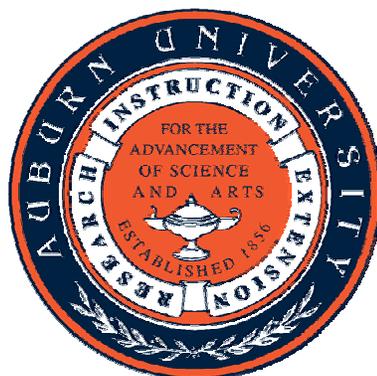


Alabama Bioenergy Directory



TUSKEGEE
UNIVERSITY

- A directory of bioenergy projects and services in Alabama.
- Completed in May 2007.
- Funded by the Alabama Agricultural Land Grant Alliance (AALGA).

The Alabama Agricultural Land Grant Alliance
Alabama A&M University – Auburn University – Tuskegee University

Alabama Bioenergy Directory

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Table of Contents

Introduction	1
Alabama Bioenergy Directory	
<u>Bioenergy Companies</u>	
Crenshaw Farms	2
Dee River Ranch, Inc.	3
Central Alabama Clean Cities, Inc.	4
General Bioenergy, Inc.	6
Green Energy Technologies, Inc.	7
GreenFuels Holding Company, LLC.	8
Free Heat Inc.	9
Renewable Energy Systems, Inc.	10
Bennett Lumber	11
W. G. Sullivan Lumber Co.	12
Renewable Oil International, LLC.	13
Southeastern Cheese Corporation	14
BioHeat Technologies, LLC.	15
Eufaula Biodiesel Project	16
U. S. Energy Inc.	17
Alternative Fuel Technologies/ Tucker Milling	18
Future Fuels	19

Bioenergy Companies

Alabama Biodiesel Corp.	20
Earth Clean Technologies, Inc.	21
Eastwood Christian School	22
Alabama Correctional Industries	23
Wiregrass BioDiesel, CDR Enterprise, LLC.	24
Alabama Bioenergy Inc.	25
Southeast BioEnergy, LLC.	26
Independence Renewable Energy Corp.	27
Allied Renewable Energy, LLC.	28
Department of Finance, State Motor Pool	29
Farmers Fuel of America, LLC.	30
The City of Hoover	31
Alabama Renewable Energy Alliance, LLC.	32

Bioenergy Programs

Auburn University	33
Alabama Mountains, Rivers and Valleys Resource Conservation	36
ADECA/Central Alabama Clean Cities	37
ADECA	38
Co-Op Conservation Partnership Initiative (CCPI)	40
University of Alabama in Huntsville	42
Information Resources	46

Introduction

The Alabama Agricultural Land Grant Alliance (AALGA) is an alliance that includes the three land grant universities in the state, Alabama A & M, Auburn, and Tuskegee. The alliance addresses selected research and outreach needs related to agriculture in Alabama.

America's dependence on oil as our nation's only significant transportation fuel jeopardizes national security, drains billions of dollars from the U.S. economy, and contributes to global warming. Record high oil prices have resulted in an unprecedented public relations drive on behalf of biofuels. Fortunately, the commodity best positioned to help end the dependence on fossil fuels and enable a transition to a carbohydrate-based economy is already growing in the fields and forests of rural America.

Alabama is a biomass-rich state in which bioenergy offers substantial opportunities, and bioenergy research and development in the state is expanding rapidly. However, limited coordination among the different sectors of this industry is restricting efficiency of this work. In addition, elected officials remain inadequately informed of economic and environmental benefits that could be derived from a progressive bioenergy industry in the state, and the progress being made towards realizing these benefits.

The following inventory of bioenergy companies and projects was funded through the AALGA Bioenergy Technology and Project Inventory budget. The objective of this project was to compile and distribute an inventory of bioenergy activities and services in Alabama.

Bioenergy Companies

Bioenergy Directory

County	Butler
Company	Crenshaw Farms
Address	1706 Dickens Field Road
City	Greenville
State, Zip	AL, 36037
Telephone	(334) 382-3563
Product	Producer of crops for biofuels

Description:

Crenshaw Farms currently utilizes 55 to 60 thousand gallons of propane per year, 1 to 1.5 thousand gallons of diesel per year and 15 to 20 thousand KWH of electricity a month to run an eight house broiler farm and 250 head of brood cows. Crenshaw Farms goal is to produce enough oil seed crops (approximately 1000 gallons of oil) for biodiesel per year, grow an energy dense source of sugar to make ethanol, and utilize the mortality from the broiler operation to produce methane in order to reduce propane cost.

Bioenergy Directory

County	Pickens
Company	Dee River Ranch, Inc.
Address	PO Box F
City	Aliceville
State, Zip	AL, 35442
Telephone	(205) 373-8248
Product	Grain drying system and biomass production

Description:

Dee River Ranch has an energy saving GSI Top Dry grain drying system. The “Top Dry is located in the top of a bin. A layer of grain in the overhead drying chamber is dried by a large fan and heater then dumped to a holding area below. A smaller aeration fan below captures heat from previously dried grain, and pushes it upward to help dry the next load. This recycling of heat increases efficiency, which reduces drying cost.

This project was partially funded by a grant through Auburn University from ADECA (Alabama Department of Economic and Community Affairs).

Dee River Ranch raises corn, soybeans, wheat and rye which could all be used for biofuels. We keep looking for a profitable way to continue farming and feed Alabama, the nation and the world and are always open to new opportunities and research projects.

Bioenergy Directory

County	Bibb, Blount, Chilton, Jefferson, Shelby, St. Clair and Walker Counties.
Company	Central Alabama Clean Cities, Inc.
Address	706 37th Street South
City	Birmingham
State, Zip	AL, 35222
Telephone	(205) 241-5040
Product	Commercial Bioenergy Projects and Funding Agency

Description:

Central Alabama Clean Cities (CACC) is the principal coordinating point for Alternative Fuel (AF) and Alternative Fuel Vehicle (AFV) activities in Alabama. CACC is a non-profit membership-based organization of federal, state, and local agencies, public interest groups, alternative fuel vehicle manufacturers and dealers, alternative fuel producers and distributors, and public/private fleets who work together in a coordinated effort to promote the purchase and use of Alternative Fuels and Alternative Fuel Vehicles to create a sustainable market in Alabama.

Our primary goals are to expand both the use of vehicles powered by alternative fuels and the availability of AFV refueling infrastructure in the State. These expansions will foster increased domestic energy security, enhanced economic development and improved air quality in the state.

The U.S. Department of Energy’s Clean Cities Program was created out of the Energy Policy Act (EPA) Amendments of 1992 to address American energy security concerns by working to advance the use of clean fuels.

Central Alabama Clean Cities was incorporated as a 501(c) (3) non-profit organization in August of 2002. The services CACC offers to our members include, but are not limited to the following:

- Developing and implementing alternative fuel infrastructure projects.**
- Identifying, applying for, administering and providing grants for alternative fuel infrastructure projects.**
- Coordinating special events, educational workshops to promote public awareness of the need for alternative fuels, alternative fuel vehicles, petroleum displacement, and reduced emissions.**
- Developing and supporting public policies that encourage the development and utilization of alternative fuels and alternative fuel vehicles in Alabama.**
- Website and email newsletter promoting use of alternative fuels/alternative fuel vehicles.**
- Acting as a clearing house for Alternative Fuel/Alternative Fuel Vehicle information.**
- Educating and promoting the use of Alternative Fuels and reduced idling strategies for Alabama’s commercial, private and municipal fleets.**
- Developing “clean corridors” among major roadways in Alabama – (I65 Clean Corridor DOE grant received Sept. 2006)!**
- Advancing clean air objectives to foster economic development throughout the State.**

Bioenergy Directory

County	Lauderdale
Company	General Bioenergy, Inc.
Address	3115 Northington Court; PO Box 26
City	Florence
State, Zip	AL, 35630
Telephone	(256) 740-5634
Product	Consulting firm specializing in the use of biomass resources for energy and other product.

Description:

Phillip and Bonnie Badger have over 30 years experience in the field and have won numerous awards for their work. Current activities include: Resource assessments and procurement assistance, feasibility studies, assistance with facility sites, marketing analysis and plans, technology assessments, competitor identification and analysis, sales of used equipment and systems, expert witness testimony, conference and workshop leadership, technology transfer materials, technical writing, locating project financing, business plans, solicitations, proposal preparation and review.

General Bioenergy published a monthly newsletter-the Bioenergy Update-that is available in electronic or hard copy form. It is designed to make information and the latest developments concerning bioenergy topics available to leaders in the industry. www.bioenergyupdate.com

Bioenergy Directory

County	St. Clair
Company	Green Energy Technologies, Inc.
Address	PO Box 159
City	Moody
State, Zip	AL, 35004
Telephone	(205) 910-5141
Product	Consulting firm

Description:

Green Energy Technologies, Inc. (GET) is a consulting firm dedicated to working with clients who desire to integrate green energy from renewable resources into daily operations of their businesses.

Consulting and Research

Is green energy appropriate for the client's situation, what monies can be saved utilizing green energy, and how to convert green resources into energy.

Conceptual Engineering

Prepare conceptual designs of appropriate green energy alternatives.

Preliminary Engineering

Prepare process flow diagrams, equipment specifications, develop first order capital cost estimate, review process designs, develop equipment bid packages and prepare a scope for detailed facility engineering.

Facility Engineering

Detailed engineering includes foundations, buildings, piping, electrical wiring, and setting of equipment. Installation contractors can be selected and the total installed cost of the facility can be established.

Bioenergy Directory

County	Jefferson
Company	GreenFuels Holding Company, LLC.
Address	4599 East Lake Blvd.
City	Birmingham
State, Zip	AL, 35217
Telephone	(205) 798-7766
Product	Alternative Energy Investors

Description:

GreenFuels Holding Company, LLC “GreenFuels” is an energy company formed in November of 2002 as a means of exploring new energy opportunities. Typically, if the members of GreenFuels decide to invest in a venture, a new company will be formed for the purpose of that investment. Currently, GreenFuels is conducting an investigation into the production of biodiesel. A variety of oil products, including vegetable oils derived from soybeans, canola, mustard seed and palm, and animal fats are utilized in the production of biodiesel. GreenFuels’ immediate plans in regard to the biodiesel industry are to build an initial plant having an annual production capacity of 30 million gallons. If the initial plant proves to be a success, GreenFuels will build two more, each having an annual production capacity of 30 million gallons. The initial plant will utilize soy oil and palm oil as its primary feedstocks. However, the plant will be able to process other types of vegetable oils and animal fats. The plant will be owned and operated either by GreenFuels or a new limited liability company formed by the members of GreenFuels having as its sole asset the biodiesel production facility.

Bioenergy Directory

County	Dekalb
Company	Free Heat Inc.
Address	3660 Alabama Highway 40 East
City	Henagar
State, Zip	AL, 35978
Telephone	(256) 527-8113; (256) 364-0183
Product	Mass Air Management System

Description:

Free Heat, Inc. is leading the way with the patented Mass Air Management System (MAMS). This unique heating and ventilation system can provide cleaner, drier and more economical heat to poultry houses using sawdust or wood shavings. The revolutionary design of MAMS is able to efficiently circulate the air within the house, moving unused heated air at the ceiling down to the birds. Litter life is extended and removal is reduced.

On-farm testing began in 1997 by Auburn University and the University of Georgia www.poultryhouse.com and www.freeheatinc.com.

Bioenergy Directory

County	St. Clair
Company	Renewable Energy Systems, Inc
Address	PO Box 159
City	Moody
State, Zip	AL, 35004
Telephone	(205) 910-5141
Product	Bioenergy Equipment Manufacture/Vendor

Description:

Renewable Energy Systems, Inc. (RES) provides low cost solutions to energy production based on the utilization of biomass related fuel materials.

RES provides small gasification based energy systems to convert solid biomass materials into various forms of energy.

Currently RES has developed a method to convert solid biomass material into a synthesis gas (syngas) capable of fueling automotive vehicles.

Development of a larger unit suitable for stationary installations, such as dairy and poultry producing operations and small industrial and commercial facilities, is underway.

Systems include fuel handling equipment, fuel gasification unit, syngas filtering and cooling equipment, and engine generators to produce electricity.

Bioenergy Directory

County	Calhoun
Company	Bennett Lumber
Address	111 Old Ladiga Rd.
City	Piedmont
State, Zip	AL, 36272-0307
Telephone	(256) 447-9663
Product	Lumber Company and Pallet Material

Description:

Bennett Lumber operates a wood-fired boiler rated at 250 bhp to supply steam to their drying kiln. The boiler system consists of the boiler, a fuel silo, automatic fuel metering, a chemical premix, and preheat water tank, ash removal system, and above-ground steam lines to the kiln. The boiler runs 24/7 to support kiln requirements. The new steam kiln has the capability to dry 55,000 board-feet in 15 hours to 19% moisture content, while the natural gas kiln takes 72 hours to process the same amount of lumber. This increase allowed Bennett to completely shut down the natural gas fired kiln and to pursue a market expansion into larger lumber sizes, specifically 4" x 4" and 6" x 6" lumber. The lumber system was designed to burn pine sawdust and shavings produced in their planer mill. The sawdust contains approximately 12-19% wet basis moisture content.

In the first few months of operation, the wood-fired boiler and steam kiln have already proved to be a success.

Bioenergy Directory

County	Tuscaloosa
Company	W. G. Sullivan Lumber Co.
Address	16213 Highway 171
City	Northport
State, Zip	AL, 35475
Telephone	(205) 330-9522; (205) 394-2012 cell
Product	Wood-fired boiler

Description:

The W. G. Sullivan Lumber Co. Boiler Conversion Project is funded through the USDA Rural Development Department. The project is being undertaken to replace the natural gas fired wood drying system with a system fueled by wood products. This conversion will help alleviate the high-energy cost associated with kiln drying lumber. By installing a wood-fired boiler to replace the current direct heat, natural gas system, a reduction in annual natural gas requirements of approximately 85,000 mm Btu will be realized. The wood used to power the boiler is a by-product of the lumber manufacturing process and is an efficient, clean alternative to natural gas.

Bioenergy Directory

County	Lauderdale
Company	Renewable Oil International, LLC
Address	3115 Northington Court; PO Box 26
City	Florence
State, Zip	AL, 35630
Telephone	(256) 740-5634
Product	Fast pyrolysis technology

Description:

The goal of the company is to develop and commercialize an advanced biomass distillation process based on fast pyrolysis technology. Renewable Oil International (ROI) has intermittently operated a small pilot plant in northwest, Alabama on a 12-house poultry farm. The purpose of this operation was to show that the process could be cost effective in separating the phosphorous and potassium nutrients in the poultry litter. ROI has designed a next generation plant and currently has a parallel company in Canada working on a new design. The major advantages to the ROI technology are that it can process virtually any biomass material plus tires, plastics, sewage sludge, peat, and other materials rich in carbon. The technology does not require boilers, or process water, and can be factory fabricated in modules. These advantages allow the technology to be cost effective at relatively small scales.

Bioenergy Directory

County	Perry
Company	Southeastern Cheese Corporation
Address	PO Box 535 Old Faunsdale Rd.
City	Uniontown
State, Zip	AL, 36786
Telephone	(334) 628-3311
Product	Cheese Processor

Description:

The Southeastern Cheese corporation uses local milk and imports milk from several Southeastern states, including Texas, Florida, Georgia, Tennessee and Mississippi. The company produces barrel cheddar, which is then exported to Carthage, MO, and Chicago, IL, where it is processed further and distributed throughout the nation. The company provides work for 32 employees. The plant produces a considerable amount of whey, which is currently being disposed of and not used. Electricity is one of the largest costs of running the plant, and amounts to approximately \$300,000 per year. An anaerobic digester is being installed to process the whey into methane which will then be used to power an electric generator. Power produced from the generator will be used by the plant and any excess will be sold to the grid. This project is being funded by an Alabama Department of Economic and Community Affairs Energy, Weatherization and Technology Division (ADECA-EWT) grant.

Bioenergy Directory

County

Company **BioHeat Technologies, LLC**

Pete Jackson

Address **629 County Road 672**

City **Ranburne**

State, Zip **AL, 36273-3652**

Telephone **(256) 568-3215**

Product **Poultry Producer utilizing Litter for heat**

Description:

BioHeat Technologies LLC is a very small company located in Ranburne, Northeast Alabama. It has developed a low-cost furnace that can be used to burn broiler litter instead of propane for heating broiler houses. This project will demonstrate this technology for the first time.

The demonstration will be installed on the broiler farm of Mr. Pete Jackson, who produces broilers for Cagles. Five litter furnaces will be mounted on the wall opposite the propane-fired forced air furnaces in the brood chamber of the house. A conveyer system will deliver the litter to the furnaces and remove the ash. A field day will be arranged to demonstrate the technology

Bioenergy Directory

County	Barbour
Company	Eufaula Biodiesel Project
Address	Eufaula Municipality
City	Eufaula
State, Zip	AL, 36027
Telephone	(334) 687-1236
Product	Biodiesel from waste vegetable oil

Description:

The Alabama Department of Economic and Community Affairs (ADECA) – Energy, Weatherization and Technology Division (EWT) is partnering with the City of Eufaula to demonstrate the production of biodiesel from waste vegetable oil for use in city vehicles and school buses. Originally, the project manager, Bill Clark, collected waste vegetable oil from area restaurants. Now he has a steady supply from a chicken processing plant owned by Keystone Foods near Eufaula. This plant generates 70,000 gallons of relatively uniform, high quality waste vegetable oil a year and allows the City of Eufaula to take as much as they need at no cost. The city produces about 25,000 gallons per year, and blends it 50:50 with regular diesel. The biodiesel blend is used to fuel municipal vehicles such as garbage trucks and equipment such as backhoes. The city is currently working toward achieving American Society for Testing and Materials (ASTM) certification for the biodiesel. Once certification is achieved, the city plans to use the fuel in its school buses.

Contact: Bill Clark

Bioenergy Directory

County	Tuscaloosa
Company	U. S. Energy Inc.
Address	
City	Cottondale
State, Zip	AL
Telephone	
Product	Biodiesel, Ethanol, and Methanol

Description:

The Tuscaloosa county Industrial Development Authority approved tax abatements for an 87 million dollar biodiesel and ethanol/methanol plant located in the Cottondale area. The company, U. S. Energy Inc., will be led by Mark Warner and is expected to employ 54 people and generate nearly 19 million dollars in tax revenues over a 20 year span. Construction is expected to begin in January of 2007 with biodiesel production to begin in May of 2007. The company will be able to use any type of vegetable oil or animal rendering as feedstock. Ethanol/methanol productions are expected to begin in 2009.

Bioenergy Directory

County	Marshall
Company	Alternative Fuel Technologies/ Tucker Milling
Address	4800 Lake Guntersville Park Dr
City	Guntersville
State, Zip	AL, 35976
Telephone	(256) 582-2552
Product	Biodiesel from soybean oil

Description:

Joe Flippin, president and CEO of Alternative Fuel Technologies, LLC Brian Tucker of Tucker Milling in partnership with Tucker Milling of Guntersville, AL have announced plans to build a 50 million gallon biodiesel production facility located one half a mile from the Cargill crushing plant. The plant will utilize a proprietary technology for producing biodiesel and the glycerin by product will be burned on site as an energy source.

Bioenergy Directory

County	Winston
Company	Future Fuels
Address	3307 Fondren Av.
City	Haleyville
State, Zip	AL, 35565
Telephone	(205) 369-3039
Product	Biodiesel

Description:

Future Fuels is a growing biodiesel business in Haleyville, Alabama. Each week, the two person operation produces and sells 4,500 gallons of 100 percent biodiesel derived from soybean oil. Brad Taylor and Marlon Wakefield researched the production process, became registered with the Internal Revenue Service (IRS), and began perfecting a formula they could use for fuel. Taylor and Wakefield voluntarily sent their fuel to a government lab to be certified as glycerin-free. Today, Future Fuels has several regular customers who would like to buy more than 4,500 gallons a week. Although Future Fuels maintains consistent quality standards the company is only surviving through IRS incentives. The cost of soybeans and their transport, washing and preparing, etc., make biodiesel the same price as gasoline. Through rebates from the IRS, Future Fuels is able to make the fuels slightly lower in price than gas in order to be competitive, but it leaves little money for capital investments. Soybean costs are volatile and Future Fuel is considering importing palm oil from overseas to maintain price and quality.

bradleyrtaylor@hotmail.com

Bioenergy Directory

County	Tuscaloosa
Company	Alabama Biodiesel Corp.
Address	12982 Cracker Rd.
City	Moundville
State, Zip	AL, 35474
Telephone	(205) 371-8740
Product	Biodiesel from refined bleached deodorized soybean oil

Description:

Alabama Biodiesel Corp. is located on 54 acres along the banks of the Warrior River and converts soybean oil into biodiesel. At full capacity the plant could produce up to 30,000 gallons of biodiesel per day or 10 million gallons a year. The plant currently produces 24,000 gallons per day with expectations to triple within the next year. The biodiesel currently exceeds the American Society of Testing and materials (ASTM) and European standards for quality. The biodiesel is distributed throughout the southeastern region and is a cleaner burning fuel than petroleum diesel. The biodiesel project was funded through a competitive the Department of Energy (DOE) State Energy Program-Special Project grant.

Bioenergy Directory

County	Baldwin
Company	Earth Clean Technologies, Inc.
Address	424 Village Drive
City	Daphne
State, Zip	AL, 36526
Telephone	(251) 610-6966
Product	Biodiesel production from grease trap waste and used cooking oils

Description:

Earth Clean Technologies (ECT) primary line of business has been assisting restaurants by managing their grease programs. ECT currently has contracts with 200 restaurants and food service establishments in the Gulf Coast area. In September of 2005, Daphne Utilities partnered with ECT to find ways to remove grease from the sewer and find ways to turn waste into energy. ECT built a second biodiesel processing system on Daphne Utilities property in October of 2005 and has supplied a large portion of DU diesel fuel needs from waste grease. In August of 2006, ECT began operation of the third biodiesel and will be capable of producing 700 to 1200 gallons of B100 biodiesel per day and will meet the needs of medium to large sized municipalities. ECT and DU are successfully converting grease trap waste to energy and desire to develop a model program for other utilities to follow.

Bioenergy Directory

County	Lee
Company	Eastwood Christian School
Address	2176 Lee Road 183
City	Opelika
State, Zip	AL, 36801
Telephone	(334) 749-1859
Product	Biodiesel production from used oil and algae

Description:

In March of 2005, Eastwood Christian School established a Biodiesel Research Lab. The lab has been upgraded to a 900 square foot facility and produces approximately 600 to 700 gallons of biodiesel per week.

Current projects include:

Two Mercedes running on straight vegetable oil, fourteen test vehicles running on biodiesel, two bull dozers, one track hoe, three pickup trucks, three school buses, two school vans and three farm tractors. Current winterization of fuel in environmental chambers. The school has also acquired 50,000 gallons worth of water tanks for our algae fuel research.

Goal:

To produce 1,000 gallons of biodiesel per week, produce biodiesel from algae and kudzu, training programs for the general public and organizations, supply fuel to emergency management organization and local municipalities.

Bioenergy Directory

County	Elmore
Company	Alabama Correctional Industries
Address	1400 Lloyd Street
City	Montgomery
State, Zip	AL, 36107
Telephone	(334) 261-3600
Product	Waste oil burning furnaces and biodiesel production

Description:

Alabama Correctional Industries (ACI) is acquiring two waste oil-burning furnaces and a farm scale biodiesel processor for installation at its Draper Farm operation located in Elmore. These bioenergy units will provide excellent demonstrations models for farm-scale units. The two waste oil-burning furnaces will convert the waste oil into heat for fleet services and farm offices. The biodiesel processor has been purchased with anticipation of approximately 100,000 pounds of waste vegetable oil to be collected annual for conversion to biodiesel. Current contracts with Vinyard Technologies are underway to use anaerobic digesters to convert institutional food waste to biogas to fire boilers and run dryers or run generators to produce electricity.

Bioenergy Directory

County	Lee
Company	Wiregrass BioDiesel, CDR Enterprise, LLC
Address	7330 Lee Rd 166
City	Opelika
State, Zip	AL, 36804
Telephone	(334) 703-6664
Product	Biodiesel production plant

Description:

Wiregrass BioDiesel, a company of CDR Enterprise, LLC, is poised to supply high quality, soybean based BioDiesel fuel to the southeast Alabama market. The company is in its start-up phase as a medium scale operation, with plans for expansion as our “right to grow” is earned. Future plans include development of alternate sources of agriculture-based feedstock oil.

Wiregrass BioDiesel (WGB) intends to manufacture a soybean oil-based alternative fuel termed BioDiesel or B100 to ASTM specifications. Our innovative continuous process design calls for the soybean oil to be mixed with a carefully controlled ratio of methanol and caustic catalyst using elevated heat and pressure along with vigorous agitation to increase the reaction rate and improve yield. The initial output will be approximately 2.3 million gallons per year with the capability of increasing to 2.8 million gallons per year.

Bioenergy Directory

County	Jackson
Company	Alabama Bioenergy Inc.
Address	301 North Jackson Street
City	Tullahoma
State, Zip	TN, 37388
Telephone	(931) 455-4020
Product	Biodiesel production plant

Description:

Alabama BioEnergy's 50,000-square-foot plant is located in Bridgeport, AL at the site of the century-old Jacobs Manufacturing cast-iron plant. Alabama BioEnergy will begin producing 40,000 gallons of biodiesel fuel a day.

The plant will use soybeans from farms in Alabama and neighboring states. The oil will be extracted at mills in Decatur and Guntersville.

Greg Sandlin, a consulting engineer for Alabama BioEnergy, wrote the application for a \$500,000 Renewable Energy grant that Gov. Bob Riley presented in Bridgeport. According to the Department of Agriculture, the grant is the first of its kind in the state. It was made possible through the 2002 Farm Bill President Bush pushed to help the country become less dependent on foreign oil. The company will store the fuel in six 30,000-gallon tanks. From there, the fuel will be pumped into rail cars, tractor-trailer rigs and barges nearby at the Alabama State Docks on the Tennessee River.

Bioenergy Directory

County	Madison
Company	Southeast BioEnergy, LLC
Address	2015 Alexander Drive SE
City	Huntsville
State, Zip	AL, 35801-1661
Telephone	(256) 534-5787
Product	Biodiesel production plant

Description:

The Athens City Council approved about \$1.1 million in tax abatements to lure a \$9 million biodiesel company to Elm Industrial Park.

Melvin and Beverly Kilgore of Huntsville announced that their new company, Southeast BioEnergy LLC, plans to build a 4 million gallon per year biodiesel research and development facility. The company is buying 7.9 acres for \$80,000, and has an option on another 8 acres. The Kilgore's are both chemists and microbiologists who work for the Huntsville analytical lab Sentinel. Plans call for building in phases. The first phase would produce about 4 million gallons of biodiesel, an alternative fuel made from soybeans, beef tallow, pork tallow, poultry fat, and vegetable and animal oils.

Phase 2 would follow as soon as the company can perfect the first phase's production process. Eventually, the plant will produce about 80 million gallons a year.

Bioenergy Directory

County	Monroe
Company	Independence Renewable Energy Corp.
Address	PO Box 9
City	Perdue Hill
State, Zip	AL, 36470
Telephone	(251) 743-8292
Product	Biodiesel production plant

Description:

A new industry that will manufacture eco-friendly biodiesel fuel is coming to Monroe County. Parsons & Whittemore (P&W), a privately held company based in New York, announced today that it will build a biodiesel refinery at Claiborne, where it also owns and operates the Alabama River and Alabama Pine pulp mills. The new biodiesel company, known as Independence Renewable Energy Corporation, will utilize state-of-the-art technology to initially produce 20 million gallons of biodiesel annually. The primary base or feedstock for the plant will initially be soybean oil, although the facility design provides the flexibility for expansion as well as the use of alternate feedstocks. Construction on the refinery will begin immediately and production is expected to start in the first quarter of 2007. The refinery's biodiesel will be sold to local distributors and blenders and mixed with petroleum to make different grades for end-users.

Bioenergy Directory

County	Jefferson
Company	Allied Renewable Energy, LLC
Address	824 Heatherwood Cir.
City	Birmingham
State, Zip	AL, 35244-2279
Telephone	(205) 995-8424
Product	Biodiesel production plant

Description:

Allied Energy Corp., co-owned by Rice Oil Co. owner Bart Rice is building the plant alongside its pipeline terminal in southwestern Birmingham near Lawson State Community College. The facility will sell 80/20 biodiesel, a blend of about 80 percent regular petroleum diesel and 20 percent biodiesel. Rice, who is managing partner of Allied Renewable Resources LLC, a newly created arm of Allied Energy, said the biodiesel plant will create 15 to 20 jobs and have the capacity to produce about 20 million gallons of biodiesel per year.

Sherman Industries Inc., a Birmingham-based subsidiary of Pennsylvania-based Lehigh Cement Co., has been using biodiesel produced by Rice Oil Co. as part of a pilot program for four months. The company operates 10 cement factories in Alabama and plans to buy up to 600,000 gallons of biodiesel from Allied Renewable Energy, or 40 percent of its fleet's total consumption.

Bioenergy Directory

County	Montgomery
Company	Department of Finance, State Motor Pool
Address	386 South Ripley St.
City	Montgomery
State, Zip	AL, 36130
Telephone	(334) 242-4043 Ext. 228
Product	Ethanol for state motor pool vehicles

Description:

The State Motor Pool has 207 vehicles assigned. Of the 188 cars, 125 have Flex Fuel Engines (E85). In FY07 we plan on purchasing 20-25 new cars that will all have E85 engines. We currently run gasoline in all our vehicles because ethanol is not available in our immediate area. All of our flex fuel vehicles have ethanol stickers on them promoting ethanol. The State Motor Pool is in the process of installing E85 tanks and pumps and this project should be completed around the first of January. This facility will be available to all state agencies to purchase ethanol. Ethanol is on State Contract and as soon as our tanks and pumps are installed we will purchase and stock ethanol. Our facility will be open 24/7 at 386 South Ripley Street in Montgomery.

Bioenergy Directory

County

Company Farmers Fuel of America, LLC.

Address 3120-H100 Medlock Bridge Rd.

City Norcross

State, Zip GA, 30071

Telephone (770) 368-0030

Product Farm-scale ethanol production facilities in Bessemer, AL

Description:

Using commercially available equipment, Farmers Fuel of America, LLC has developed a small scale ethanol plant. This plant can operate in the economies of scale available in the Southeastern United States. The equipment is built on skids, allowing for factory production and shipment to the site (such as a farm or ranch). The smaller design would allow distillate grains to be consumed by farms with smaller quantities of livestock. Distillate grains can be fed to cattle, pigs, chickens, goats, fish, etc. The plant should be significantly profitable and allow the farmer to pay off the equipment in 2 to 5 years depending on the price of gasoline. Rural Income to Farmers: Gives flexibility and income to farmers and ranchers. In order to validate the design, a prototype plant is being built in Bessemer, AL. This plant will be able to make 50 gallons of dehydrated ethanol a day, but can be rapidly expanded to 1000 gallons a day when success and efficiencies are demonstrated.

www.farmersfuel.com

Bioenergy Directory

County	Jefferson and Shelby
Company	The City of Hoover
Address	100 Municipal Drive
City	Hoover
State, Zip	AL, 35216
Telephone	(205) 444-7500
Product	Ethanol for state motor pool vehicles

Description:

With the introduction of the Chevrolet Tahoe's to our fleet, we have dramatically increased our alternative fueling campaign. Fleet Management purchased the first load of E-85 in May of 2004. Our new police Tahoe's and many other vehicles now run on E-85 fuel which is a blend of 15 % gasoline and 85 % alcohol. The ethanol fuel, known as E-85 is more environmentally friendly and runs efficiently in our fleet. We have also introduced bio-diesel fuel to our fleet of diesel engine vehicles. Bio-diesel is made from soybeans and used cooking oil that has been filtered and processed to run cleaner than the regular diesel fuel on the market. Our hope is that in the near future these new alternative fuels will be more readily available and more widely used. The City of Hoover is proud to be on the front line in the effort to help our country cut its need for foreign oil. At this time, The City of Hoover is the only city or business in the State of Alabama to be using these inventive measures.

www.hooveral.org/City.asp?PageID=31

Bioenergy Directory

County	Dale
Company	Alabama Renewable Energy Alliance, LLC
Address	8395 Williams Road
City	Palmetto
State, Zip	GA, 30268
Telephone	(404) 473-1266; (678) 618-4129
Product	Ethanol plant

Description:

The Alabama Renewable Energy Alliance, LLC plans to build a 55 million gallon ethanol facility in the William T. Thweatt Industrial Park in Dadeville, Al. The \$135 million facility is expected to be completed in the fall of 2008 and employ 40 to 50 people. The ethanol will be produced from 20 million bushels of corn annually and will run entirely from renewable energy resources. The facility will include an on site co-generation plant that will create its own steam and electricity through a fluidized bed boiler the will be powered by local woody biomass as the energy source.

Bioenergy Programs

Bioenergy Directory

County	Lee
Company	Auburn University
Address	Center for Bioenergy and Bioproducts Steve Taylor, Director
	Auburn University Natural Resource Management Development Institute Larry Fillmer, Executive Director
City	Auburn
State, Zip	AL 36849
Telephone	334-844-3534
Product	Research and Outreach on various aspects of bioenergy and bioproducts.

Description:

Auburn University is placing major emphasis on biofuels through activities in its Center for Bioenergy and Bioproducts. This Center operates as part of the Auburn University Natural Resource Management & Development Institute and has goals of advancing economic development in Alabama through reinvigoration of the present natural resource-based industries, and establishing new industries based on energy and value-added products from renewable biomass resources. The Center for Bioenergy and Bioproducts is focusing its efforts on research and outreach to help find and deploy technologies to make bioenergy cost-competitive with traditional petroleum-

based energy products. Programs are emphasizing a balanced portfolio of regionally-appropriate biomass feedstocks and energy technologies. Systems approaches and industry partnerships are important aspects of these efforts.

Activities in the bioenergy and bioproducts area include major equipment acquisitions and focused research and outreach projects. Major equipment acquisitions underway include:

- Installation of a biomass fractionation facility;**
- Installation of a gasification and gas-to-liquids laboratory;**
- Development of a mobile, demonstration gasification and combined heat and power generation unit; and**
- Installation of a large scale fermentation facility.**

These equipment acquisitions compliment longstanding programs and facilities housed in Auburn laboratories focused on biomass processing and handling; cellulosic biomass pretreatment and fermentation; and thermochemical conversion of biomass to liquid fuels and other high value products through Fischer-Tropsch processes.

Research and outreach projects (with investigators shown) sponsored by the Center for Bioenergy and Bioproducts currently include:

- Updating and expanding biomass and bioenergy source inventories for Alabama (Yifen Wang, Ken Muehlenfeld, Lisa Samuelson, Larry Teeter, Hanqin Tian)**
- Agronomic studies with switchgrass (David Bransby)**
- Algaculture for feedstocks in Alabama: A feasibility assessment (Ron Putt)**

- **Evaluating methods and costs on an excavator based feller-buncher in southern forests (Tom Gallagher, Mathew Smidt, Tim McDonald)**
- **Developing procedures for handling and gasifying poultry litter (Oladiran Fasina, Tim McDonald)**
- **Demonstration of alternative energy solutions for farms, businesses, and municipalities (Mark Hall, John Fulton, Tim McDonald)**
- **Liquid transportation fuels from biomass using a gas-to-liquids approach (Chris Roberts, Mario Eden)**
- **Production of cellulase enzymes from paper mill sludges (Y.Y. Lee)**
- **Value prior to pulping: the integrated forest biorefinery (Gopal Krishnagopalan, Harry Cullinan).**

Bioenergy Directory

County	Morgan
Company	Alabama Mountains, Rivers and Valleys Resource Conservation
Address	4511 U.S. Highway 31 South
City	Decatur
State, Zip	AL, 35603
Telephone	(256) 353-6146 Ext. 2
Product	Efficient Poultry House Energy Utilization: Cooking Oil Furnaces

Description:

To address rising heating costs and to conserve energy, this project recycles a waste product, cooking oil from restaurants, as a fuel on poultry farms. The poultry farms will serve as demonstration sites for other farmers and poultry industry stakeholders to visit. We will demonstrate the heating savings by comparing side by side houses (one with the standard propane heating system and one utilizing the Used Cooking Oil Burner). In addition we will do an energy audit on these buildings. When the on-farm demonstrations are held we will illustrate energy conserving practices / adaptations that could be implemented on the house. The second demonstration will follow the same format as above but will be on an energy efficient house.

Used cooking oil generates 27,000 to 30,000 more BTUs per gallon, or 130 percent more BTUs per gallon than propane. Therefore, it takes 30 percent fewer gallons of used cooking oil to generate the daily BTU requirements.

Bioenergy Directory

County

Company ADECA/Central Alabama Clean Cities

Address 4511 U.S. Highway 31 South

City Decatur

State, Zip AL, 35603

Telephone (256) 353-6146

Product I-65 Biofuel Corridor

Description:

A federal grant awarded by the U. S. Department of Energy will provide \$312,000 to the state of Alabama to add pumps for E85 ethanol and B20 biodiesel at six service stations along I-65. The grant is part of a project that will place 31 E85 stations along I-65 in Alabama, Tennessee, Kentucky and Indiana. The six areas in Alabama are Huntsville/Decatur, Cullman, Birmingham, Montgomery, Evergreen/Greenville and Mobile. The Energy, Weatherization and Technology division of the Alabama Department of Economic and Community Affairs (ADECA) and the Central Alabama Clean Cities Coalition will host workshops and events to recruit retailers to participate in the grant project. Grant funds will cover up to 50 percent of the cost for retailers to add the infrastructure. The federal government also offers a 30 percent tax credit for installation of alternative fuel stations. The Governor Riley has proposed state tax incentives to encourage commercial development and private use of alternative fuels. Alabama also offers tax incentives to encourage biofuel production and use within the state.

Bioenergy Directory

County

Company ADECA (Mike Roden)

Address 4511 U.S. Highway 31 South

City Decatur

State, Zip AL, 35603

Telephone (256) 353-6146 Ext. 2

Product On-Farm Energy Audit Project

Description:

Alabama Agriculture is facing rising energy costs, but for the most part, is unable to offset the increases by raising the cost of their products.

Agriculture is totally market dependent and thus higher energy costs mean lower profits or deficit spending. So in order to stay in business, Agri-businesses must cut costs internally. Energy use in the equipment barns, animal confinement units, lighting, fans, equipment and tillage practices are areas where significant cost savings / energy conservation can occur.

To address the identified problem we will:

- 1) Identify on-farm energy conservation opportunities**
- 2) Coordinate with any current or future Farm Bill incentives for farmers**
- 3) Conduct a state On-Farm Energy Conservation Workshop for farmers.**
- 4) Conduct a Training Workshop a minimum of one person per USDA authorized RC&D Project area in with a maximum of 18 to do on farm energy audits.**
- 5) Conduct energy audits**

❑ What Is An Energy Audit?

According to the USDA, and “energy audit identifies and evaluates energy management opportunities on the farm or ranch. During an audit, a baseline is developed to characterize and record on-farm energy use. Individual unit operations, processes, and major energy-consuming equipment are evaluated to identify energy management opportunities and high-return-on-investment projects. An action report is produced that describes the baseline, each major conservation opportunity area, an estimate of the cost to implement the changes, the potential savings that will be generated, and an estimation of the payback period. At minimum we want to identify baseline usage for non-residential structures and all stationary equipment used in the farming operations. Vehicles and farmsteads would be excluded”.

❑ Opportunities For Energy Conservation:

Opportunities for energy conservation are available in almost every application or operation on the farm or ranch. Energy conservation can be achieved from simple management changes, such as shifting energy consuming irrigation to hours of low evapo-transpiration, implementing conservation tillage, changing lighting systems or conscientiously completing scheduled maintenance so that systems work at optimal levels.

The advantages of energy conservation include reducing air pollutants, reducing global greenhouse gas emissions, reducing dependence on petroleum based products, and demonstration of energy efficiency and conservation operations. Contact: Mike Roden 256-353-6146 or mike.rodan@al.usda.gov

Bioenergy Directory

County	North Alabama Template
Company	Co-Op Conservation Partnership Initiative (CCPI)
Address	4511 U.S. Highway 31 South
City	Decatur
State, Zip	AL, 35603
Telephone	(256) 353-6146 Ext. 2
Product	Coordinating Poultry Litter Supplies for Value Added Energy Uses: North Alabama Template

Description:

This project brings together poultry litter stakeholders in the Sand Mountain Lake Guntersville Watershed Area to plan for a centralized poultry litter collection and distribution system. The goal is to supply potential industry and value added users with litter for alternative energy production. The system will be coordinated among growers, vendors, integrators, and end users of poultry litter as related to the future centralized alternative uses in Alabama.

Coordinated supplies of poultry litter will be from:

Alabama Mountains Rivers and Valleys RC&D Council (AMRV-RC&D)

Sand Mountain Lake Guntersville Watershed Conservancy District

Poultry growers, integrators and vendors

Centralized end users of poultry litter

Natural Resources Conservation Service

Alabama Department of Environmental Management and Ag. Industries

Agricultural Universities

Emerging centralized uses will be identified and drive site-specific aspects of planning such as GIS-based storage and transportation, integral elements of the plan such as bio-security, cost/benefit analysis, water quality impacts, converting to clean-outs on a staggered year-round basis, and managing for more consistent moisture will be addressed. A consensus plan will be developed to implement changes in both public and private sector operations required to optimize supplies of poultry litter for centralized uses.

State Conservationist cooperating on the project; Gary Kobylski

Project partners

Tennessee Valley Authority (TVA), Alabama Department of Agriculture and Industries (ADAI), Center for Economic Development and Resource Stewardship (CEDARS), Auburn University & Alabama A&M University.

Collaborators and primary

The Sand Mountain Lake Guntersville Watershed Conservancy District, Auburn University, Alabama Department of Environmental Management, Alabama Cooperative Extension System, Alabama A&M University, Soil and Water Conservation Districts in Cullman, Marshall, DeKalb, Jackson, Madison, Morgan, Blount Counties, TVA (Economic Development and/or Resource Stewardship Groups), Appalachian Regional Commission, CEDARS, Alabama Department of Agriculture and Industries, AMRV-RC&D, Alabama Clean Water Partnerships in the Upper Black Warrior and Tennessee Valley Basins.

We are targeting two hundred producers in the five county areas.

The project planning phase is twelve (12). The anticipated starting date of the project implementation phase is 07/01/07 and should be completed in 3 years.

Project Director Brian Brown email: bbrownrcd@aol.com

Bioenergy Directory

County	Madison
Company	University of Alabama in Huntsville
Address	
City	Huntsville
State, Zip	AL, 35801-1661
Telephone	podilag@uah.edu
Product	Improving Tree Biomass

Description:

Forests and trees are the ultimate terrestrial systems for carbon sequestration and are carbon neutral. Tree biomass fuels “recycle” atmospheric carbon, minimizing the impact of global warming while virtually eliminating sulfur emissions and mitigating acid rain. Forest and croplands in the U.S. have the potential to provide a 7-fold increase in biomass compared to present usage. Our lab has been involved in tree research for over 15 years, and during the last 6 years we have isolated a variety of aspen MADS-box transcription factor genes important in processes including flower formation, leaf development, and vascular development.

Contribution from our lab:

- **Identify genetic determinants for biomass and yield.**
- **Understanding how genetic regulatory factors control carbon allocation and partitioning involved in carbon sequestration.**
- **The potential to sequester carbon using poplar trees engineered to grow faster, produce larger roots systems, and develop woodier biomass could be substantial.**

Bioenergy Directory

County	Madison
Company	University of Alabama in Huntsville
Address	
City	Huntsville
State, Zip	AL, 35801-1661
Telephone	Davism1@uah.edu
Product	Enzymatic Bioconversion of Biomass utilizing Fungi

Description:

Additional economic impacts on the production cost of bioethanol production lie in the enzymatic hydrolysis of the cellulosic and hemicellulosic polymers abundant in the plant cell walls. The activities that are mined from fungi are unique because they secrete enzymes that penetrate the plant cell walls. Isolated enzymes have been a high cost reagent; however through modifications by Genencor and Novozyme they have higher conversion levels for biomass.

Bioenergy Directory

County

Company

**University of Alabama in Huntsville
Alabama Department of Economic and Community
Affairs**

Address

City

State, Zip

AL

Telephone

(334) 242-5330

Product

Grant for Using Wood Waste to save Money

Description:

The Alabama Department of Economic and Community Affairs (ADECA) – Energy, Weatherization and Technology (EWT) Division and the University of Alabama in Huntsville (UAH) have teamed together to promote the use of wood waste and other biomass (plant derived material) in the production of useful energy for commercial, industrial and institutional facilities.

Companies that generate wood waste can benefit from this program offered by the state of Alabama: the Alabama Biomass Energy Interest Subsidy Program.

The purpose of this program is to provide reimbursement of interest on loans to install equipment capable of using biomass waste as an alternative energy source. Eligible participants include commercial, industrial, institutional and agricultural property owners. City, county, or state entities are also eligible. Qualifying projects will include equipment for producing hot water, steam and/or, hot air. Equipment for unloading, storage, and transport is also

eligible, along with equipment controls, pollution controls and building modification. Equipment must operate on solid, liquid or gaseous biomass energy. Waste can come from logging, animal production, forest and agricultural manufacturing processes, or landfills.

The level of assistance will not exceed \$75,000 payable over a 3-year period for each qualifying project. The loan interest rate must not exceed 2% above the prime rate at the time the loan is made. Subsidy payments will be made directly to the participant upon receipt of documentation such as a statement of account from the lender showing the principal and the interest amount to be reimbursed.

In order to meet requirements for participation in the program an applicant must submit a preliminary design of the project and data on the expected performance of the system; provide firm evidence of financing from a lending institution; provide firm evidence of an adequate biomass fuel supply; be willing to demonstrate the project to potential participants; provide energy consumption records and operational data such as maintenance and repair records; permit the state to conduct a final inspection; provide final cost details; and complete the project within 1 year of funding.

The program evaluation process involves a technical review of the project including the completeness of the preliminary design, the adequacy of the specifications and the fuel supply, the soundness of the proposed project, and other elements crucial to meeting the objectives of the program.

For more information on this program or to receive an application, contact Clarence Mann at ADECA-EWT Clarence.Mann@adeca.alabama.gov or (334) 242-5330. At UAH, contact Heather Shar sharh@email.uah.edu or (256) 824-6248.

Information Resources

<http://www.nrbp.org/updates/2006-02.pdf>

Alabama Liquid Biofuels Plan Grant and Alabama Alternative Transportation Fuels Taskforce

Contact: Russell Moore

**Alabama Department of Economic and Community Affairs
(ADECA)**

334-242-5294

russellm@adeca.state.al.us

A grant was executed between the Southern States Energy Board and ADECA to develop a Liquid Biofuels Plan for Alabama. This project will develop a comprehensive liquid biofuels plan that will increase biofuels awareness in the state and serve as a guide for future state investment in the development of the biofuels industry in Alabama. ADECA also established the Alabama Alternative Transportation Fuel Taskforce to promote the production, distribution, and use of alternative fuels, especially biofuels, in Alabama.

The [Southern States Energy Board \(SSEB\)](#) has been awarded a cooperative agreement to administer the Southeastern Regional Biomass Energy Program (SERBEP), funded through the Department of Energy's Atlanta Regional Office. The Program encourages economic development through public/private partnerships that demonstrate bioenergy technology applications.

Please email [Kathy Baskin](#), or call (770) 242-7712, for SERBEP

Program/Project Information. For SERBEP Technical Information, email

[Phillip Badger](#), or call (256) 740-5634.

**The Alabama Department of Economic and Community Affairs (ADECA)
Energy, Weatherization and Technology Division (EWT)
Bioenergy Activity Category 5 – Bioenergy Project Funding Agencies**

Contact: Kathy Hornsby

**Renewable Energy Program Manager
PO Box 5690
Montgomery, AL 36103-5690
(334) 242-5284**

Kathy.hornsby@adeca.alabama.gov

ADECA-EWT BIOENERGY ACTIVITIES

Renewable Energy Program

The ADECA-EWT Renewable Energy Program promotes the adoption of renewable energy technologies in Alabama as a method to increase energy security and environmental sustainability. EWT plans to raise consumer awareness and acceptance of available biofuel, biomass, solar and biogas technologies and facilitate technology transfer through the demonstration of renewable energy technologies and active outreach.

Biomass Energy Program

ADECA-EWT promotes renewable energy through the Biomass Energy Program, which encourages the use of wood waste as an alternate energy source. The program grants up to \$75,000 in interest reimbursement payments to qualified entities that take out loans to finance installation of wood energy systems. Thirty-six (36) projects have been completed disposing of more than 256,000 tons of wood waste and saving over \$10 million annually in energy costs.

Agriculture Energy Program

The Agriculture Energy Program assists the agriculture industry in reducing energy costs and increasing production. Funded by monies made available to the state through the Oil Overcharge Restitution Program from DOE, this program provides education and financial assistance for the implementation of energy efficiency technologies and equipment, and renewable energy solutions for agriculture.

A RFP for energy efficiency technology and technique demonstration and renewable energy projects is released every other year. All projects are required to include a strong outreach component. EWT hosts an annual Agriculture Energy Conference to disseminate results of projects and address relevant agriculture energy issues.

Alternative Transportation Fuels Program

The Alternative Transportation Fuels Program encourages and promotes the use of alternative transportation fuels as a way to increase the overall efficiency of the transportation system, improve air quality and promote energy independence. The EWT Division is assisted in this effort by the Alabama Alternative Transportation Fuels Taskforce, established in 2005, to promote the production, distribution and use of alternative transportation fuels in Alabama.



<http://www.eia.doe.gov/>



U.S. Department of Energy
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1-800-dial-DOE

<http://www.energy.gov/>

<http://www.fedstats.gov/>

<http://www.usa.gov/>