Bioenergy Technologies Office

2017 Program Management Review

Bioenergy Technologies Office Response

Jonathan Male
BETO Director
Arlington, Virginia
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   I. BETO Portfolio
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• 277 projects across the BETO portfolio were reviewed
• Approximately $300 M total funding reviewed
• 93% of Total BETO Portfolio was reviewed
Steering Committee Provided Accolades

• Launch of consortia to enhance collaboration between national labs and with industry
• Enhancing cross-discipline collaboration and communication
• Retaining and developing great staff
• Great project management (stage gates, cost share, etc.)
• Emphasizing value proposition
• Adaptability to changing market and technology trends
• Impact on the development of the Bioeconomy
• Innovative new initiatives, especially Co-Optima
Recommendation: BETO Portfolio

• Improve industry engagement
  – AOP-funded projects need more coordination with industry – Leveraging CRADAs with consortia
  – Address technical, policy, legal, and IP barriers to greater industry engagement – CRADA-Lite
  – Need more focus on valorizing real lignin streams from commercial facilities – Conversion: Lignin Utilization
  – Encourage use of DOE-funded process demonstration units

• Need to conduct an office-wide portfolio risk assessment

• Portfolio diversity
  – Early TRL Work – Exploring beyond TRL -> IRL -> SRL
  – Analysis to Illustrate Scenarios for Compelling Economics – TEA
  – Near-term Wins – Success Stories/Yardstick is changing
  – Industry Relevant Work

• Focus on aviation/medium and heavy-duty vehicles – Distillates are the opportunity

• Capitalize on oxygenated molecules in biomass – Functional equivalent molecules, bio-advantaged molecules/Co-Optima
• Collaborate with others to help build a bioenergy workforce – NASA

• More funding for DMT – ADO: Continuing to work on educating new management, Congress and OMB
Recommendation: Strategic Plan for a Thriving Sustainable Bioeconomy

• Prioritize bio-products investment in the near- and long-term:
  – DOE has sensitivities on products as a priority; more flexibility in research/less in development
  – Products must integrate with fuel
  – Analysis of energy future scenarios – for example Bioenergy Scenarios Model

• Better communicate the strategic plan of the Bioeconomy
  – Staff Meetings on Bioeconomy (BETO/Labs)
  – Roll out of Bioeconomy Action Plan (Labs)
  – The BETO Strategic Plan dove tails with the Bioeconomy
Recommendation: Technology and Market Trends

• Consider different carbon pricing scenarios in strategic planning
  – Agree; LCA should capture this & SCA is looking at this

• Collaborate with other DOE offices on R&D for using surplus Renewable Electricity
  – This was discussed at Bioeconomy 2017
Recommendation: Budget Priorities

- While algae technologies are important, they are disproportionately weighted in the portfolio
  – Congress has strongly supported AAS

- Waste-to-Energy represents an underfunded, yet very promising Area
  – Multiple workshops and strategic use of SBIRs to seed distinct, innovative R&D in this area

- Demonstration and Market Transformation is a critical function of the office
  – Agree; Pilot/Engineering scale drives research in new directions

- Emphasis should be placed on getting results from existing investments, rather than spreading funding too thinly
  – There has to be a portfolio balance between existing and emerging projects and FY18 budgets drove focus on priorities
Recommendation: Collaborations and Partnerships

- Collaborate with FCTO on hydrogen production and distribution efforts
  - BETO uses FCTO as a knowledge resource and needs renewable hydrogen cost competitive with SMR

- Collaborate with AMO on deploying bioeconomy technologies, particularly catalysis, process control automation, and CHP technologies
  - BETO engaged with AMO on process intensification, separations, and products

- Capitalize on complementarity of ARPA-E
  - Leverage ARPA-e efuels; some ARPA-e projects graduate to BETO

- Either the scope of the Biomass Research and Development Board should be expanded, or additional coordination by others in the two agencies is needed
  - BRD Board is 8 Agencies with invites to additional agencies as needed
  - Exchanged Details USDA-DOE
  - USDA/DOE Lab Summits
Thank You