



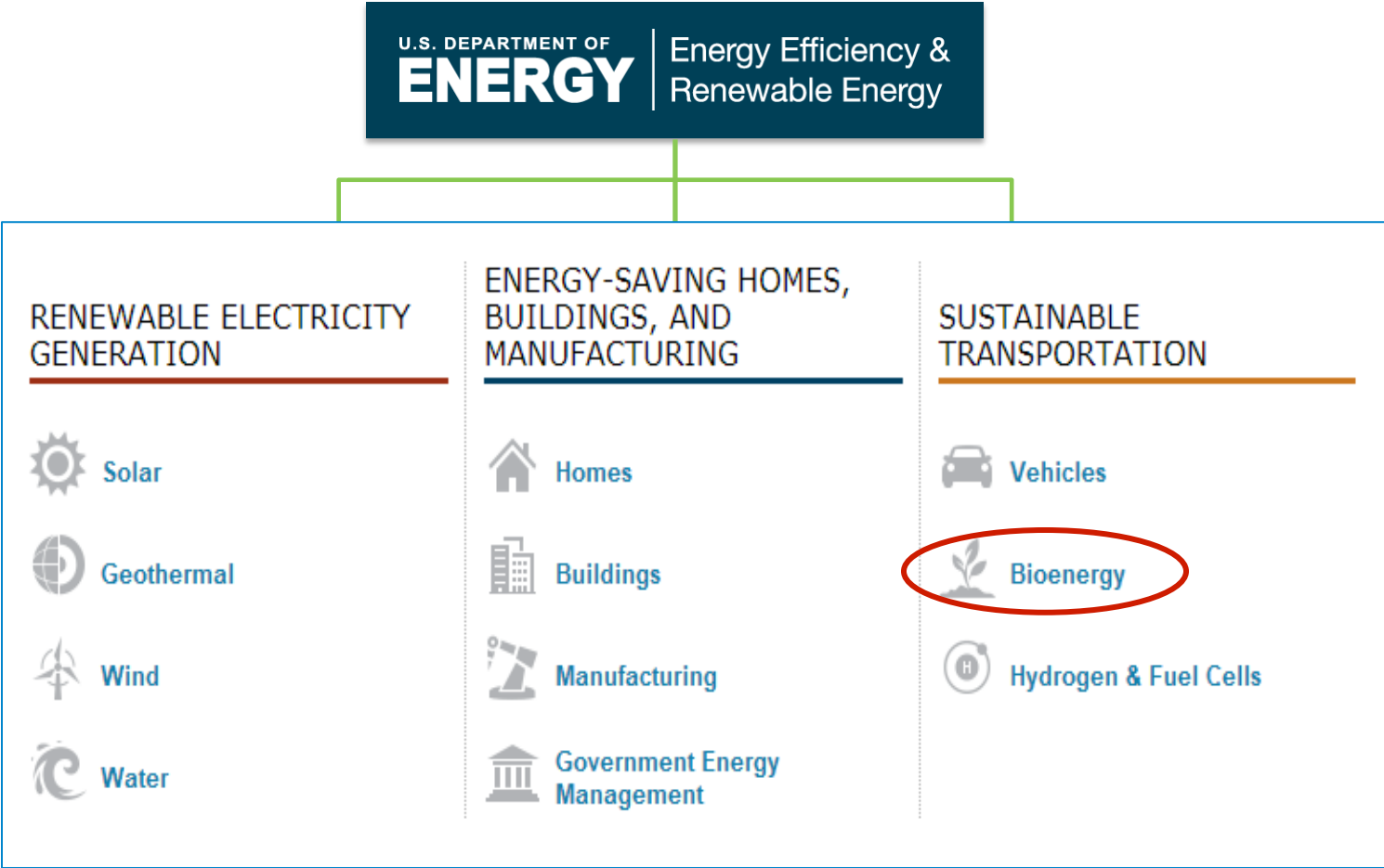
DOE Bioenergy Technologies Office: Overview of Feedstock Supply & Logistics and Sustainability Programs

Incorporating Bioenergy into Sustainable
Landscape Designs Workshop
Argonne, IL, June 24-26, 2014

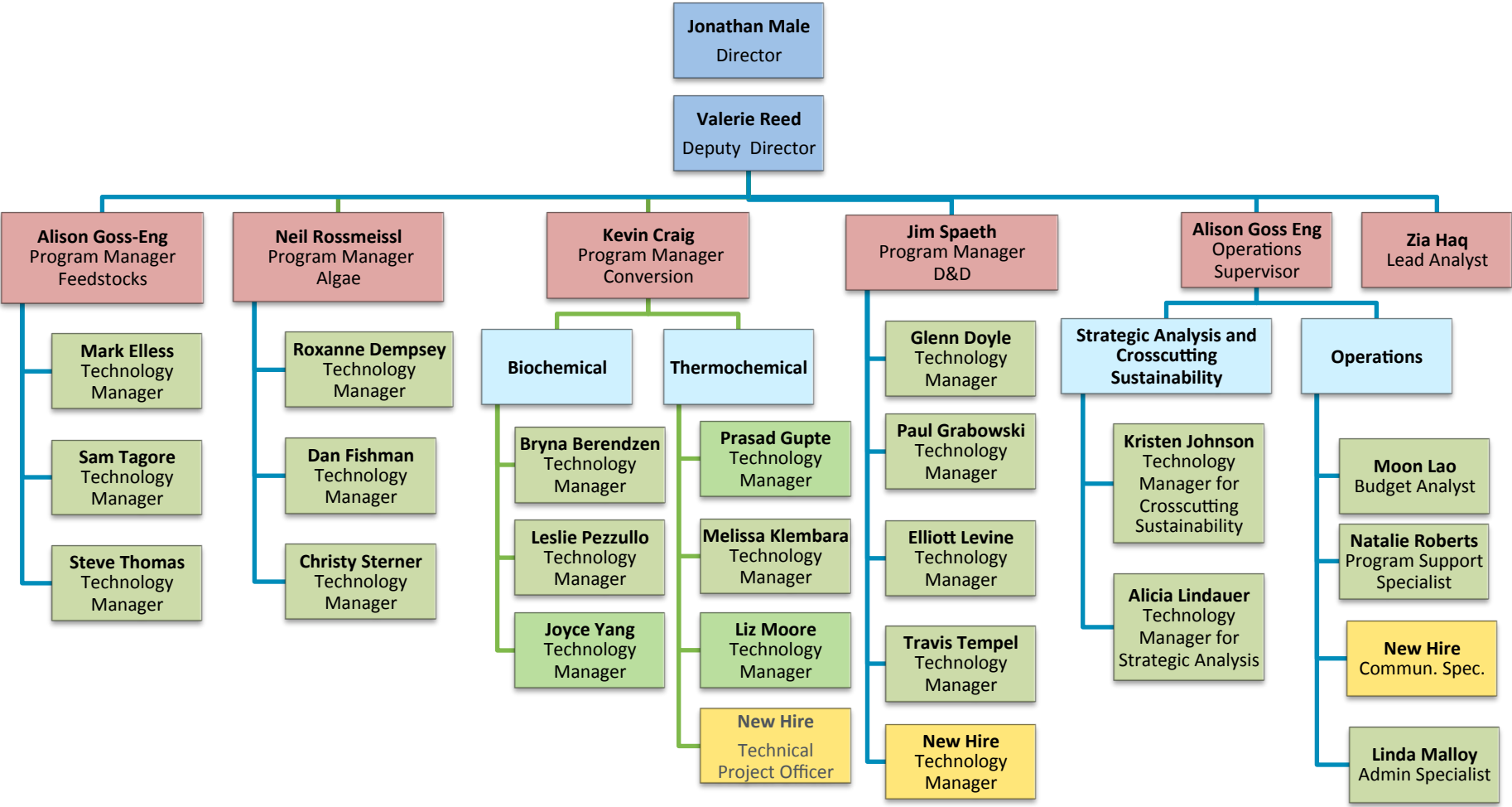
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U.S. Department of Energy (DOE)

EERE at a Glance



Bioenergy Technologies Office Organizational Chart



Bioenergy Technologies Office

Objective: Through targeted RDD&D, enable sustainable, nationwide production of advanced biofuels that that will displace a share of petroleum-derived fuels, mitigate climate change, create American jobs, and increase U.S. energy security.

Research, Development, Demonstration, & Deployment

Feedstock Supply

Develop sustainable and affordable feedstock supply and efficient logistics systems.



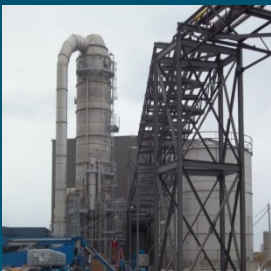
Conversion R&D

Develop commercially viable technologies for converting feedstocks into liquid transportation fuels and products.



Demonstration & Deployment

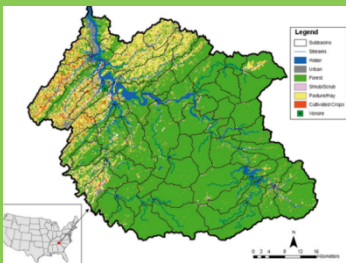
Validate integrated technologies at cost-shared pilot, demonstration, and commercial scale facilities.



Cross Cutting

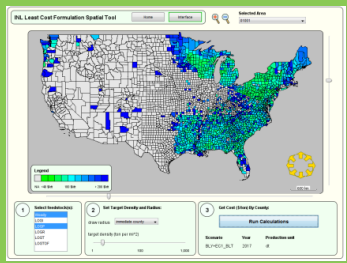
Sustainability

Promote the positive economic, social, and environmental effects of bioenergy.



Strategic Analysis

Conduct market, policy, environmental, and other analyses to inform planning and decisions.



Terrestrial Feedstocks Objectives

RD&D on feedstock production and logistics is critical to developing a reliable and sustainable supply of high quality, low cost feedstock necessary for the expansion of the U.S. advanced biofuels industry.

- **Production:** Support the sustainable production of a variety of types of biomass.
- **Logistics:** Support research and demonstration on economic, sustainable feedstock logistics systems to reliably supply an on-spec feedstock to future biorefineries.
- Focus on **cost, quality, quantity**.

Terrestrial Feedstocks Goals

Production

- Update national resource assessments based on results from Regional Partnership and published literature by 2014.
- Field-scale targeted scale-up demonstration for emerging energy crops linked to IBR's by 2017.
- Validate feedstock cost, volume and quality requirements for all BETO technology pathways by 2022.

Logistics

- National feedstock quality data collected and analyzed through the Biomass R&D Library using Regional Partnership data and industry partnership physical samples collected FY11-FY13 by 2014.
- Demonstrate \$80/dry ton feedstock cost at conversion reactor throat (including grower payment and logistics cost) by 2017.
- Demonstrate industrial-scale integrated advanced feedstock production and logistics systems, in conjunction with IBR program and/or industry by 2022.

Sustainability Strategic Goal

To understand and promote the positive economic, social, and environmental effects and reduce the potential negative impacts of bioenergy production activities.



Key Sustainability Priorities and Areas of Focus

- Quantify metrics/indicators across the bioenergy supply chain to understand impacts, synergies and trade-offs, and areas for improvement
- Develop approaches for increasing bioenergy production while maintaining or improving environmental performance, ecosystem services, and social benefits
- Advance understanding and implementation of landscape design and integrated land management
- Develop, identify, and promote more sustainable practices through publications, decision-support tools, and stakeholder interactions



BETO-Supported Projects Relevant to Landscape Design

- Biomass Production and Nitrogen Recovery (ANL)
- Designing Sustainable Landscapes (ORNL)
- Water Quality and Biodiversity (ORNL)
- Sustainable Feedstock Production-Logistics Interface (INL)
- Economics of Integrated Landscape Management (INL)
- Short Rotation Woody Biomass Sustainability (ORNL, USDA-USFS, U. of Georgia, Oregon State U., U. of Saskatchewan)
- Optimization of Southeastern Forest Biomass Crop Production (NCSU/Weyerhaeuser)
- Watershed Scale Optimization to Meet Sustainable Cellulosic Energy Crop Demand (Purdue University)
- Pathways Toward Sustainable Bioenergy Feedstock Production in the Mississippi River Watershed (University of Minnesota)



Workshop Objectives

- Convene a discussion on the usefulness and feasibility of using landscape principles to design sustainable bioenergy/row crop systems in the U.S. midwestern agricultural landscape.
- Through the workshop, participants are expected to develop an understanding of the state of the science, research needs, tools, and methodologies for the demonstration and monitoring of landscape bioenergy systems across the supply chain in the midwestern corn-belt region.
- A summary report of both workshops will enable diverse stakeholders to benefit from the discussion and move forward with next steps.

Acknowledgements

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Thank You
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