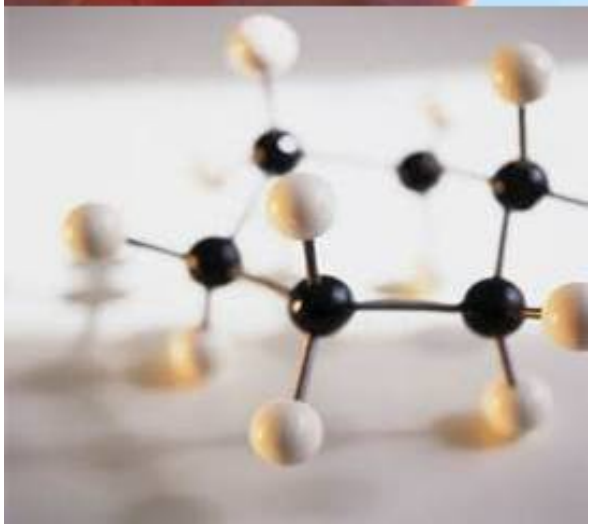




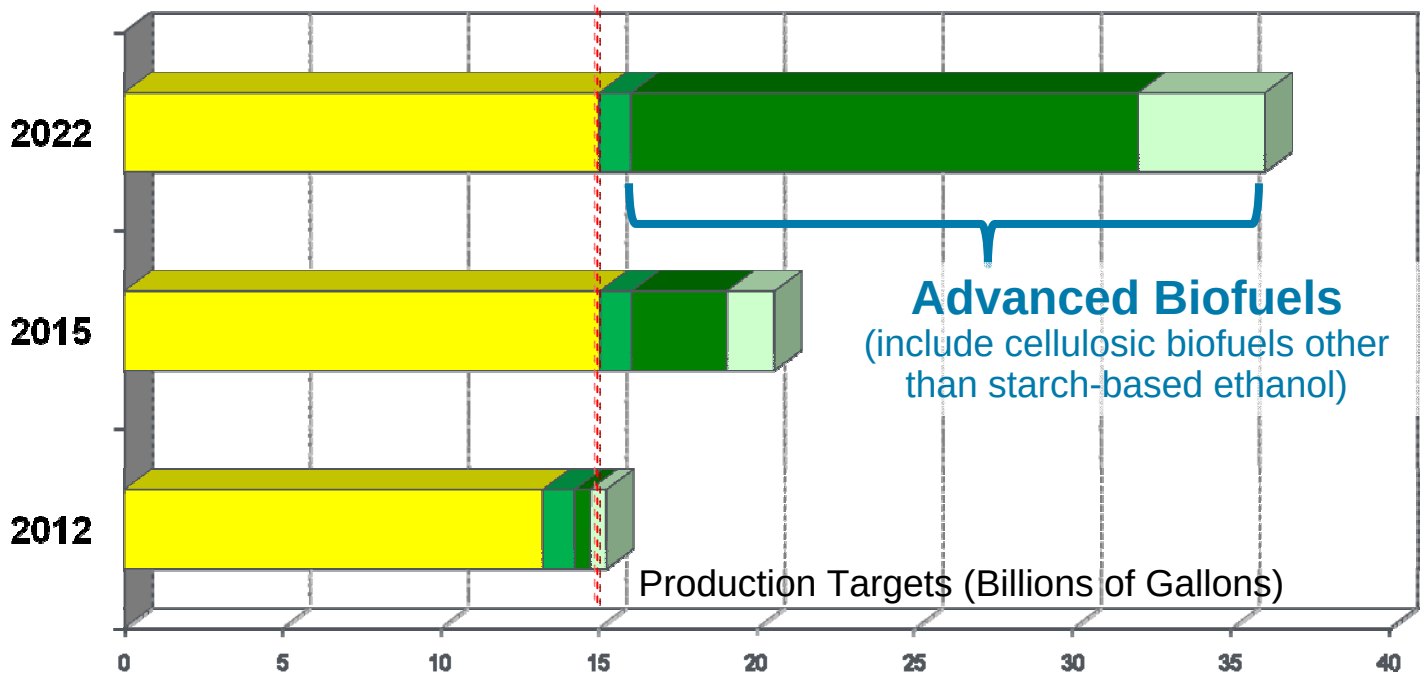

Renewable Energy Biomass Education Field Days

Valri Lightner
U.S. Department of Energy, Biomass Program

November 18, 2010

EISA Mandated Biofuel Production Targets

15 BGY Cap on Conventional (starch) Biofuels



Renewable Fuel Standard (RFS2)

- Conventional (Starch) Biofuels
- Biomass-based diesel
- Cellulosic Biofuels
- Other Advanced Biofuels

Biomass Program Mission, Objectives, Goals

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Develop and transform our renewable and abundant biomass resources into cost competitive, high performance biofuels, bioproducts, and biopower.

BIOFUELS TARGETS

- **At modeled cost for mature technology:**
  - **$1.76/gallon cellulosic ethanol by 2012**
  - **$2.85/gallon renewable gasoline by 2017**
  - **$2.84/gallon renewable diesel by 2017**
  - **$2.76/gallon renewable jet by 2017**
- **Support the Renewable Fuels Standard volumetric requirements**

INVESTMENTS TO MEET TARGETS

- **Approx. $200 M/year**
- **Addl. $800 M in Recovery Act funds**
- **About half went to demonstration and deployment and half for R&D**

Research, Development, and Demonstration

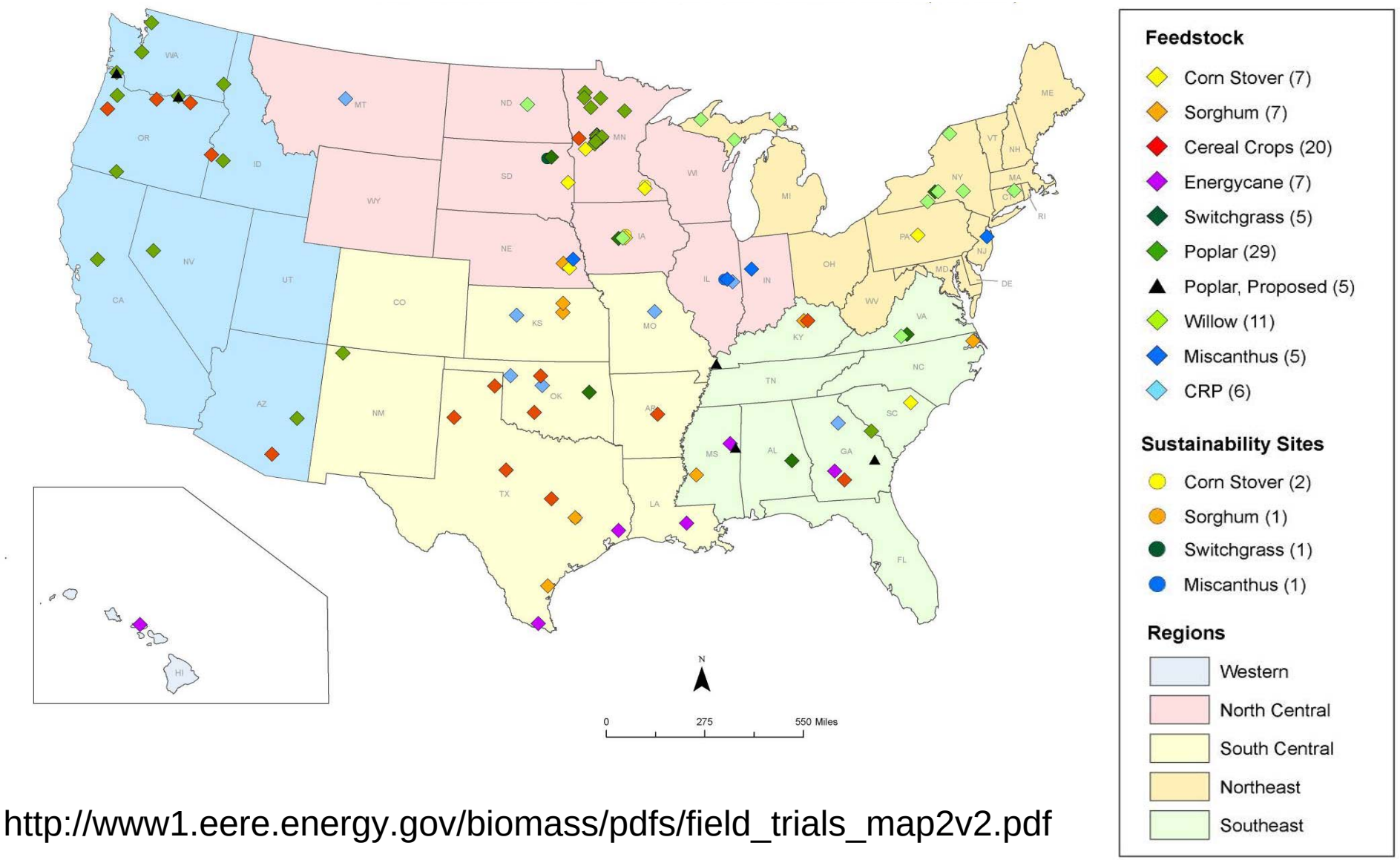
Feedstocks | **Biochemical and Thermochemical Conversion** | **Biopower Biofuels Bioproducts** | **Integrated Biorefineries** | **Infrastructure**

Crosscutting Activities

Analysis, Sustainability, Strategic Partnerships, Stakeholder Communications and Outreach

Feedstock Supply R&D
Regional Feedstock Bioenergy Crop Trials

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

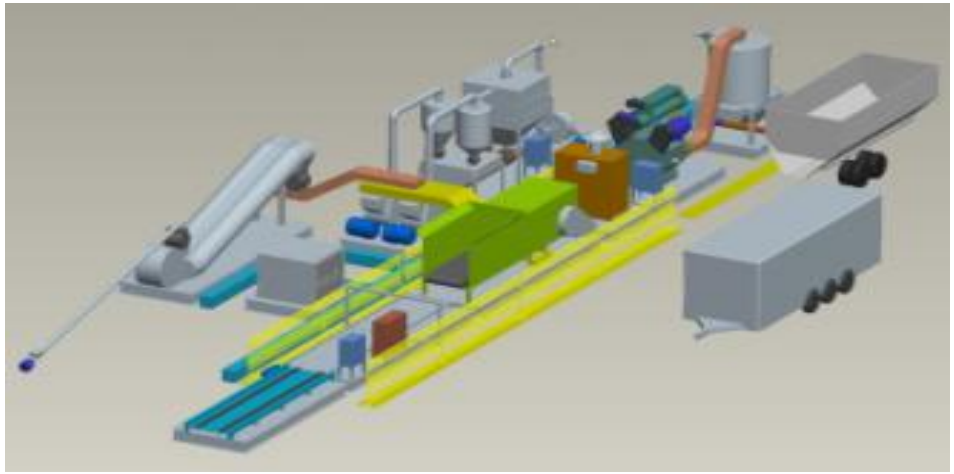


http://www1.eere.energy.gov/biomass/pdfs/field_trials_map2v2.pdf

Feedstock Logistics

Five projects selected August 2009 to design and demonstrate systems to handle:

- Harvesting
- Collection
- Preprocessing
- Transport
- Storage



Development of the Deployable Process Demonstration Unit (PDU) will help bridge gap between producers and refineries

- Test supply system concepts, new equipment designs, and deploy new technologies

- Produce engineered feedstocks to meet commodity-scale performance metrics and advanced conversion characteristics

Integrated Biorefineries

- **29 R&D (2), pilot (12), demonstration (9) and commercial (6) scale projects selected to validate IBR technologies**
- **Diverse feedstocks represented**

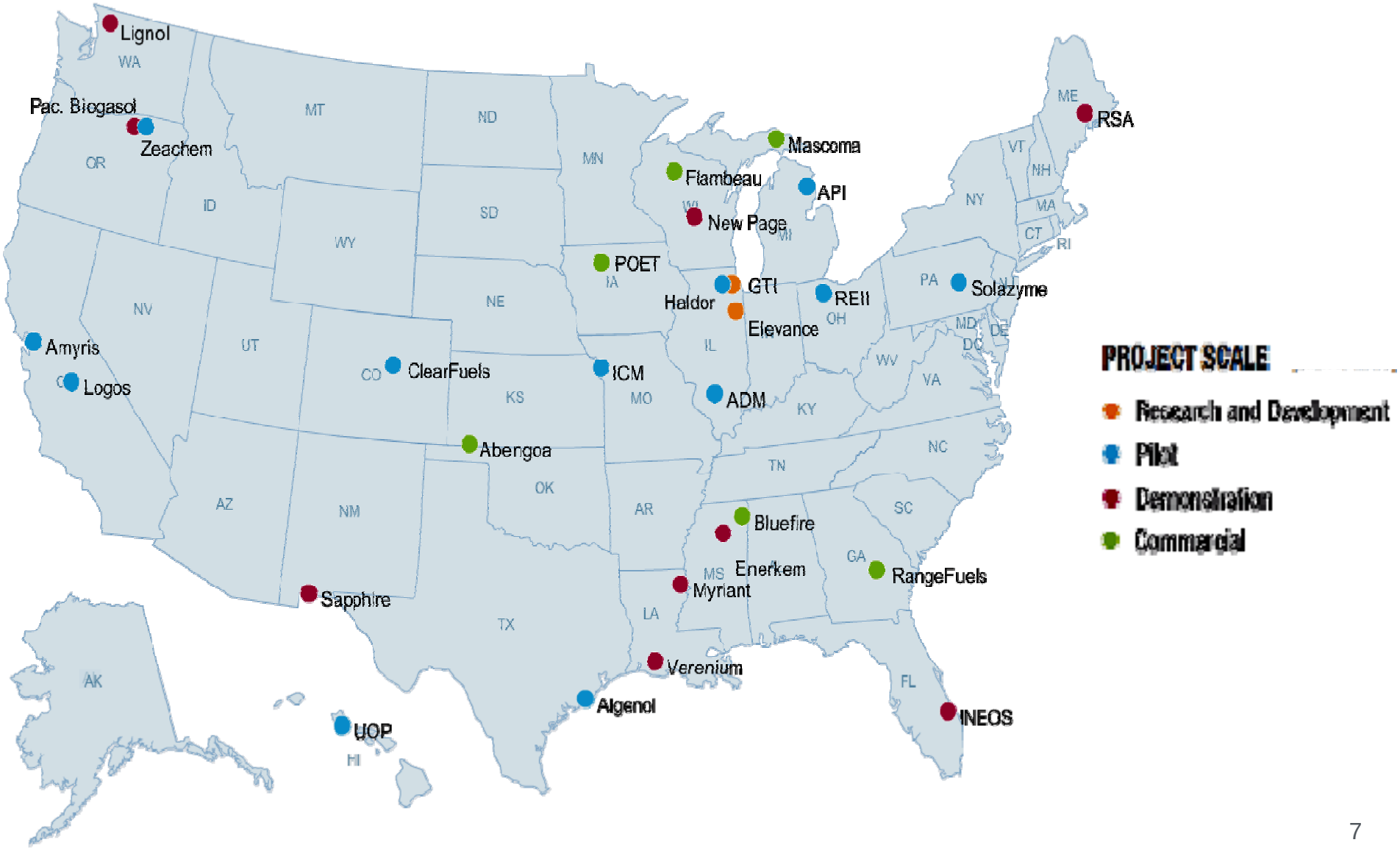
  - Agricultural Residues
  - Energy Crops
  - Algae/CO2
  - Forest Resources
  - Municipal Solid Waste
  - Non-edible oils

- **A variety of transportation fuels, biobased products, and biopower will be developed**

  - Cellulosic Ethanol
  - Butanol
  - Methanol
  - Renewable Gasoline
  - Renewable Diesel
  - Jet Fuel
  - Biodiesel
  - Biobased Chemicals
  - Process heat and steam
  - Electricity

For more information visit:
http://www.eere.energy.gov/biomass/integrated_biorefineries.html

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy



Distribution Infrastructure and End Use

- Effects of intermediate ethanol blends research
- Deployment of E85/blender pumps, storage tanks, and associated infrastructure at retail stations nationwide.
- Research and reporting on multi-modal infrastructure analysis and pipeline feasibility/compatibility issues in coordination with the Department of Transportation
- State Energy Programs (SEPs) have the authority to cost share re-fueling infrastructure

"Developing the next generation of biofuels is key to our effort to end our dependence on foreign oil and address the climate crisis -- while creating millions of new jobs that can't be outsourced. With American investment and ingenuity -- and resources grown right here at home -- we can lead the way toward a new green energy economy."

- Secretary of Energy Steven Chu