Fixing Weaknesses in the Feedstock Regulatory Landscape

Pre-Processing, Follow-the-Crop, Depot, Dandelion Model— Taking a New Look at the Definition of *Feedstock Material* at a Biofuels Production *Facility*

Advanced Bioeconomy Feedstocks Conference June 9, 2015

Advanced Biofuels USA

501(c)3 Nonprofit Educational Organization

Founded April 2008

Website:
www.AdvancedBiofuelsUSA.org

Frederick, MD

Advocates for the adoption of advanced biofuels as an

- energy security,
- military flexibility,
- economic development
- climate change mitigation
- pollution control

solution.

ACORE

American Council On Renewable Energy

Advanced Biofuels USA, a nonprofit educational organization, advocates for the adoption of advanced biofuels as an energy security, economic development, military flexibility and climate change solution.

ADVANCED BIOFUELS USA

Advanced Bioeconomy Feedstocks Conference June 9, 2015

Contributing Authors

CONTRIBUTING AUTHORS:

Advanced Biofuels, USA
Joanne Ivancic and Bob Kozak

Algenol Biofuels
Jacques Beaudry-Losique

Cortus Energy
Wayne Gears

Fulcrum Bioenergy
Ted Kniesche

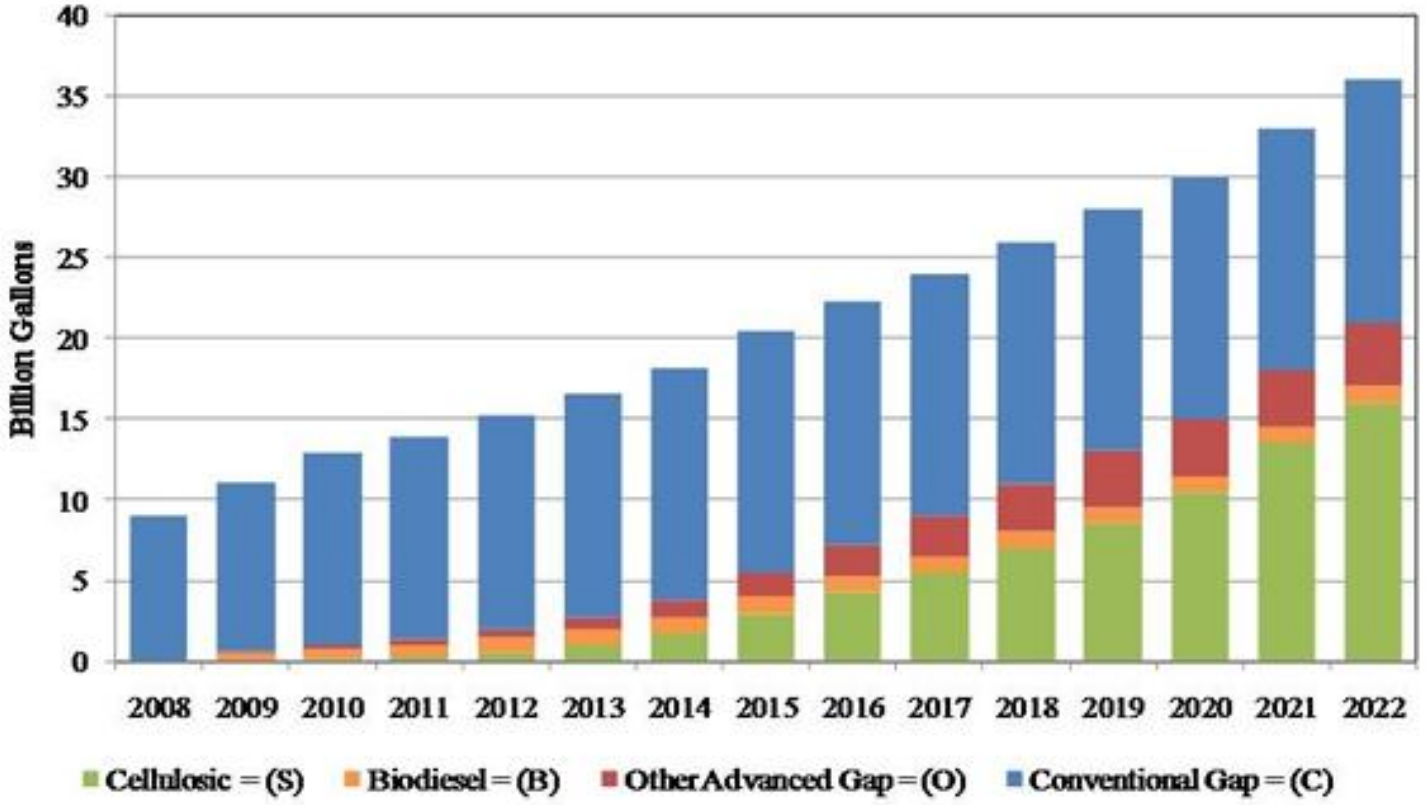
Kilpatrick Townsend & Stockton LLP
Mark Riedy

LanzaTech
Laurel Harmon

Solena Fuels
Pernille Hager

Renewable Fuel Standard

Figure 1: Biofuel Use Mandates Established by the Energy Independence and Security (EISA) Act of 2007

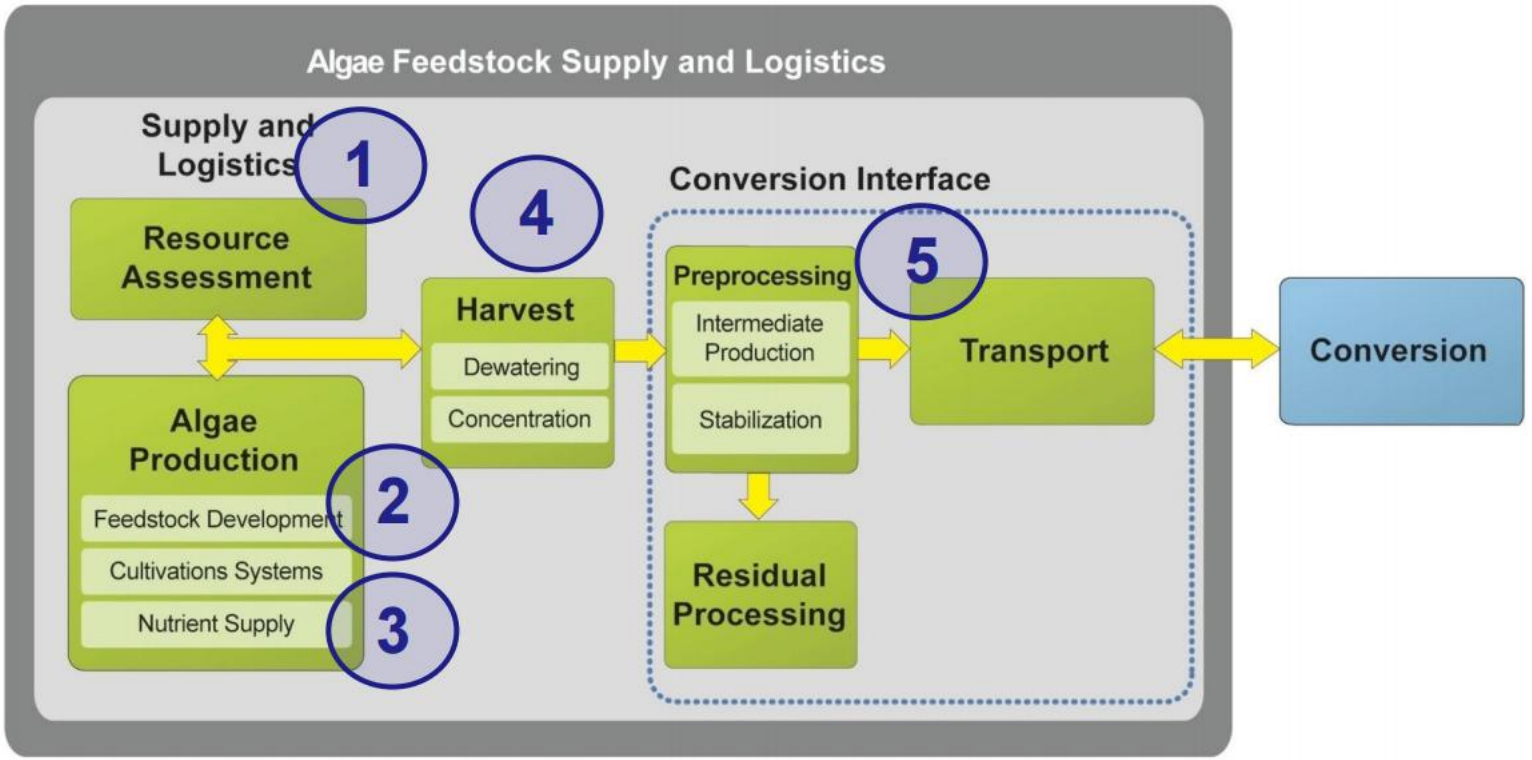


Renewable Fuel Standard: *Facility*

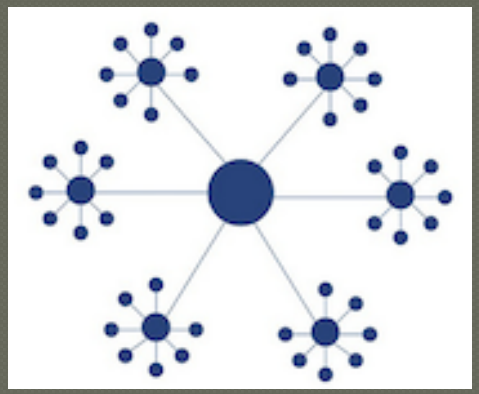
- "means all of the activities and equipment associated with the production of renewable fuel starting from the point of delivery of *feedstock material* to the point of final storage of the end product, which are located on one property, and are under the control of the same person (or persons under common control." (40 CFR 80.1401)

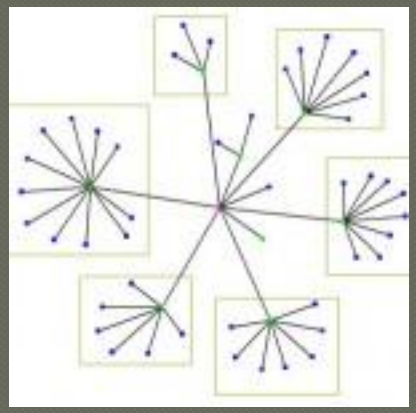
But … How does it *really* work for many advanced biofuels?

Relevance

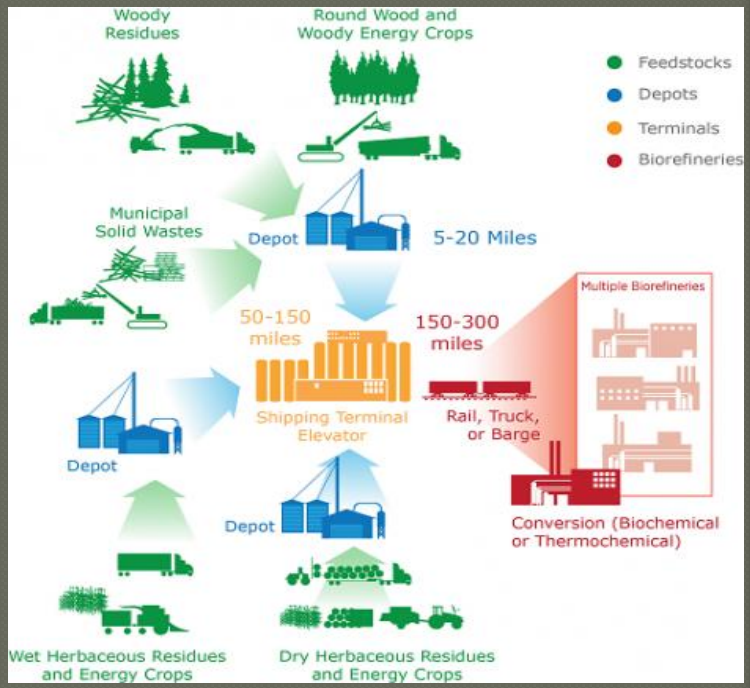


Pre-Processing, Intermediates, Dandelion Model, Follow-the-Crop, Regional Biomass Processing Depots



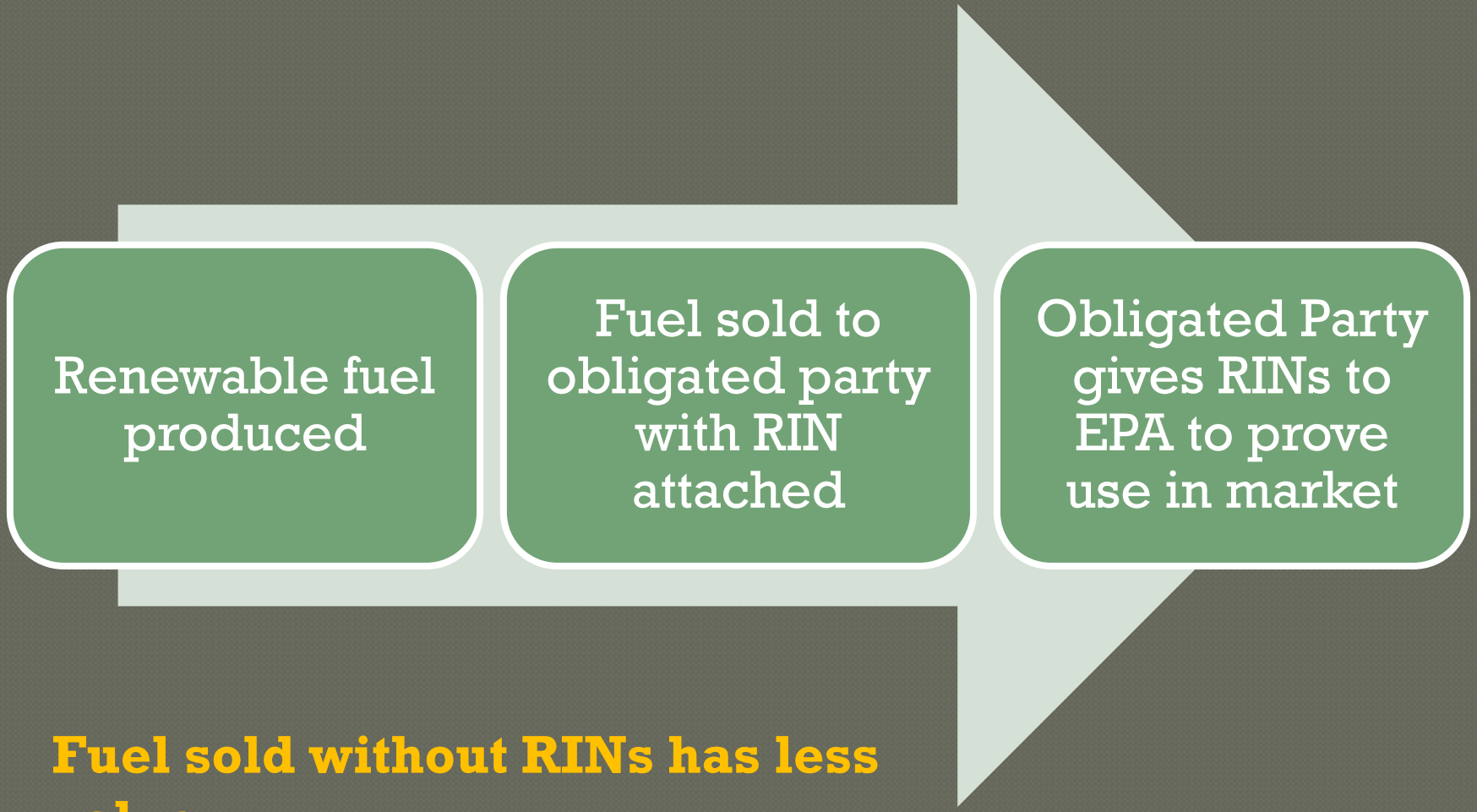


The Dandelion Model: Two-step biofuels technologies and the emergence of super-refineries *Biofuels Digest* October 24, 2012



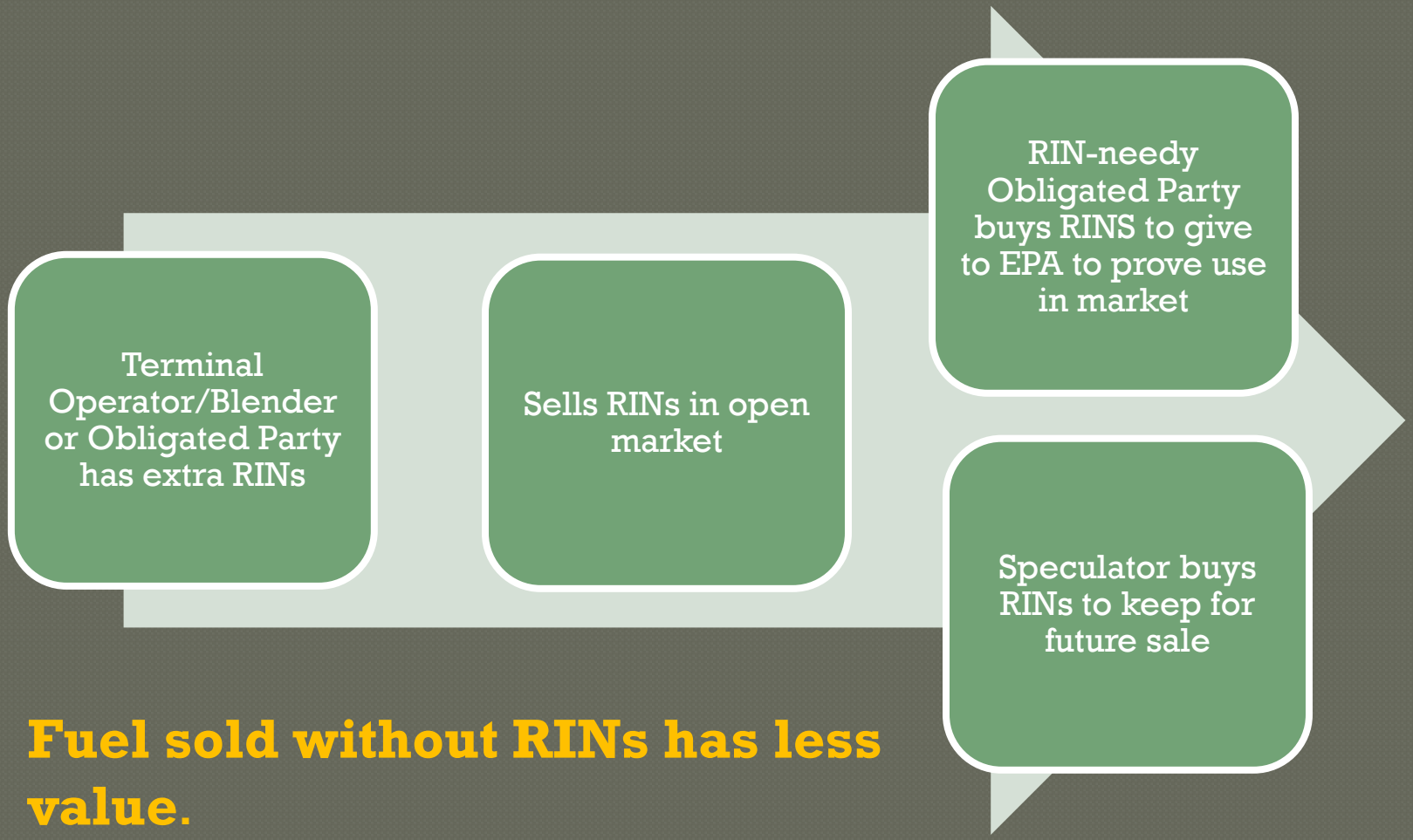
DOE EERE Biomass Feedstocks website page

How RINs Work Part A



Fuel sold without RINs has less value.

How RINs Work Part B



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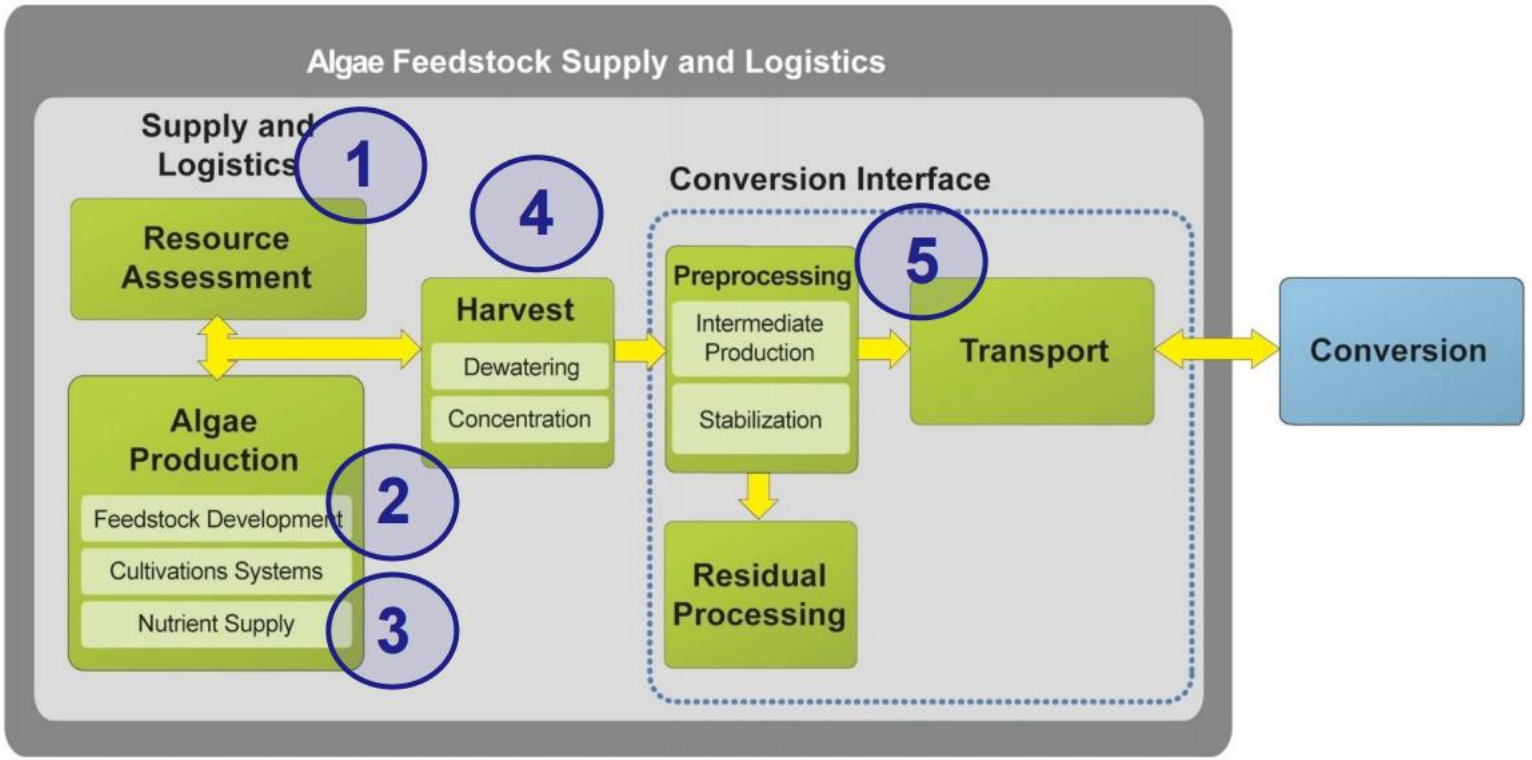
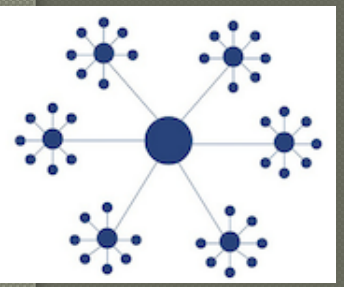


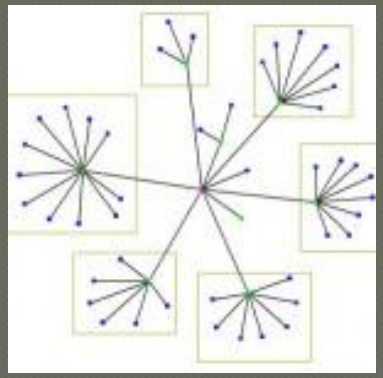
Federal Government Support--Consortium funded by DOE

- **National Advanced Biofuels Consortium (NABC).**
  - three intermediates to be further processed in standard refinery operations:
    - bio-crudes for co-processing with crude oil;
    - refinery-ready intermediates substantial downstream processing; and
    - near-finished fuels or blendstocks.



- **National Alliance for Advanced Biofuels and Bioproducts (NAABB).**
  - Goal: to reduce the cost of producing algae-based "biocrude" as an intermediate that could be processed into hydrocarbon fuels at a refinery location.

Federal Government Support--Technologies investments by DOE, USDA, FAA, DOE

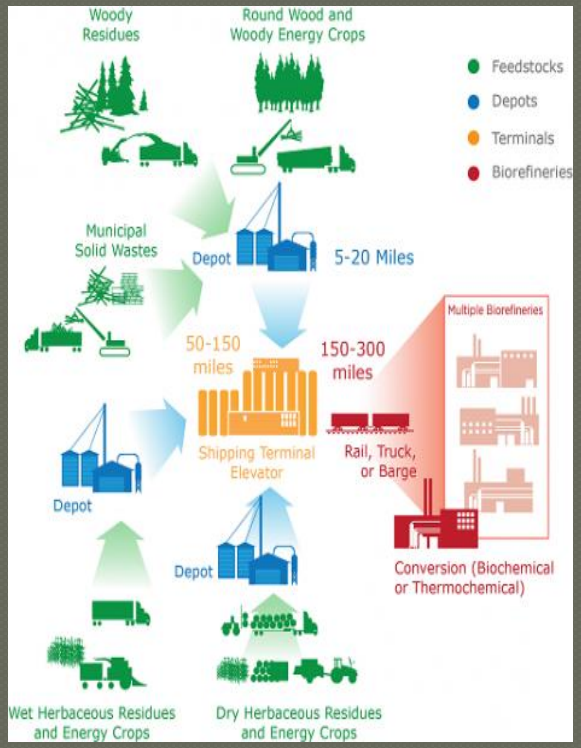


- **DOE Integrated Biorefineries.**
  - Solazyme
  - Algenol
- **DoDAlgal-derived Jet Fuel.**
  - DARPA awarded to General Atomics
  - Dynamic Fuels
  - Solazyme
- **Alcohol-to-Jet (ATJ).**
  - LanzaTech
  - Pacific Northwest National Lab
  - Swedish Biofuels

How to Fix the Problem?

- Doesn't need an Act of Congress

- **EPA can address by**
  - Clarify interpretation of *feedstock material* in the definition of *facility* in the RFS consistent with government research, investment and practice



How to Fix the Problem?

- **EPA** should clarify that For the purposes of section 80.1401 it understands, within the definition of *facility,*

"*feedstock material* means
any material that arrives at the *facility* that is processed into the end renewable fuel product."

Addressing Compliance Concerns

- Doesn't need an Act of Congress

- **EPA can address by**
  - Reporting and Recordkeeping Requirements
  - Strengthening the Quality Assurance Program (QAP)
  - Improving Testing

Addressing Compliance Concerns

- Reporting and Recordkeeping Requirements
  - The generator of RINs would be responsible for compliance with requirements of the appropriate pathways.
  - The RFS rules already provide for the tracking and accounting for the integrity of "renewable biomass" pre-processing at a location different from fuel production.

Addressing Compliance Concerns

- Strengthening the Quality Assurance Program (QAP)
  - Third-party site visits,
  - Mass and energy balance that include pre-processing,
  - Appropriate documentation,
  - Technical methods of measuring the renewable energy content of a finished product.

Addressing Compliance Concerns

- Improving Testing
  - Gauge biogenic fuel content through isotope testing methods
    - Accelerator Mass Spectrometer (AMS)
    - Liquid Scintillation Counter (LSC),

Questions?

LINK TO ACORE WHITE PAPER:

http://www.acore.org/images/uploads/ACORE%20EPA%20Co-Location%20White%20Paper.pdf

Joanne Ivancic 301-644-1395
info @ AdvancedBiofuelsUSA.org

ACORE
American Council On Renewable Energy

Jeramy Shays , (202) 507-4629
shays @ acore.org

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