

Federal Programs Supporting Demonstration Of Concept

by Bill Hagy

Biofuels, Biopower, Biochemicals, and Biobased Products



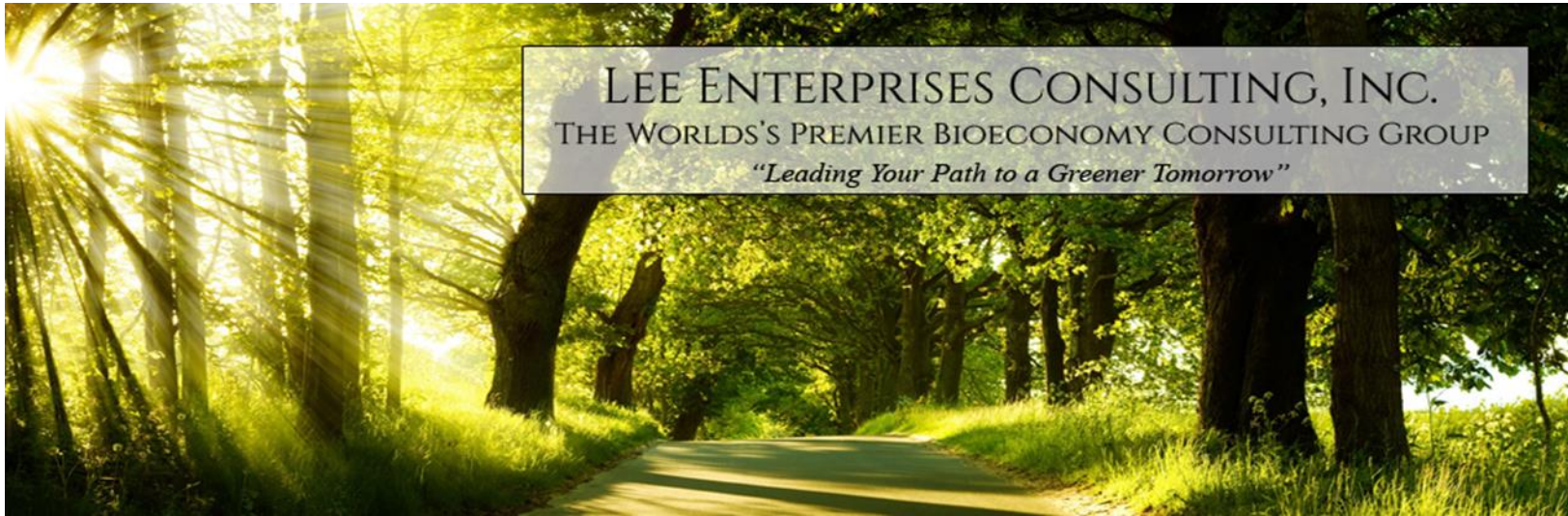
About Bill Hagy

Accredited
Member



Background:

- 45 years of combined experience at United States Department of Agriculture (USDA) and as consultant identifying and accessing available federal programs/resources that support sustainable economic development
- Assistance provided to communities, businesses, non-profits, tribal governments, towns, cities, and agriculture producers.
- Assistance in U.S. and designated US territories



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Expertise: World's largest bioeconomy consulting group - over 100 subject matter experts (SME's)- all areas of the bioeconomy.

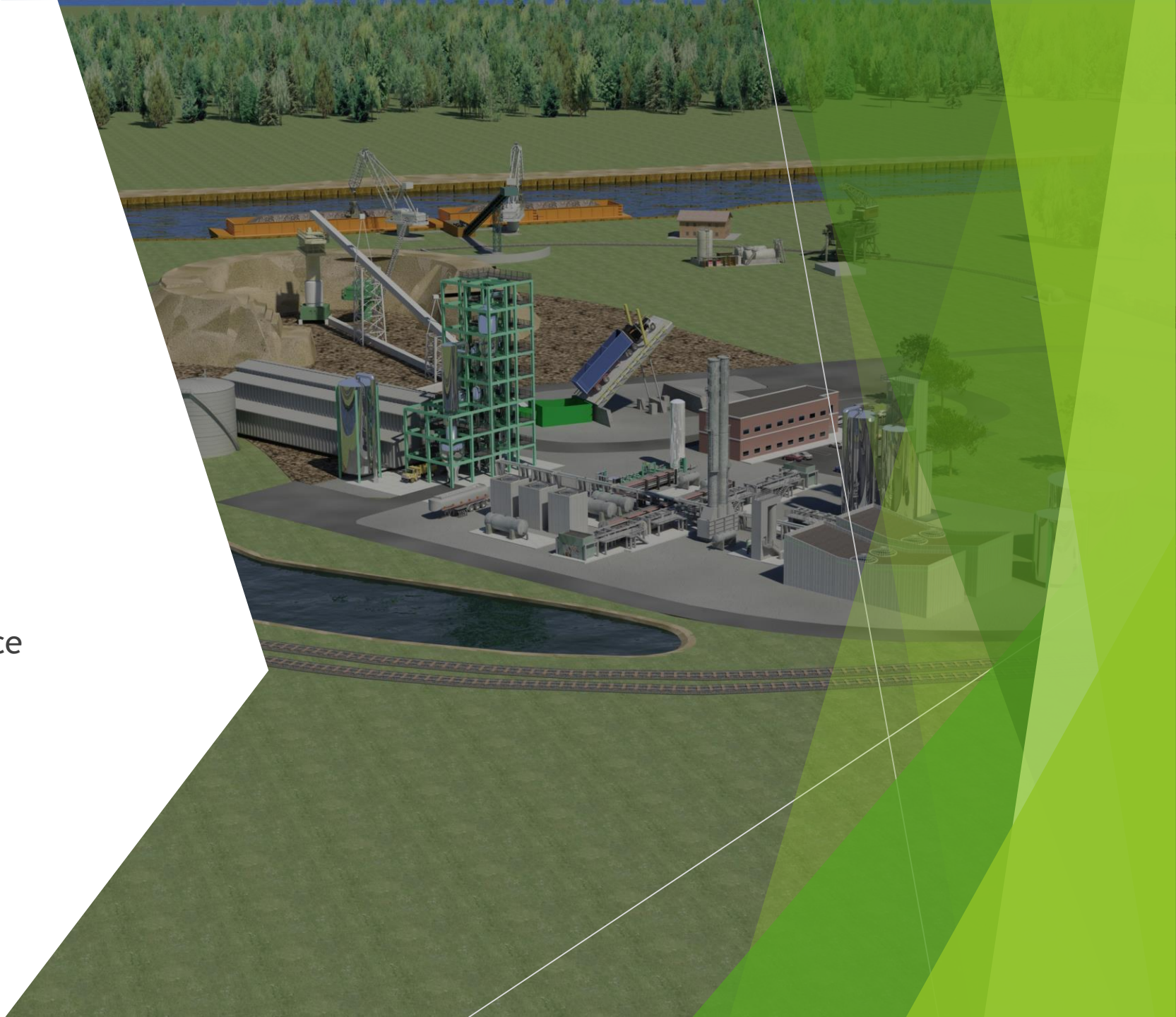
Approach: Project interdisciplinary teams to meet exact needs of specific projects.

POC: Handle projects with one agreement and single point of contact.

Cost Advantage: Single POC = lower administrative costs = lower project cost.

Federal Pre-Commercial Programs Supporting Biofuels, Biopower, Biochemicals, and Biobased Products

- ▶ Biomass Research and Development Initiative (BRDI)
- ▶ National Science Foundation I-Corp Program (ICAP)
- ▶ DOE Advanced Research Projects Agency- Energy (ARPA-E) Seed Funding
- ▶ USDA Agriculture Research Service (ARS) Advanced Bioenergy and Bioproducts Interagency Reimbursement Agreement
- ▶ DOE National Renewable Energy Laboratory Energy Systems Integration Facility (ESIF)



Biomass Research and Development Initiative (BRDI)

- ▶ **PURPOSE:** Increase the availability of alternative renewable fuels and biobased products through demonstration activities
- ▶ **ELIGIBLE TECHNICAL AREAS:**
 - **Feedstocks development-** feedstocks and feedstock logistics (including the harvest, handling, transport, preprocessing, and storage)
 - **Biofuels and biobased products development-**Development of diverse cost-effective technologies for the use of cellulosic biomass and product diversification through technologies relevant to the production of a range of biobased products (including chemicals, animal feeds, and cogeneration power)
 - **Biofuels development analysis-** strategic guidance for the application of renewable biomass technologies to improve sustainability and environmental quality, cost effectiveness, security, and rural economic development; environmental impact; federal land resources assessment
- ▶ **FUNDING AVAILABILITY:** Announced on an annual basis via Notice of Funding Availability



National Science Foundation I-Corp Program (ICAP)

- ▶ **PURPOSE:** ICAP helps inventors and entrepreneurs take the right first steps in bringing new technologies and innovations to market.
- ▶ **ELIGIBLE AREAS:**
 - ▶ *Assist Startups identify potential customers and develop successful business models
 - ▶ * Identify valuable emerging product opportunities
 - ▶ * Gain skills in entrepreneurship through training from established entrepreneurs.
- ▶ **FUNDING AVAILABILITY:** Announced via Notices of Funding Availability

DOE Advanced Research Projects Agency- Energy(ARPA-E) Seed Funding

- ▶ **PURPOSE:** ARPA-E advances high-potential, high-impact energy technologies that are too early for private-sector investment.
- ▶ **ELIGIBLE AREAS:**
 - * **Innovative Development in Energy-Related Applied Science (IDEAS)** - Support of early-stage applied research to explore pioneering new concepts with the potential for transformational and disruptive changes in energy technology.
 - * **Macroalgae Research Inspiring Novel Energy Resources (MARINER)**-Program seeks to develop the tools to enable the United States to become a global leader in the production of marine biomass.
 - * **Network Optimized Distributed Energy Systems (NODES)**- Program aspires to enable renewables penetration at the 50% level or greater, by developing transformational grid management and control methods to create a virtual energy storage system
- ▶ **FUNDING AVAILABILITY:** Periodic Funding Opportunity Announcements

USDA Agriculture Research Service (ARS) Advanced Bioenergy and Bioproducts Interagency Agreement

- ▶ **PURPOSE:** Develop an entirely new platform technology whereby high productivity plants will be developed that produce low-oxygen containing molecules that can be extracted and converted using microbial catalysts to drop in fuels and chemical building blocks.
- ▶ **PROJECT TYPE:** ARS researchers will collaborate closely with the Cooperator's conversion research group. The specific tasks that ARS will lead include: 1. Chemical compositional analysis of plant samples 2. Rating of extracted plant samples for biomass recalcitrance. 3. Screening a special set of yeast owned by ARS that are of special interest to the microbial conversion group for growth on crude sugars extracted from plant samples. 4. Further optimization of growth for selected yeast strains on crude sugars by modifying growth nutrients and adding chemicals or processing steps to reduce the concentration of microbial inhibitors typically formed during pretreatment.
- ▶ **FUNDING AVAILABILITY:** Funding available via Interagency Reimbursable Agreement. Funding window is open.

DOE National Renewable Energy Laboratory Energy Systems Integration Facility (ESIF)

- ▶ Purpose: ESIF accelerates the efficient transition to future energy systems that are secure, resilient, reliable, affordable, and clean.
- ▶ Capacities: ESIF houses an unparalleled collection of state-of-the-art capabilities to study clean energy technologies at all scales of development.
- ▶ How to access: Requests for access to the ESIF are accepted on an ongoing basis, depending on availability. Various types of solicitations for proposals are posted throughout the year, including those that align with specific areas of interest at the ESIF. Parties selected to work onsite at the ESIF are required to enter into a Technology Partnership Agreement.



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