determined).
- EERE Program Offices and Laboratories.** These organizations are the key technology developers and technology advisors. FEMP is establishing liaisons to interact with EERE program offices, laboratories, and technology developers and identify, understand, and catalog promising technologies under development.



## Supporting Partners and Stakeholders

Federal agencies are FEMP’s primary customers, frequently turning to FEMP for advice on technologies and procurement vehicles to meet their energy goals and rising energy costs. FEMP is uniquely positioned to leverage these existing relationships to promote and execute potential opportunities to deploy emerging clean energy technologies at Federal sites. FEMP will also collaborate closely with other EERE programs and laboratories to identify new technologies and provide the linkages necessary for successful deployment in the Federal sector.

## Funding

FEMP is currently estimating costs to stand up the Technology Deployment Program. Start-up costs will be funded from the FY 2011 FEMP budget for development and updating of the Technology Matrix (list of promising EERE technologies), formation and management of the Advisory Group, and development of the FEMP Technology Transfer business plan. Additional funding will be necessary for technology evaluations, project technical support, communications, cost sharing projects with agencies, and program reporting and evaluation. Annual funding requirements will be established in the final plan documents. The funding is anticipated to be new funding for FEMP specifically to support Technology Transfer.

FEMP anticipates that 3-5 new Full Time Equivalent (FTE) positions will be required to fully staff this new initiative. These new staff FEMP members will be charged with management of all technology transfer activities including organization and management of the new working groups and coordination with EERE program offices.