An Efficient, Renewable, and Biobased Economy

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Agriculture Act of 2014 - Title IX Authorization

- BioPreferred Program: $3 million each year FY 2014-18
- Biorefinery Assistance Program: ($100MFY14, $50M in each FY15,16)
- Repowering Assistance: $12 million available until expended
- Bioenergy Program for Advance Biofuels: $15 million each year FY 2014-18
- Rural Energy for America Program: $50 million each year
- Biomass Research and Development Initiative: $3 million each year FY 2014-18
- Biomass Crop Assistance Program: $25 million each year FY 2014-18
Energy and Bioeconomy Projects

- Energy Efficiency
- Transportation biofuels
- Solid biofuel (pellets) and energy systems
- Anaerobic digesters; biogas
- Geothermal
- Solar – small, large; photovoltaic and thermal
- Wind - small and large
- Hydro - small and large
- Hydrogen production from renewables
- Renewable chemicals and biobased products
In the past 10 years, REAP has helped more than 14,000 small businesses and agriculture operations install renewable energy systems and make energy efficiency improvements.

Since 2008, the amount of renewable energy (wind, solar and geothermal sources) generated in the U.S. has nearly doubled, thanks in part to REAP.

Funded at $50 million per year
Revenues Generated Across the Supply Chain

- **Revenue to Feedstock Depot:** Feedstock value at the entrance to the conversion plant
- **Revenue to Product Distributors:** Product distribution to end user
- **Revenue to Grower / Harvester:** Feedstock value prior to pre-processing
- **Revenue to IBR Facilities:** Values of Biofuel and Bioproduct IBR facilities

**Biomass Production** → **Feedstock Logistics** → **Conversion** → **Distribution** → **End Use**

**Direct Revenue from Supply-Chain Operations (Fixed and Variable Operating Costs):**
Costs for salaries and wages, raw materials, catalysts and chemicals, insurance, replacement capital equipment, facility maintenance, etc. along the supply-chain that directly contributes to economic value.
Biomass Crop Assistance Program

- $25 million for each fiscal year 2014 -2018
- Provides financial assistance to establish, grow and deliver biomass for energy or bio-based products
- For establishment payments,
  - capped rate for perennial crops at $500 per acre ($750 for SSD)
- For matching payments,
  - provides range of not less than 10%, not more than 50% per year
  - $1 for $1 per dry ton is lowered from a maximum of $45 down to a maximum of $20 when biomass is collected, harvested, stored and transported to a conversion facility for bioenergy production
Biomass Crop Assistance Program Results

- Impact on more than 50,000 acres
- Helped over 1,000 producers establish 7 varieties of dedicated energy crops, including:
  - fast growing trees
  - energy grasses
  - oilseeds
- 11 approved Project Areas
2014 FARM BILL: A NEW DAY FOR RENEWABLE CHEMICALS AND BIOBASED PRODUCT MANUFACTURING

- Renames the 9003 Program as the "Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance" Program, and expands eligibility for the 9003 Program to include qualified renewable chemical projects and biobased product manufacturing projects.

- Extends the 9003 Program to fiscal year 2018 (advanced biofuels provisions unchanged).

- Provides mandatory funding of $100 million for fiscal year 2014 and $50 million for each of fiscal years 2015 and 2016 (which is subject to “credit subsidy scoring” thereby permitting the USDA to offer loan guarantees of approximately 3 x mandatory funding).
Biorefinery Assistance Program

- Biorefinery Assistance Program - $200 million ($100M FY14, $50M in each FY15,16)
  - Loan guarantees for first-of-a-kind, commercial-scale projects
  - Includes renewable chemical & biobased product manufacturing (up to 15%)
Loan Note Guarantees issued:

- Sapphire Energy, Inc., New Mexico: $54.5 million (paid in full)
- INEOS New Planet BioEnergy, Florida: $75 million
- Fremont Community Digester, Michigan: $12.8 million

Conditional Commitments awarded:

- Zeachem, Oregon: $232.5 million
- Fiberight, Iowa: $25 million
- Fulcrum Sierra Biofuels, Nevada: $105 million
- Chemtex, North Carolina: $99 million
NOFA closed January 30, 2014.

- 8 applications received
- $510 million in loan guarantee authority requested
- 4 States: Texas, Louisiana, Georgia, North Carolina
- 5 Technologies
  - 2 Green gasoline, diesel, and advanced aviation from woody biomass
  - Cellulosic ethanol from algae
  - 2 Anaerobic digesters
  - Solid fuel pellets from woody biomass
  - 2 Biodiesel from waste greases and oils
Nearly 1,000 individual products registered

www.biopreferred.gov
USDA Energy Web Portal

Energy Investments Map 2.0

- Interactive
- Research by state or county
- Newly redesigned

www.usda.gov/energy

More than 14,000 visible energy projects from across USDA Mission Areas
USDA Energy Web Portal

Renewable Energy Tool

www.usda.gov/energy
Energy Web v2.0

www.usda.gov/energy
Traps – Know the Critical Terms

Be Prepared:
Loan Agreements are Always One-Sided... In Favor of the Lender!
They Impose Numerous Covenants and Restrictions and Afford the Lender a Wide Range of Rights.

It’s Not all about the Rate
Events of Default – Have a Plan in place
Make Sure there is Plenty of Tangible Contingency. ... And You Can Use It!
Identify Key Hurdles/Problem Areas in Start Your Start Up Plan
“S..T” will Happen – Make Sure You Know What Happens If and When

Watch For:
Trip Wires
Cash Sweeps
Pre-Payment Triggers
Account Escrows – Key Waterfall Provisions that sweep/impound cash
Additional Debt Restrictions – Limits on Future Borrowing
Covenants/Personal Guarantees
DPA Title III Advanced Drop-In Biofuels Production Project

- As of June 19, 2013, 4 Phase 1 awards have been made
- Potential for 171 million gallons of drop-in compatible MILSPEC fuels (F-76, JP-5, JP-8) to start production by 2016
- Weighted average price in 2013 dollars < $4/gal
- Project has $100 million in FY12 funds from DOD, $60 million in FY13 from USN that can’t be reprogrammed
- USDA has contributed $161 million in CCC funds

- Phase 2 awards set to begin July 2014
  - Construction and commissioning
What to be thinking about in 2014

- Watch USDA for new solicitations on biochemicals and biobased product manufacturing, plus additional biofuels opportunities
- Review DOE draft solicitation and consider providing comments and/or asking questions
- Work with your advisors to build relationships with USDA, DOE and DOD for grants, loans and offtake opportunities
- Watch for:
  - Non-guaranteed financings from leading banks
  - Technology insurance
  - Biochemicals will be hot
The World is Preparing to Act...

IEA's Global Energy-Related CO2 Emissions by Scenario

- Current Policies Scenario
- New Policies Scenario
- Efficient World Scenario
- 450 Scenario (2°C)

## Criteria for Investment

### Market
- **Market Size:** $10b+ in multiple geographies
- **Adoption Rate:** Anticipated early sales in at least one high margin niche market within 2 years with broader market sales over the next 3 years

### Technology
- **Technology Differentiation:** Performance and pricing advantages over existing products/processes
- **Technology Risk:** Engineering and scale up risk acceptable, ease of integration into existing supply chain
- **Platform/Applications Flexibility:** Multiple applications

### Execution
- **Management Team:** Strong entrepreneur leadership supported by veterans from industry
- **Strategic Partnerships:** Ideally at least one, but not required for first round of investment
- **Syndicate:** Combination of Financial and Strategic investors to support Company to at least reach a major inflection point

### Exit
- **Exit Timing/Forecast:** Assuming a first round investment, exit within 5 to 7 years
- **Valuation:** Sx and above
Thank you!

For more information on USDA Energy and Bioeconomy Programs, visit:

www.usda.gov/energy