

Bioenergy Technologies Office

2017 Program Management Review

Demonstration & Market Transformation

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Thank You!

- Average Weighted Scores ranged from **5.25** to **7.92**, with a median of **7.63**
- **Top** performing project:
 - ORNL – Fire Standards, Codes, and Prevention in IBRs

	SunSetting	Ongoing
Average Scores	7.58	6.95

- DMT program focuses on mitigating commercialization risks in technology and market adoption of biofuels
 - Demonstration of integrated conversion processes at scale
 - Changing to “Advanced Development & Optimization”
 - Biofuels distribution infrastructure and end use activities
 - 2 Lab projects, (Co-Optima – separately reviewed)
- Four projects reviewed
 - Two Integrated Biorefineries (IBRs)
 - POET Project Liberty - pioneer scale
 - Mercurius Biofuels - pilot scale
 - Two market adoption projects
 - Oak Ridge National Lab (ORNL) – Fire Codes and Standards
 - Brookhaven National Lab (BNL) – Bio-Oil Deployment in Home Heating
- Defense Production Act projects – not reviewed

- DMT Program continues to have a tremendous impact on the commercialization of biofuels
 - Yield of products at scale (pilot)
 - Availability of production facilities (pioneer commercial)
- POET Project Liberty
 - Demonstrate viability of commercial plant
 - Learnings drive further R&D
 - Open up the debt market
 - Lessen the dependence on credit enhancement programs
 - The world is watching
- ORNL Fire Codes
 - Addresses an industrywide problem
 - Nature in action

- BETO has good innovative technology investment strategy including both breadth and depth
 - Current portfolio – lean but growing again
 - POET - innovations in operation and retrofit of process units
 - Mercurius – diversification to lesser know pathways and technologies
- BNL Bio-Oil project innovative in that it identified a large potential market with lower barriers to entry
 - Speeds up time to market, modest funding
- BETO's stage gate review process
 - Rewards progress, not effort
 - Prevents wasteful spending on projects that are not progressing
 - Go, No-Go, Go Differently
 - *No one wants to stop*

- DMT program and Projects have significant synergies with the industry at large, particularly
 - Biomass handling and preprocessing
 - Improving conversion yields
 - Fuels qualification
 - Identification of market opportunities
 - Assists with financing challenges
- While BETO Team Members work informally to capitalize on the synergies within the program, it may be beneficial to establish more formal links between BETO projects
 - Coordination with Bio-Oil projects in Conversion or DMT may have mitigated this problem
 - *Can't force linkages but can suggest*

- Funding - Panel would like to see more funding in the technology side of DMT
 - Two new FOAs – re-broaden portfolio
 - Co-Optima – central to market development focus
- Focus National Lab projects on availability issues versus yield
 - Projects in the Conversion and FCIC portfolios that focus on optimization of unit operations or generating data for use by other private and public researchers
- Feedback between the DMT and upstream efforts
 - To be a central focus of Advanced Development & Optimization

- Availability and Yield are the key commercialization metrics
- Beneficial for future pilot plants to be operated for more than 1,000 hours
 - *1,000 hours is challenging*
 - *Need to run to win*
- More focus on the operation of existing assets rather than construction may allow BETO to stretch the budget
- *Current and future FOAs will preserve funds for operations*

- More DMT Projects and Funding –
 - Key to get more projects into the DMT portfolio
 - Not all of them will be successful
 - While expensive, it is critical to have enough successful outcomes so that taxpayers see a return on their R&D
- Focus efforts by National Labs on availability (versus yield) outside the core technologies
 - Efforts such as ORNL Fire Codes and BNL Bio-Oil have a positive industry wide impact
- FOA's that use existing assets for long duration testing
 - Reduce the amount of resources allocated to developing greenfield assets, yielding more rapid results
- *We AGREE*

Thanks to Borka Kostova!