



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Project Management Center: Managing the Biofuels Portfolio

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Agenda

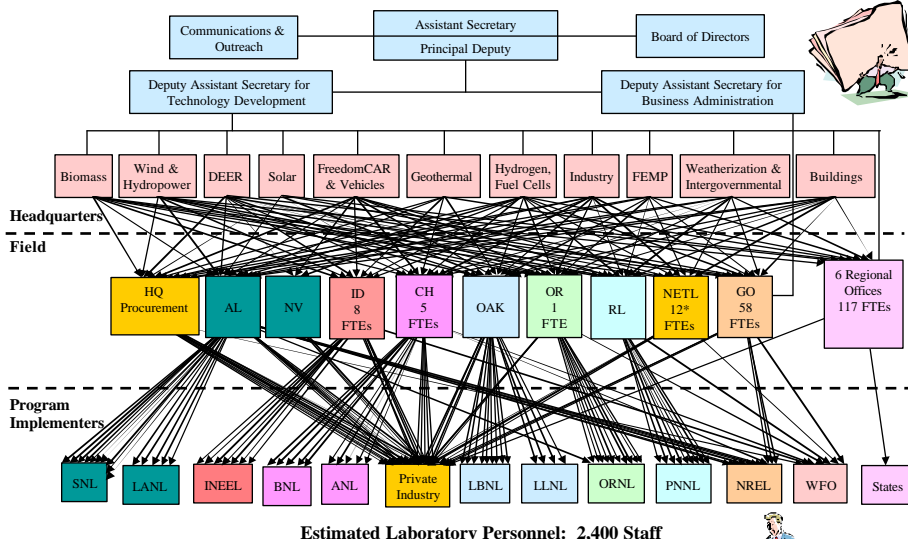
- Need for Project Management Center
- Key Functions
- Organizational Approach
- RDD&D Management
- Implementation of EPAct 2005
- Example Projects

The President's State of the Union Address

“Tonight, I ask Congress to join me in pursuing a great goal. Let us build on the work we’ve done and reduce gasoline usage in the United States by 20 percent in the next 10 years.”



“Old” Way



*NETL non-EERE employees working primarily for EERE
Note: 3,300 actions per year



What is the PMC?

“A dedicated field implementation capability with the sole purpose of providing common comprehensive management services (project, financial, legal, procurement) for the EERE Programs”



“New” Way

- ◆ Dedicated EERE Project Management Center
- ◆ “One way of doing business”
 - Common project management practices employed across EERE
 - Number of DOE implementation organizations reduced
- ◆ Result:
 - Integrated project management; well defined roles/responsibilities
 - Better responsiveness; more personnel dedicated “one-way” practice
 - Improved timeliness, accountability, and quality
 - Appropriate Federal oversight role
 - Reduced costs to DOE
 - EERE a better partner with stakeholders and customers

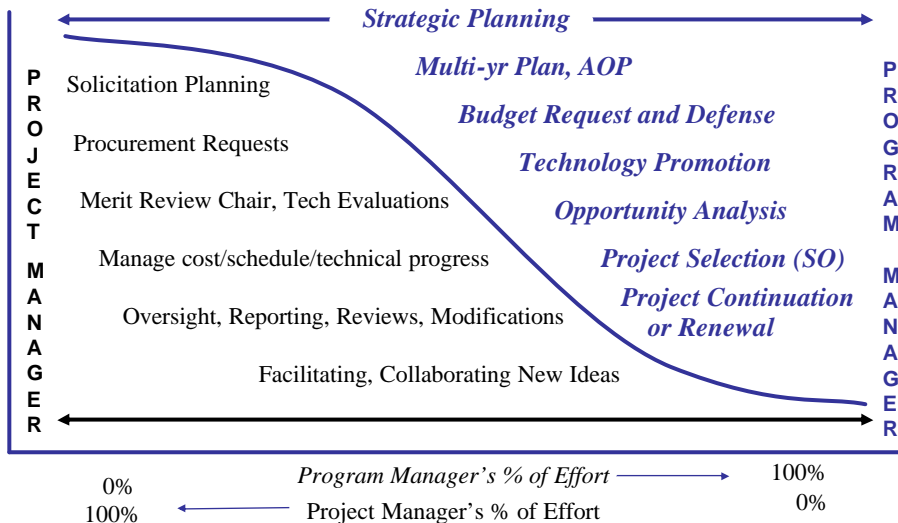


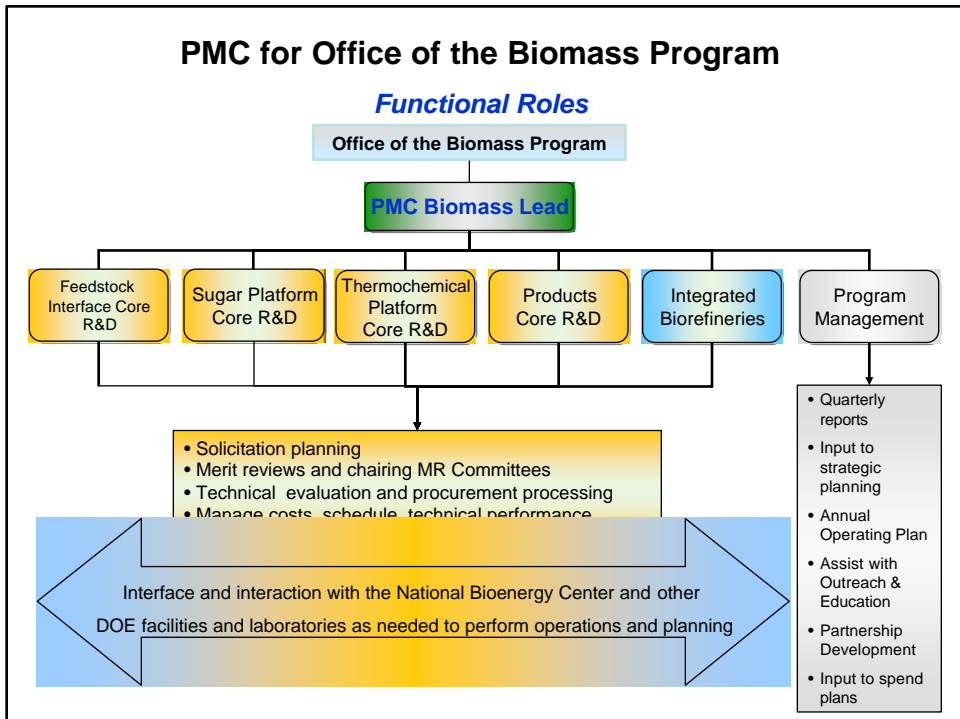
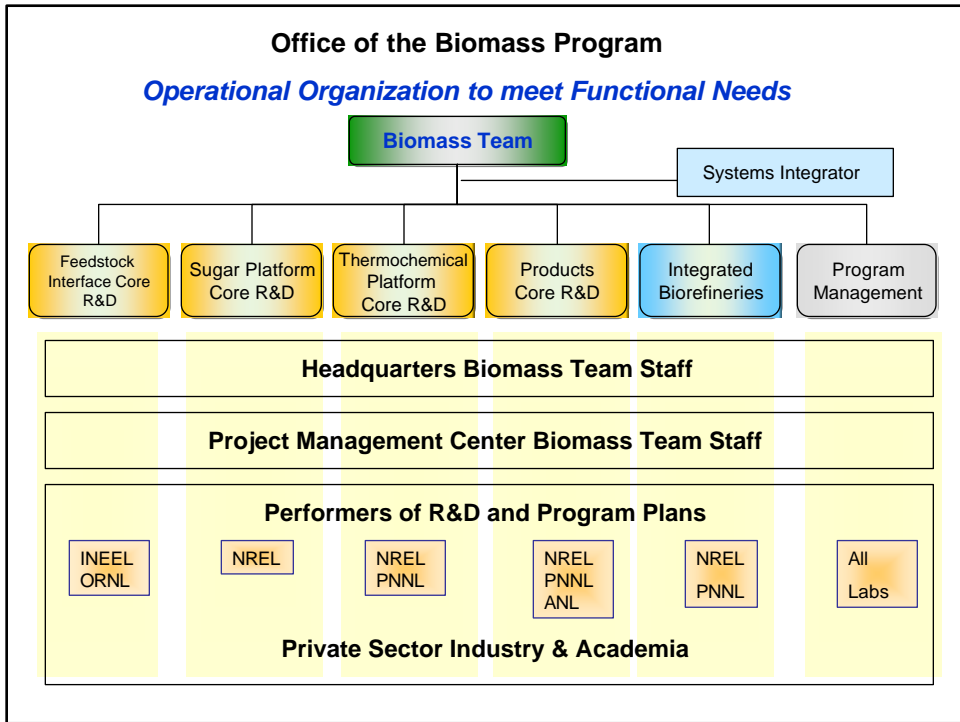
Roles & Responsibilities

	<u>Program Management</u>	<u>Project Management</u>
<u>Planning</u>	Plans and develops the overall program	Initiates and oversees the project
<u>Budget Formulation</u>	Prepares, justifies, and defends the program budget	Develops and submits the project budget to the Program Manager
<u>Program Implementation</u>	Executes the program budget and implements the program	Implements the projects
<u>Program Analysis and Evaluation</u>	Analyzes and evaluates the overall performance of the program	Analyzes and evaluates detailed performance of the project

Source: EERE SMS Overview

Melding Program Manager and Project Manager Functions



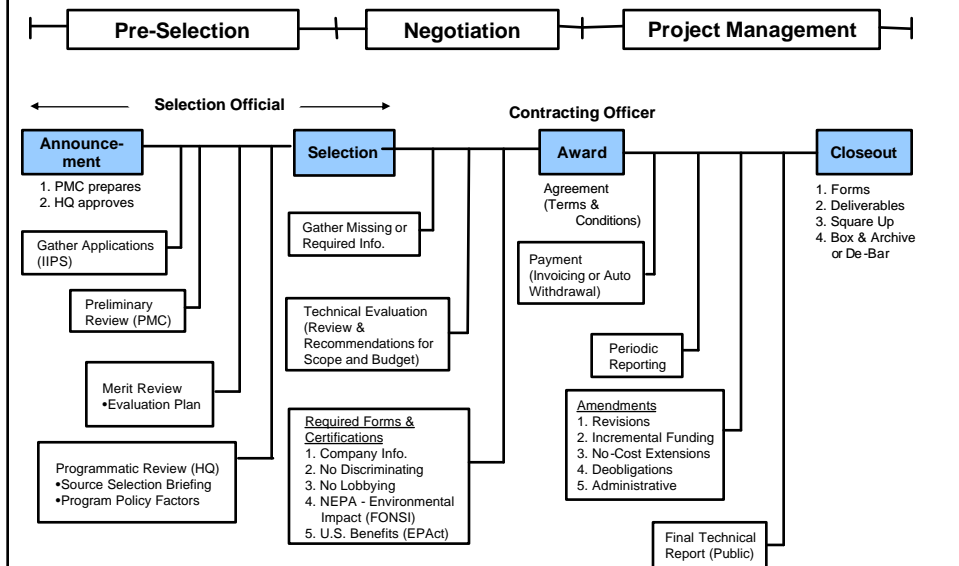


Project Management

- ◆ Manage project progress against SOW/milestones
- ◆ Conduct site visits and project reviews
- ◆ Maintain on-going relationship/communications with Principal Investigator and team members
- ◆ Review invoices/reimbursements
- ◆ Review and analyze progress reports
- ◆ Maintain project financial database
- ◆ Work with Systems Integrator to extract results for program analyses
- ◆ Keep HQ Program Manager apprised of progress and concerns
- ◆ Close out project
- ◆ Ensures projects are conducted within the requirements and regulations



Project Timeline



Collaborative Research, Development, and Demonstration

Fundamental and Applied R&D

- **Feedstocks:** integration of feedstocks with conversion processes
- **Conversion Technologies:** biochemical and thermochemical
- **Integrated Biorefineries:** systems integration, demonstrations, infrastructure development

Integrated Biorefineries

- **Systems Integration:** feedstocks, conversion, biopower, infrastructure
- **Demonstration:** pilot scale, commercial scale



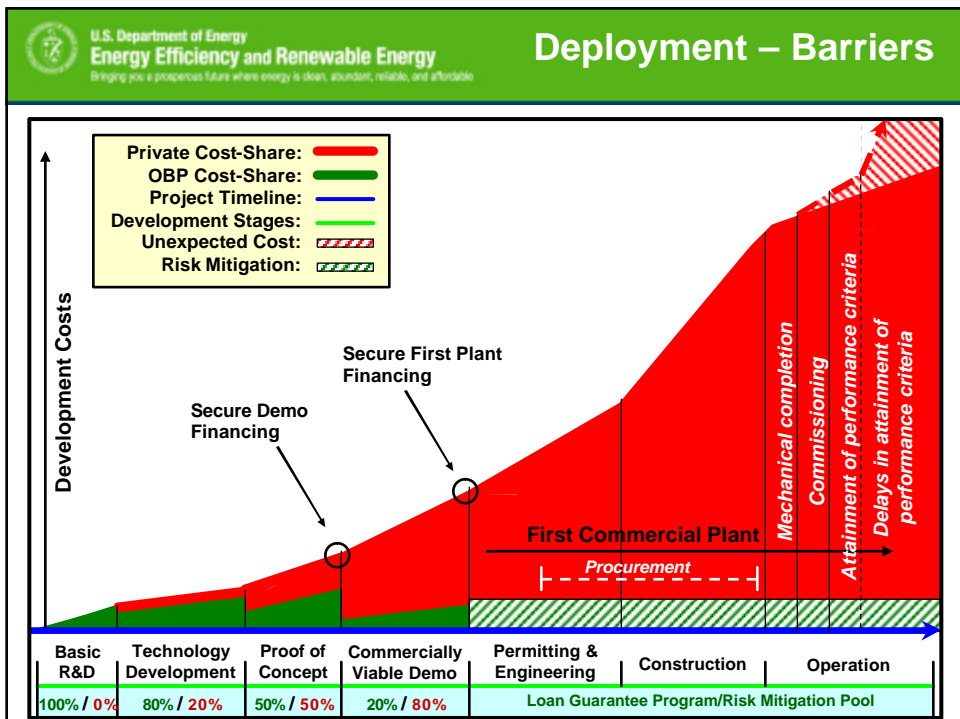
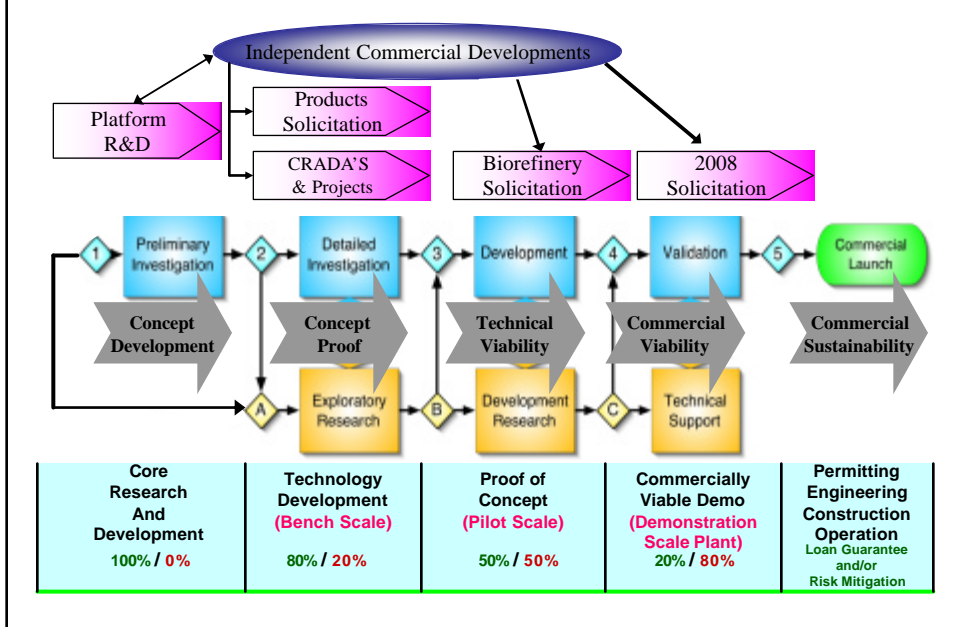
DOE efforts are paving the way for a strong, domestic bioenergy industry—
with commercial success possible in the next six years

The Energy Policy Act of 2005 *Accelerates Market Penetration Of Biofuels*

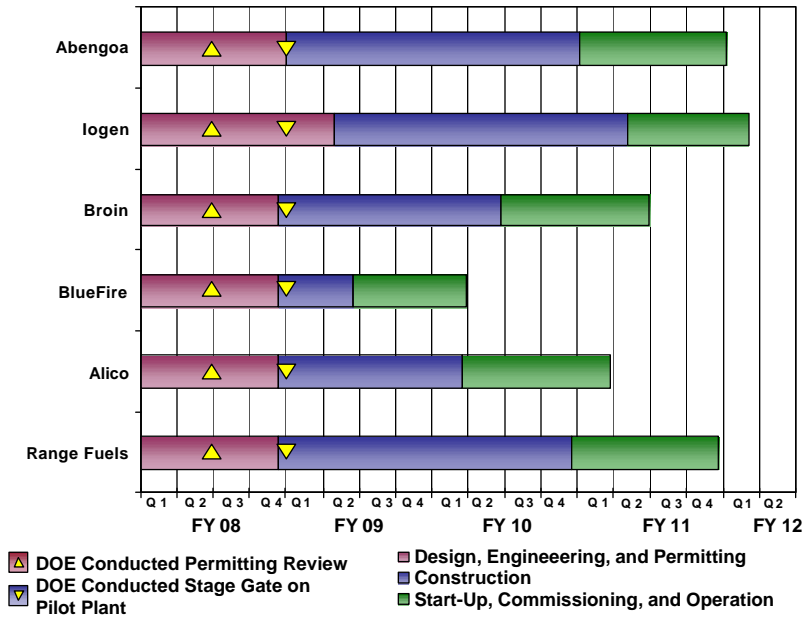
- **Section 932: Commercial Integrated Biorefinery**
 - 6 Projects selected: DOE value – up to \$385 million
 - Total project value – over \$1.2 billion
 - \$72 million in FY 2007 budget request
- **Section 941: Revisions to Biomass R&D Act of 2000**
 - *Vision* document released November 2006; updated *Roadmap* due May 2007
- **Section 942: Cellulosic Ethanol Reverse Auction**
 - Request For Information and Options papers completed
- **Sections 1510, 1511, and Title XVII: Loan Guarantees**
 - DOE issued guidelines under Title XVII in August 2006

Energy Policy Act of 2005 goals are integrated into core technology
platform priorities

Stage Gate – Project Management



EPA 932 Anticipated Project Timelines



Additional Slides

Cellulosic Biorefinery Solicitation

EPAct Section 932(d)

- Design, build, construct and operate a commercial-scale integrated cellulosic biorefinery
 - 40% Federal cost share of project
 - 6 projects selected
 - \$72 million planned for FY 07
 - \$385 million in total

Demonstration Scale Solicitation

- Release is TBD

Biofuels Loan Guarantees under EPAct

Loan Guarantees for the construction of cellulosic biorefineries

- §1510, §1511, Title 17

Common Characteristic of Loan Guarantees

- Project must be able to produce revenues to meet debt service
- Must be innovative & commercially viable
- Guarantees debt no greater than 80% of project costs
- Applicant must pay DOE guarantee fee to cover administrative costs
- DOE must provide a default fund from its appropriations for each project

Collaborative R&D is producing results in both biofuels and bioproducts

Achievements

- Substantial increases in yield of ethanol per ton of feedstock over last five years
- Development of enzymes with best-in-class performance in conversion of sugars from corn grain and stover to ethanol
- Development of high-value adhesives, plastics, foams, and coatings from oil crops and grain sugars



Cell phone casings made from bio-based polymers developed through DOE-industry cost-shared R&D

Using biomass for both biofuels and high-value bioproducts will enable more cost-effective operation of integrated biorefineries.

DuPont

GO13146: Integrated Corn-Based Bio-Refinery (ICBR)

Project Description

- 9/30/2003 – 12/31/2007
- Total DOE Budget: \$18,185,238
- Total Cost-Share: \$18,997,832
- Obligations to Date: \$15,834,674
- Plans for FY07 Obligations: \$2,300,000
- Partners: NREL, Diversa Corp., Deere & Company, and Michigan State University

Objectives, Drivers & Impacts

- The ICBR process will bring new technology to the conversion of corn and stover into fermentable sugars for parallel production of added value chemicals such as 1,3 propanediol and fuel ethanol.
- Demonstrate 95% and 90% yields on glucose and xylose, respectively, and 80 g/L titer in the presence of 8 g/L acetate.

Results

- Discovery of a mutant that allows for co-fermentation of glucose and xylose rather than sequential fermentation
- Major systems test run at NREL pre-pilot/pilot scale – spring 2007



Loudin, TN - PDO Facility

PMC Biomass Database

- Retains current and historic project information including:
 - Contact information, project identifiers (CPS, CID), WBS
 - Financial information including
 - Data from STARS financial system (non-lab only)
 - Data from Quarterly Financial plans (all projects)
 - Annual OBP spend plans
- Allows GO the ability to answer HQ data calls quickly and accurately.
- Produces monthly uncosted reports and monthly STARS accruals.

20 in 10 Summary

- Increase supply of renewable and alternative fuels
 - Set Alternative Fuels Standards (AFS) at 35 billion gallons per year by 2017
 - 5X the current Renewable Fuels Standard for 2012
 - **15%** of projected annual gasoline use in 2017
- Increase vehicle efficiency
 - Reform and modernize CAFÉ
 - **5%** of projected annual gasoline use in 2017