

State of Iowa- Biofuel Infrastructure Development March 17, 2009

Iowa Office of Energy Independence
Brian Crowe, Executive Officer

Iowa Office of Energy Independence



Iowa Office of Energy Independence



- Established by the Iowa General Assembly in 2007
- Office is helping Iowans create an economically viable and environmentally sound energy future by:
 - Providing leadership through education, planning and investment
 - Developing policies and resources to produce market transformation
- Open for business on January 11, 2008

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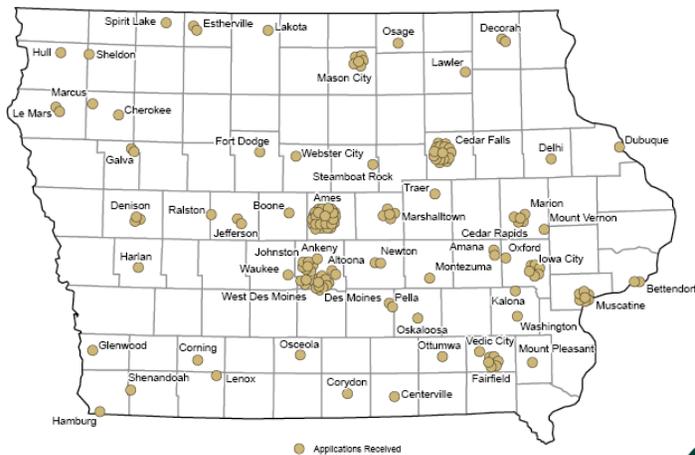
Iowa Power Fund

- \$100 million appropriated over 4 years
- Provides financial assistance to projects that will improve Iowa's biofuels, renewable energy, and energy efficiency sectors
- Board is comprised of 18 members who review and approve project applications



First Year of the Power Fund

POWER FUND APPLICANTS



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- Office has received 167 applications
- Applications totaled more than \$324 million in requests, with over \$1 billion in matching funds
- Over \$31 million in project funding was obligated
- Additional \$183 million in private and federal funds were leveraged as of 2/11/09

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Power Fund Projects to Date

- **2008 Biobased Industry Outlook Conference, ISU**
- **Amana Renewable Energy Project, Amana Farms, Inc.**
- **AmeriCorps Green Corps Program, Iowa Department of Economic Development/Iowa Department of Natural Resources**
- **Annual Iowa Energy Poll, UNI**
- **The Biodiesel Research Center, Renewable Energy Group**
- **Clean Gasification Platform for Renewable Power, ISU**
- **Determining Maximum Sustainable Production of Biomass with Mixture of Prairie Species, UNI**
- **Development of Less Expensive Dye Sensitized Solar Cells, UNI**
- **Efficient, Low Cost, Photovoltaic Solar Energy Conversion, ISU**
- **Iowa Stored Energy Park**
- **I-Renew Energy & Sustainability EXPO, I-Renew**
- **Making Iowa Cities Sustainable – Greenhouse Gas Emissions Reduction Model, City of Fairfield**
- **Mobile Solid Biomass Briquette Plant, RENEW Energy Systems**
- **Novel Hydrogen Storage Materials for Fuel Cell Application, UNI**
- **POET Project Liberty**
- **Reducing the Energy and Environmental Costs of Drying Corn Distillers Grain, Cellencor Inc.**
- **TPI Wind Blade Advanced Manufacturing Initiative**
- **Utilizing Glycerol in Swine and Poultry, Novecta, L.L.C.**

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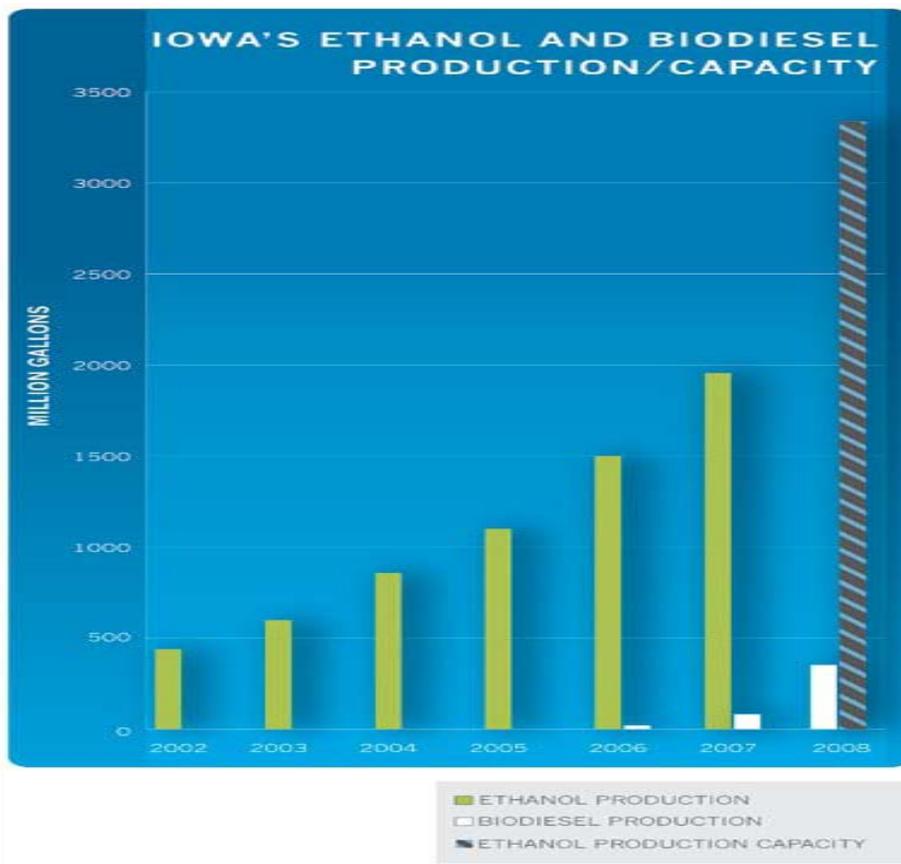
Power Fund Investment's in Biofuels

- POET Project Liberty. Emmetsburg, Iowa
Bolt-On technology which incorporates second generation cellulosic ethanol production onto existing technology.
 - Using existing infrastructure
- Cellencor, Inc. Ames, Iowa
 - Microwave Drying Process for DDGs
 - Decrease energy usage and carbon emissions in current ethanol facilities.

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Iowa's Biofuel Capacity



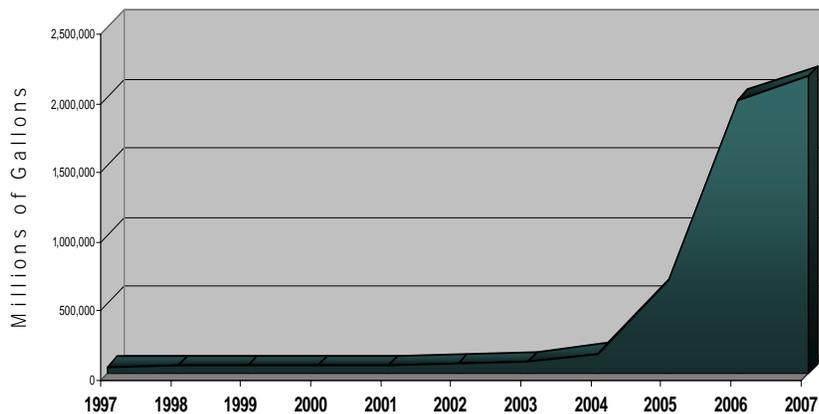
- Iowa is the leading producer nationally of both ethanol and biodiesel.
- As of November 2008, there were 35 ethanol refineries in Iowa with a total annual production capacity of 3 billion gallons
- An additional 715 million gallons of capacity under construction.

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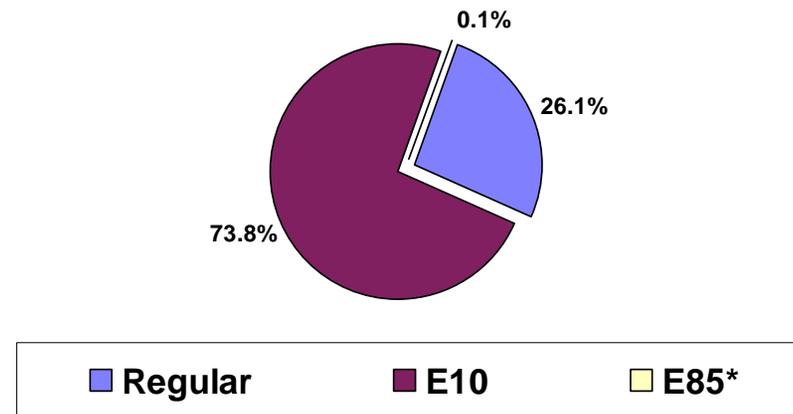
High Blend Ethanol Sales in Iowa

E85 Retail Sales in Iowa*



* 2007 4th Quarter data not included

Gasoline Sales in Iowa
by Type - 2007



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E85 in Iowa

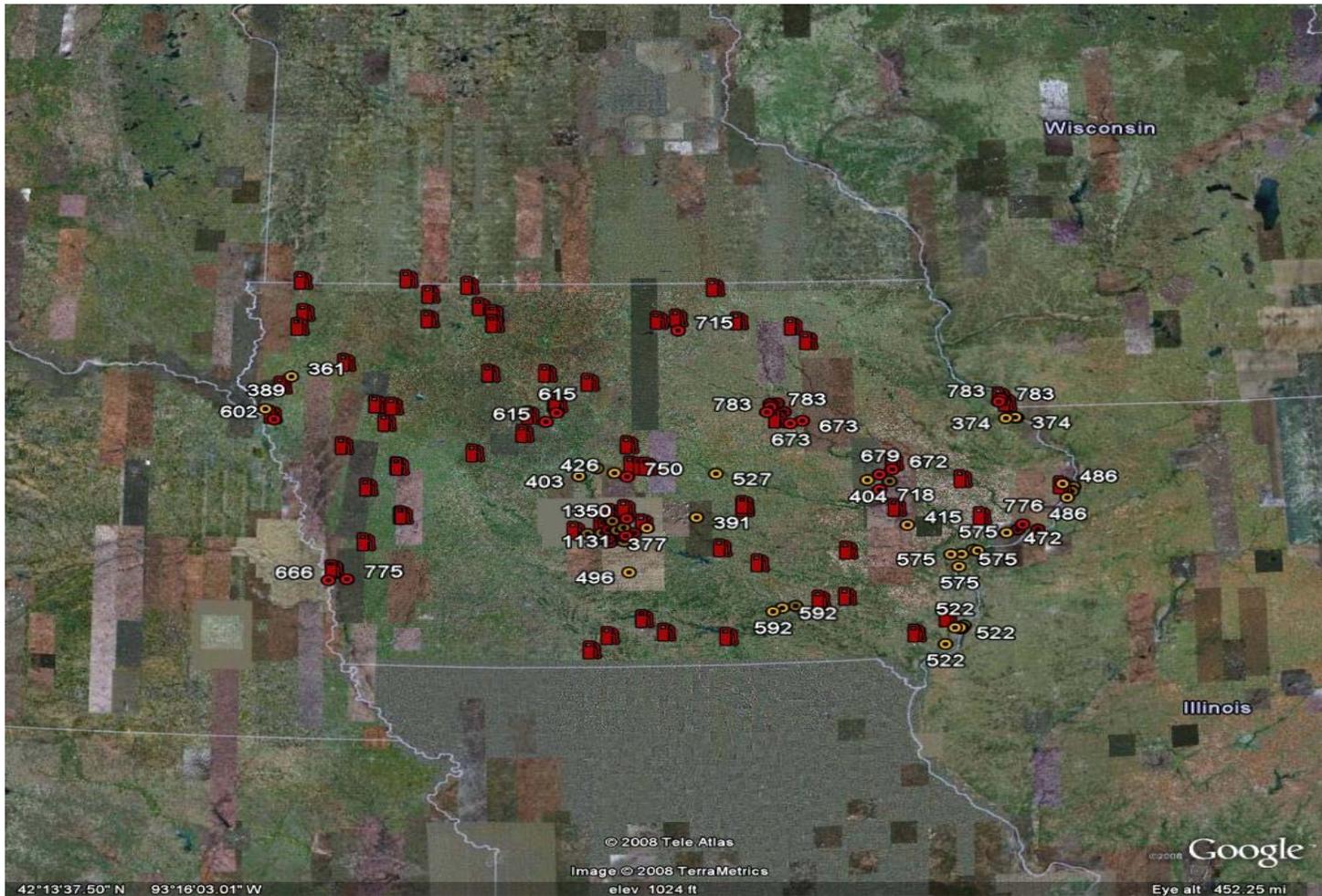
- 109 retail E85 fueling sites
- More stations scheduled
- 7 government operated facilities



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E85 Locations in Iowa



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State Incentives

E85 and Biodiesel Dispensers

- **3 year – 50% cost share per dispenser up to \$30,000**
- **5 year – 70% cost share per dispenser up to \$50,000**
- **A site may apply for both E85 and biodiesel dispensers, the applications have to be separate**
- **Legislature approved blender pumps for E85 and Biodiesel.**

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Iowa: City to Region Approach

The City-to-Region “concentrated” E85 market transformation:

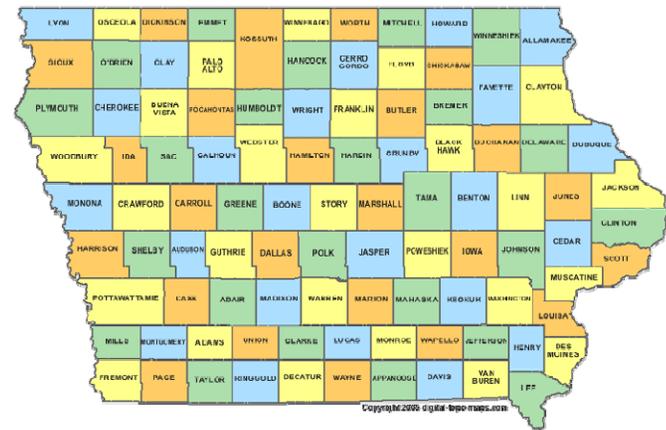
- According to the U.S. Census Bureau, most households are located in mid-sized and major metropolitan areas;
- According to the U.S. Energy Information Administration, most consumers purchase the majority of the gasoline they use within 30 miles of their home;
- The logistics of moving ethanol to local markets should allow for greater efficiency and somewhat lower costs

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Iowa: City to Region Approach

- Concentrating E85 pumps, marketing, education, and incentives over an extended period of time (2-3 years) in a limited number of metropolitan areas should be an effective means of supporting growth in the market for higher blend ethanol fuels.



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Iowa's City to Region Approach

- The population in the Des Moines metropolitan statistical area is approximately 534,234 persons. The Quad Cities Board a population of 376,160 persons.
- The Census Bureau estimates that there are 2,600 gasoline stations in Iowa, with 257 stations in the Des Moines area, and .
- Currently there are 10 refueling sites offering E85 in the Des Moines metropolitan area.
- Currently only 2 refueling stations offer E85 in the Bettendorf, Davenport area.

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Next Steps for the Approach

- Strategic Partnerships
- State and Federal Incentives
- Developing Partnerships
- Marketing
- Educational Efforts
- Measuring Success
- Next Steps



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