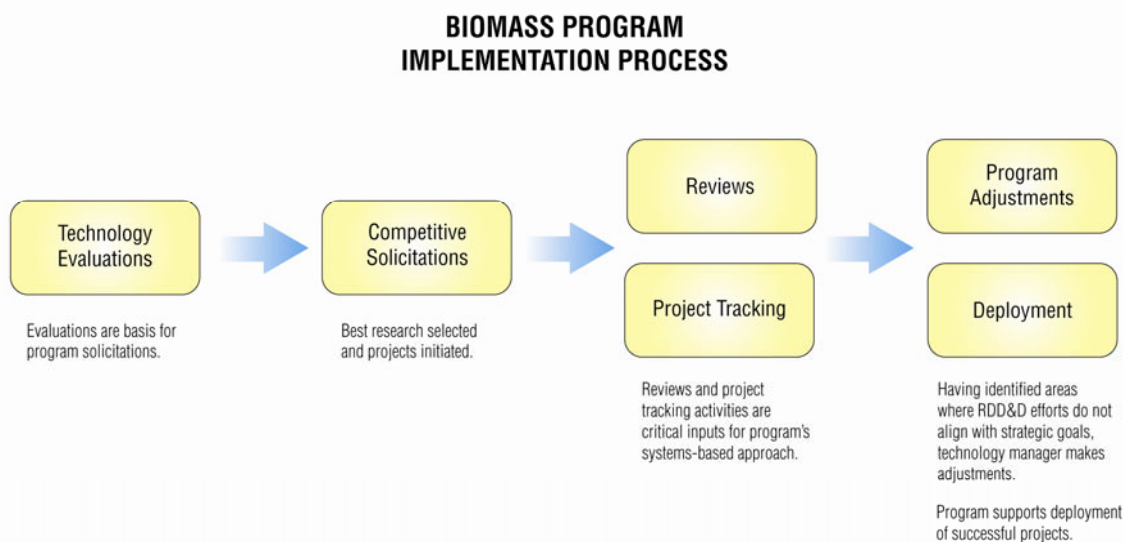


Biomass Program Implementation

Introduction

The Biomass Program takes a systematic approach to program implementation. Elements of this approach include the evaluation of new technologies, competitive selection of projects and partners, review of program and project improvement, project tracking, and portfolio management and adjustment. The program's implementation process is depicted in the chart below and implementation activities are summarized on the following pages.



Technology Evaluations

Before investing in new technologies, the Biomass Program evaluates the potential cost, performance, and reliability of proposed research. The program works with subject matter experts from the National Laboratories, universities, and the private sector to conduct technology assessments. An example is a National Renewable Energy Laboratory study titled *Biochemical Production of Ethanol from Corn Stover: 2007 State of Technology Model*, available at <http://www.nrel.gov/docs/fy08osti/43205.pdf>. This type of evaluation sets the stage for the program's development of competitive solicitations.

Competitive Solicitations

Once the program has evaluated potential technologies and identified research pathways, projects are selected through competitive solicitations. Use of competitive solicitations ensures that the best possible research and researchers are selected to develop new technologies. It also provides a transparent mechanism to ensure accountability and public confidence in the work. Open Biomass Program solicitations can be viewed at http://www1.eere.energy.gov/biomass/biomass_solicitations.html. Past solicitations are available at http://www1.eere.energy.gov/biomass/past_solicitations.html.

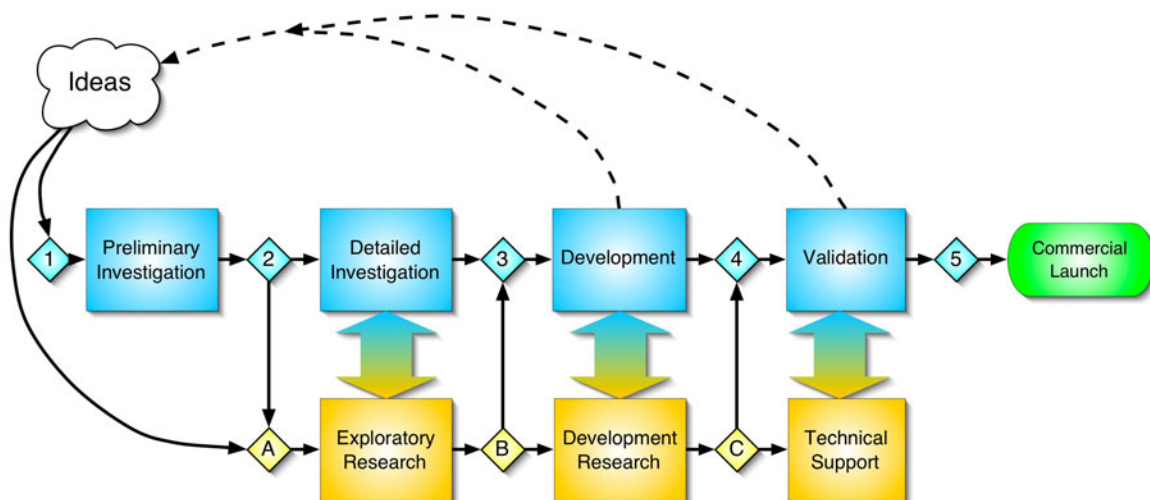
Reviews

The Biomass Program conducts peer reviews and Stage Gate reviews to assess progress and promote program and project improvement:

Peer Reviews – The program organizes subprogram element peer reviews and a program peer review at least biennially. The emphasis of the program peer review is on the portfolio as a whole to determine whether or not it is balanced, organized, and performing appropriately. In contrast, the emphasis of the subprogram element reviews is on the projects and whether or not projects are performing appropriately and contributing to element goals. The peer review process is led by an independent steering committee that selects independent experts to review both the program and technical element portfolios. The review provides feedback on program and portfolio performance and identifies opportunities for improved program management and gaps or imbalances in funding that need to be addressed. By addressing these gaps and imbalances, the program will continue to stay focused on the highest priorities. The 2007 peer review report is available at http://www1.eere.energy.gov/biomass/pdfs/2007peerreview_fullreport.pdf.

Stage Gate Reviews – The program conducts stage gate reviews at the project level. The stage gate process is an approach for making disciplined decisions about research and development that lead to focused process and/or product development efforts. Specifically, the program uses the process to guide decisions on which projects to include in the program's portfolio; align R&D project objectives with program objectives and industry needs; provide guidance on project definition including scope, quality, outputs, and integration; and review projects to evaluate progress and alignment with the program portfolio. Information on Biomass Program stage gate management is found at <http://devafdc.nrel.gov/pdfs/9276.pdf>.

Biomass Program Stage Gate Process



Project Tracking

Through project tracking activities, the Biomass Program monitors the status of competitive solicitations, applications, selections, schedules, project contract completions, new competitions, and other ongoing information for all technology systems under development. An overview of biomass project tracking is found at http://obpreview07.govtools.us/review/documents/Kevin%20Craig-PMC%20Overview%20-%20OBP%20Peer%20Review%2011-14_190_1_-1_.pdf.

Systems Engineering

Systems engineering is the process of leading the end-to-end technical development of complex systems. The Biomass Program utilizes a systems-based approach to manage the complexity of achieving its mission. Through this approach, the program aligns RDD&D efforts with its strategic goals. It also directs funding to the efforts that offer the most promise. A briefing on the Biomass Program's system integration efforts is available at http://obpreview07.govtools.us/review/documents/SI%20overview%20peer%20review%2011%2012%2007%20final_189_1_-1_.pdf. A second briefing on the program's CORE model-based systems engineering software is located at <http://www.nrel.gov/docs/fy07osti/40811.pdf>.

Portfolio Adjustments

Through its system-based approach, the Biomass Program identifies areas where RDD&D efforts do not align with strategic goals. The technology manager uses this information to make adjustments to the program portfolio to ensure that research supports established goals.

Deployment

The Biomass Program is promoting widespread adoption of advanced biofuels technologies by funding a range of deployment activities, including biorefinery plant construction and operation. To achieve increased biofuels production and use, it is critical that the program support "on the ground" activities such as fuel and co-product refining. Some key deployment activities in 2008 included the selection of commercial-scale and 10 percent-scale cellulosic biorefinery projects. The commercial-scale projects are demonstrating the use of a wide variety of cellulosic feedstocks, such as corn fiber, wood wastes, agriculture residues, municipal solid wastes, and potential energy crops. The goal is to demonstrate that integrated biorefineries can operate profitably once their construction costs are covered, and can be replicated. The 10 percent-scale projects are focused on novel approaches and are using a variety of cellulosic feedstocks to test new conversion processes. For more information on the program's technology deployment activities, including the biorefinery projects, visit <http://www1.eere.energy.gov/biomass/deployment.html>.

In addition to technology deployment, the program funds education and outreach activities to raise awareness of biofuels benefits and opportunities. These activities include development of informational materials, participation in trade show exhibitions and conference panels, and partnerships with federal, state, and non-profit organizations. The Biomass Program's communication and outreach activities are described at http://www1.eere.energy.gov/biomass/communications_outreach.html. The program also supports outreach activities conducted by the Regional Biomass Energy Feedstock Partnerships. These partnerships were established by DOE to identify local opportunities for feedstock production and ethanol production. Information on the Regional Biomass Energy Feedstock Partnerships is available at <http://bioenergy.ornl.gov/main.aspx>.