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**FRIENDS,** America is blessed with a bounty of resources that have allowed it to become the respected, leading force it is today. One of our greatest resources is the boundless reservoir of innovative, creative entrepreneurship that is changing the way the world works. A shining example of this resource in action is our continually growing and evolving domestic ethanol industry.

The emergence of the domestic ethanol industry as a force in the nation's motor fuel market has never been more apparent than in 2011. With nearly 14 billion gallons of production, ethanol is now ten percent of America's fuel supply and 25 percent of all the motor fuel produced from domestic resources.

The growth of the domestic industry is having concrete impacts on everyday Americans. It is helping more than 400,000 of our friends and neighbors find work or keep the job they have. It is a \$43 billion industry that contributes more than \$8 billion in taxes to state, federal, and local governments. And, it has lowered the price of gasoline by more than \$0.25 per gallon on average over the past decade.

These benefits are impressive in their own right, but America's ethanol industry has only just begun.

Driven by innovation, existing ethanol producers are improving the processes by which they make ethanol today. They are utilizing less energy and water to produce increasing amounts of ethanol from the same bushel of grain. Additionally, they are producing an ever-increasing and valuable supply of livestock feed that is feeding herds and flocks across the nation and around the world. Simultaneously, these incubators of innovation are discovering new bio-based co-products that can be used to supplant petroleum in the production of other products such as diesel fuel, plastics, chemicals, and lubricants.

The evolution of existing ethanol production is just part of the story. Dozens of companies are rapidly proving out new technologies that will turn America's waste products – garbage, woodchips, ag residue, corn stover, and more – into renewable fuel and other bio-based products. Many of these innovators have pilot and demonstration level projects already producing fuel. And, a handful have commercial scale facilities under development and construction from Oregon to Iowa to Alabama to Massachusetts.

As technologies evolve, so too must the marketplace for ethanol. New fuel blends, like E15, E20, and E30, together with more familiar blends like E85 must be made available. Through the expanded installation of blender pumps and a greater proliferation of flex fuel vehicles, higher level ethanol blends will give consumers a real choice at the pump while making America less vulnerable to the vagaries of the world oil market.

While an expanded and growing domestic market is a clear priority for American ethanol producers, maximizing export opportunities for both fuel and feed will be important to the continued success and growth of domestic ethanol production. In 2011, American ethanol producers filled the global thirst for renewable fuels with more than one billion gallons of ethanol exports. Like domestic demand, export markets will ebb and flow. However, ensuring fair trade opportunities exist for America's ethanol producers will be critical to our continued growth.

In order to achieve the kind of growth and the level of innovation of which this industry is capable, it will take our collective ability to dream big. We must unite around a vision for the industry in which all technologies and business models have a chance to succeed.

America's ethanol industry has an opportunity to reshape the nation's energy future and reestablish American leadership in the field of energy innovation. It is up to us to seize the day. I know that we will.

Sincerely,



Bob Dinneen, President & CEO

# America's Dynamic Energy Industry

**IN A YEAR** DOMINATED BY TALK OF 20TH CENTURY TECHNOLOGIES AND FAILURES OF NEW ENERGY SOURCES, AMERICA'S ETHANOL INDUSTRY IS ONCE AGAIN MAKING CONCRETE, MEASURABLE PROGRESS IN ENDING AMERICA'S ADDICTION TO IMPORTED OIL. FROM CONSISTENT PRODUCTION CAPACITY EXPANSION TO THE IMPLEMENTATION OF NEW TECHNOLOGIES, AMERICAN ETHANOL PRODUCERS CONTINUE TO SUPPLY AMERICA WITH A RELIABLE, RENEWABLE SOURCE OF FUEL AND LIVESTOCK FEED. UNLIKE MORE ANTIQUATED ENERGY SOURCES, AMERICA'S ETHANOL INDUSTRY IS REALLY JUST BEGINNING TO HIT ITS STRIDE.

## A Reliably Expanding Industry

For much of this century, America's ethanol producers have expanded the supply of domestic renewable fuel by leaps and bounds to meet surging domestic demand. In 2011, many of those domestic markets are being saturated as the industry dutifully works to bring E15 ethanol blends into widespread use. Nevertheless, demand for American-made ethanol is strong – both at home and abroad. As it always has, the industry has responded.

Two-thousand eleven marked yet another production record for U.S. ethanol with an estimated 13.9 billion gallons of ethanol operating at 209 ethanol biorefineries located in 29 states. That is an increase from the 13.2 billion gallons of ethanol production in 2010 and up from 1.63 billion gallons in 2000. Annually, these biorefineries have the capacity for 14.9 billion gallons of production and that capacity is growing.

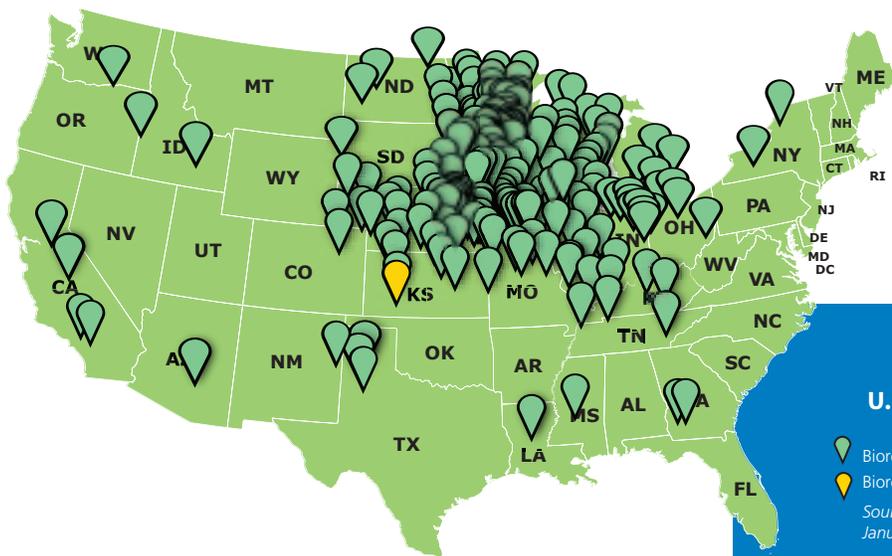
Encouragingly, a number of the ethanol biorefineries that were temporarily closed in the aftermath of the 2008 economic collapse have been brought back into operation. Also a harbinger of things to come, the vast majority of the 209 biorefineries operating are updating technologies that are improving ethanol production, energy efficiency, and the quality of the livestock feed they produce.

## The Race to the Next Generation

Existing ethanol production in the U.S. has been and will continue to be the foundation of America's transition away from a fossil fuel economy. Many existing ethanol biorefineries are exploring technology upgrades that will allow for the production of ethanol from a broader range of feedstocks. These so-called bolt-on technologies will allow ethanol producers to increase ethanol production by converting both grain starch and cellulosic material into fuel at the same facility. Remember, the ethanol molecule is identical no matter the feedstock. Utilizing existing piping, storage, and loading infrastructure at existing facilities may help lower the cost for the first commercial production of cellulosic and advanced ethanol.

The market created by existing ethanol production is also helping pave the way for stand alone, or green field, advanced and cellulosic ethanol biorefineries. Scores of ethanol technology companies are already into the demonstration phase of production, proving that technologies that convert everything from corn stalks to grasses to garbage to algae into ethanol are viable. Importantly, many of these companies are beginning to break ground on commercial-scale biorefineries that will provide tens of millions of gallons of ethanol from a wider range of feedstocks.

All of these technological innovations, together with the development of other biofuel molecules, can break America's addiction to oil, put hundreds of thousands of Americans to work, and help secure a healthier environment for future generations.



### U.S. ETHANOL BIOREFINERY LOCATIONS

- Biorefineries (209)
- Biorefineries under construction (2)

Source: Renewable Fuels Association, January 2012

## U.S. ETHANOL PRODUCTION CAPACITY BY STATE

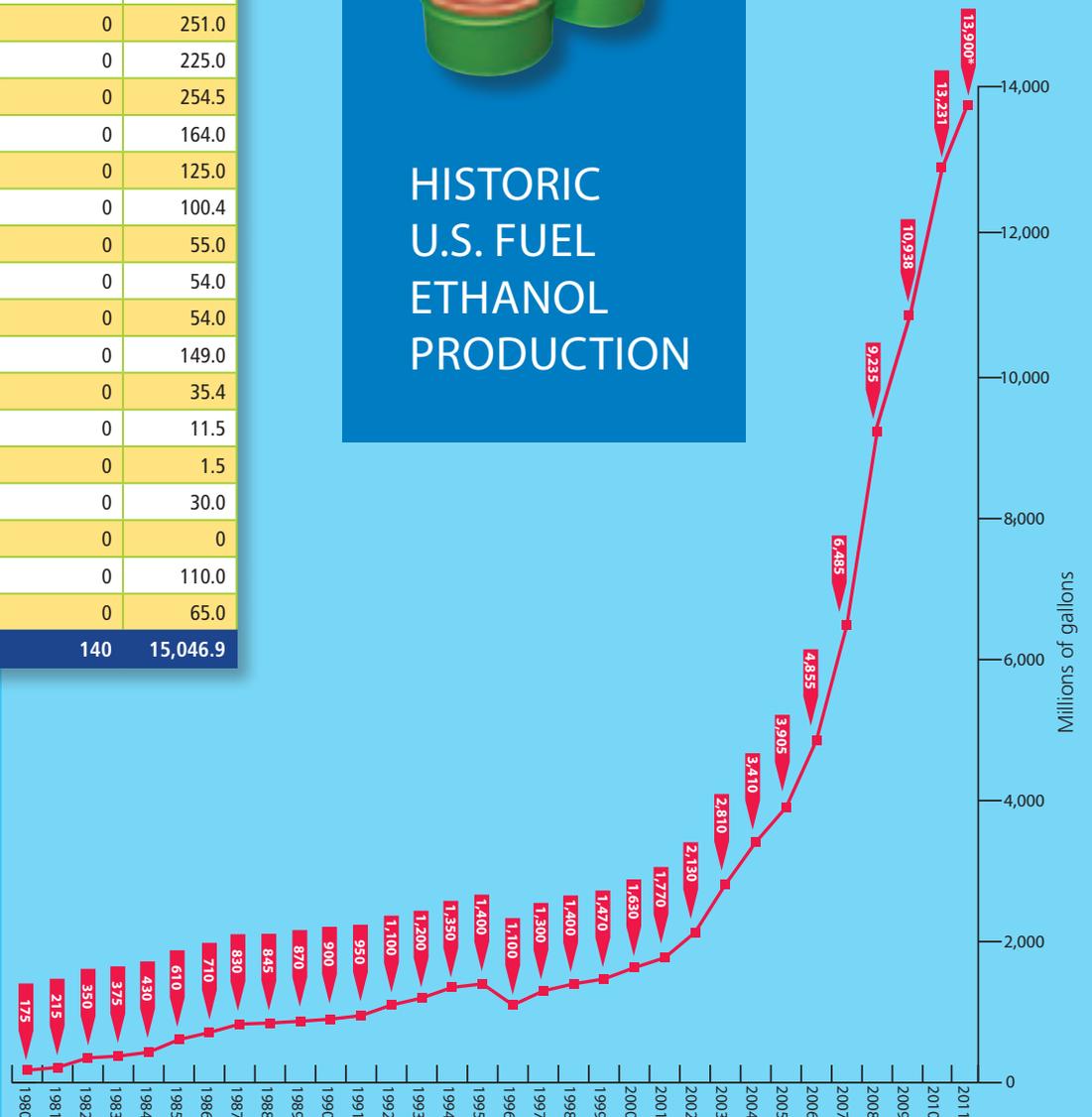
In Millions of Gallons, ordered by operating capacity

	Nameplate	Operating	Under Construction/Expansion	Total
Iowa	3,625.0	3,625.0	115	3,740.0
Nebraska	2,108.0	1,973.0	0	2,108.0
Illinois	1,486.0	1,486.0	0	1,486.0
Minnesota	1,147.1	1,129.1	0	1,147.1
Indiana	1,147.0	1,147.0	0	1,147.0
South Dakota	1,009.0	1,009.0	0	1,009.0
Wisconsin	504.0	504.0	0	504.0
Ohio	538.0	478.0	0	538.0
Kansas	491.5	411.5	25	516.5
North Dakota	393.0	383.0	0	393.0
Texas	355.0	315.0	0	355.0
Michigan	268.0	268.0	0	268.0
Missouri	251.0	251.0	0	251.0
Tennessee	225.0	225.0	0	225.0
California	254.5	178.0	0	254.5
New York	164.0	164.0	0	164.0
Colorado	125.0	125.0	0	125.0
Georgia	100.4	100.4	0	100.4
Arizona	55.0	55.0	0	55.0
Idaho	54.0	54.0	0	54.0
Mississippi	54.0	54.0	0	54.0
Oregon	149.0	41.0	0	149.0
Kentucky	35.4	35.4	0	35.4
Wyoming	11.5	11.5	0	11.5
Louisiana	1.5	1.5	0	1.5
New Mexico	30.0	0	0	30.0
North Carolina	60	0	0	0
Pennsylvania	110.0	0	0	110.0
Virginia	65.0	0	0	65.0
<b>Total</b>	<b>14,906.9</b>	<b>14,114.4</b>	<b>140</b>	<b>15,046.9</b>

DEMAND FOR AMERICAN-MADE ETHANOL IS STRONG – BOTH AT HOME AND ABROAD



## HISTORIC U.S. FUEL ETHANOL PRODUCTION



Source: Renewable Fuels Association, January 2012

Source: U.S. Department of Energy/Energy Information Administration, January 2012

\*Estimated

# From Farm to Feed and Fuel

**ETHANOL** HAS BECOME THE MOST IMPORTANT VALUE-ADDED MARKET FOR **AMERICAN FARMERS**. IN ADDITION TO LEADING THE WORLD IN **FUEL ETHANOL PRODUCTION**, **AMERICA'S ETHANOL INDUSTRY** IS ALSO ONE OF THE LARGEST SUPPLIERS OF FEED IN THE WORLD. FROM FEEDLOTS IN **KANSAS** TO HOG FARMS IN **CHINA**, **AMERICAN ETHANOL LIVESTOCK FEED PRODUCTS** – THE LARGEST OF WHICH IS KNOWN AS **DISTILLERS GRAINS** – ARE PROVIDING MUCH NEEDED PROTEIN, FIBER, VITAMINS AND OTHER NUTRIENTS TO LIVESTOCK FLOCKS AND HERDS AROUND THE GLOBE.

## One Kernel, Endless Possibilities

The production of ethanol in the U.S. has become a multi-faceted endeavor. Capturing the headlines is the 13.9 billion gallons of ethanol production annually. But equally important, America's ethanol producers are supplying increasing volumes of distillers grains and other livestock feed products.

Using industry averages for productivity and efficiency, U.S. ethanol biorefineries used 5 billion gross bushels of corn in 2011. Those bushels yielded 13.9 billion gallons of ethanol and more than 39 million metric tons of livestock feed. More

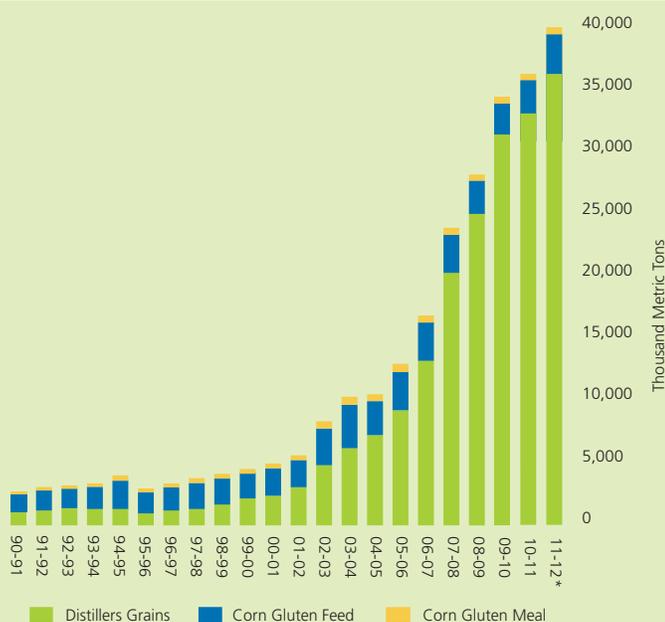


specifically, ethanol producers provided 35.7 million metric tons of distillers grains, 2.9 million tons of corn gluten feed, and 0.6 million tons of corn gluten meal. For perspective, that is considerably more feed production than the amount of grain used at all cattle feedlots across the country.

Interestingly, advances in ethanol production technologies are yielding additional co-products as well. According to RFA analysis, 40% of the nation's ethanol biorefineries are capturing corn oil during the ethanol production process and selling that oil into the feed market, as well as biodiesel and other chemical markets. All told, U.S. ethanol producers supplied an estimated 1.5 billion pounds of corn oil in 2011.

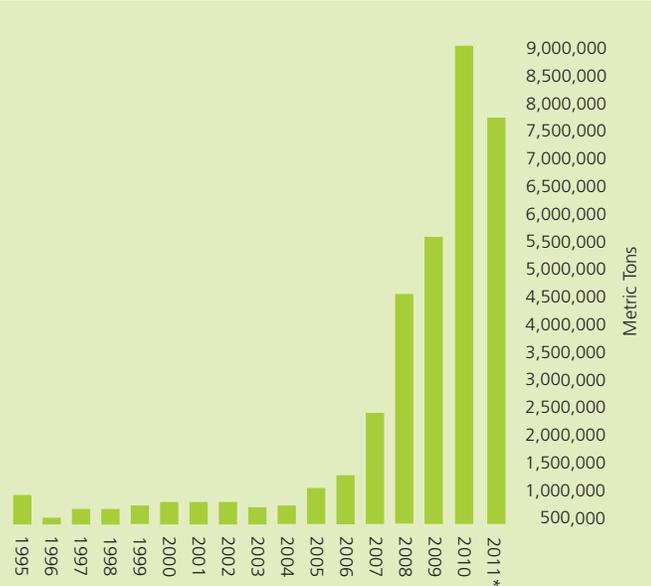
### PRODUCTION OF U.S. ETHANOL FEED CO-PRODUCTS

### DISTILLERS GRAINS EXPORTS



Source: RFA

\*Estimated



Source: USDA-FAS

\*Estimated



**FACT:** One bushel of corn yields 2.8 gallons of ethanol and 17.5 pounds of livestock feed in a dry mill. Dry mill plants extracting corn oil also produce about 0.5 pounds of corn oil per bushel, while wet mills produce 1.5 pounds of corn oil per bushel. Fully one-third of every bushel of corn is returned to livestock feed and other markets.

## Ethanol and Corn: Beyond the Headlines

Ethanol's growing importance to American farmers has other end users of corn crying foul, relying heavily on flawed assumptions and out-of-context statistics to denigrate ethanol production as part of America's energy strategy. As is always the case with many of the arguments of ethanol's critics, a careful examination of the ethanol and corn markets sheds light on the real relationship.

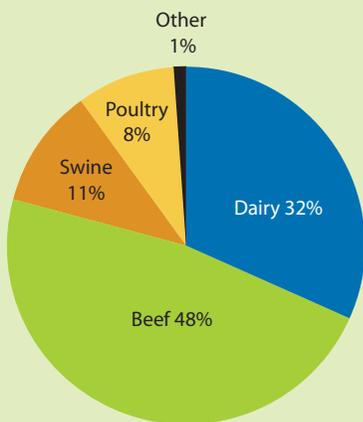
American farmers harvested a corn crop of 12.36 billion bushels in 2011, the fourth largest crop on record. During this time, gross demand for corn from ethanol production was 5.0 billion bushels, or 40% of the total supply. Importantly, ethanol producers supplied 39.4 million metric tons of livestock feed. When this feed production is factored back into the corn supply, the true measure of ethanol's corn demand is 3.5

billion bushels – 26% of the total supply. Importantly, a recent USDA report concluded that one metric ton of distillers grains displaced 1.2 metric tons of the traditional corn and soybean livestock feed ration.

Globally, U.S. ethanol production represents just a sliver of total grain demand. Using the same calculations, U.S. ethanol production utilizes just 3.2% of all grain supplies worldwide.

These facts indisputably refute the contention that ethanol production is utilizing unreasonable amounts of corn. Rather, without the demand for corn brought by ethanol production, it is unlikely farmers would be supplying record or near-record crops each and every year.

**DISTILLERS GRAINS CONSUMPTION BY SPECIES, 2011\***

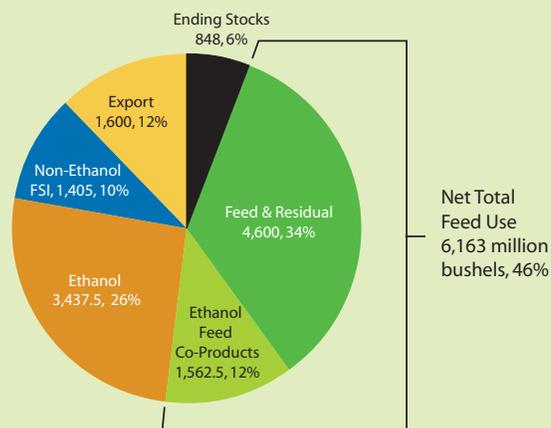


Source: CHS and RFA

\*Estimated

**NET CORN USE, 2011\***

(Million bushels, % of total use)



Source: USDA/OCE

\*Estimated

# Jobs and Economic Opportunity

AMERICA CONTINUES TO STRUGGLE THROUGH AN ECONOMIC MALAISE THAT HAS GRIPPED THE GLOBE. MILLIONS OF AMERICANS REMAIN UNEMPLOYED OR UNDEREMPLOYED. YET, IN MANY STATES WITH ETHANOL PRODUCTION FACILITIES, ECONOMIES HAVE HELD THEIR OWN. MANY OF THESE STATES REPRESENT LARGE, RURAL POPULATIONS THAT ARE OFTEN THE FIRST TO FEEL ECONOMIC PAIN AND THE LAST TO RECOVER. IN DOMESTIC ETHANOL PRODUCTION, THESE STATES AND COMMUNITIES HAVE FOUND AN ECONOMIC ENGINE ON WHICH THEY, AND THE NATION, CAN RELY.

## Driving Job Creation

The economic impact of domestic ethanol production is felt far outside the gates of the ethanol biorefinery. In hundreds of communities across the nation, ethanol production is creating well paying jobs in areas where jobs are too often few and far between.

According to analysis from economic research firm Cardno ENTRIX, the production of 13.9 billion gallons of ethanol supported 90,200 direct jobs and 311,400 indirect jobs all across the country. These are quality jobs in fields like engineering, chemistry, and accounting that provide a good wage and important benefits.

Jobs in domestic renewable fuels production are just that – all-American jobs. Unlike outsourcing our oil needs to jobs in Saudi Arabia, Venezuela, or Canada, domestic ethanol production creates jobs that cannot be sent overseas.

**FACT:** The production of 13.9 billion gallons of ethanol in 2011 created real, measurable economic opportunity, including:

- 90,200 direct jobs
- 311,400 indirect and induced jobs
- \$42.4 billion contribution to GDP
- \$29.9 billion in household income

(Source: Contribution of Ethanol to the Economy of the United States 2011, Cardno ENTRIX, February 2012.)

## Expanding Economic Opportunity

Ethanol production in the U.S. represents a true bright spot in the U.S. economy. According to the Cardno ENTRIX analysis, America's ethanol industry added \$42.4 billion to the national Gross Domestic Product, or GDP.

This is no small feat, yet it is quite understandable. The production of ethanol, distillers grains, corn oil, and other products at the nation's ethanol biorefineries create tens of billions of dollars in value. Moreover, the value-added market for grains and other feedstocks helped strengthen those markets for farmers, providing a shot in the arm for Main Streets all across America.

Additionally, these products represent a growing export opportunity. More than one billion gallons of ethanol and 8 million metric tons of livestock feed produced at American ethanol biorefineries found markets overseas. These exports represented billions of dollars in new economic opportunity and does not include the \$49.7 billion saved in foreign oil imports as a result of our use of domestic ethanol.

## Creating New Opportunities

The rapid rate of innovation and evolution within American ethanol production is bringing new technologies to the market that will increase efficiencies, create new markets for energy crops and waste materials, and employ hundreds of thousands of Americans in innovative new careers, creating a wide range of biofuels using a wide range of sources.

For example, the Abengoa Bioenergy cellulosic ethanol biorefinery under construction in Hutchinson, Kansas, will employ 300 people during construction and 65 full time employees once operational.

Other projects and technologies are nearing commercialization that will add value to existing ethanol production and create exciting new economic and career opportunities in a broad spectrum of bio-based applications like fuels, chemicals, and pharmaceuticals.





### *Guardian Lima, LLC*

*Even with a national economy still sputtering, America's ethanol industry continues to innovate and evolve. A perfect example is the resurrection of a failed ethanol facility in Lima, Ohio. This 54-million gallon per year facility was purchased, reconstructed, and is now open for business. More than 600 applications came in to fill the 33 full time jobs at the biorefinery. For a town of nearly 40,000 people, this means a great deal.*



# Energy Security Through Ethanol

FEW THINGS UNITE AMERICAN OPINION THESE DAYS. YET, A STRONG MAJORITY OF AMERICANS UNDERSTAND THE DANGERS OF AMERICA'S ADDICTION TO OIL, FOREIGN SOURCES IN PARTICULAR, AND WANT TO SEE AMERICA TAKE CONCRETE STEPS TO BREAK THAT ADDICTION. AMERICANS DON'T WANT PIE IN THE SKY SOLUTIONS, THEY WANT CONCRETE ACTION. THIS IS WHERE AMERICAN ETHANOL PRODUCTION EXCELS.

## More Ethanol, Less Oil

It is simple enough to understand: With ethanol representing ten percent of the nation's motor fuel supply, less petroleum must be refined to meet America's fuel needs. Unfortunately, many do not fully appreciate the impact of domestic ethanol production.

With 13.9 billion gallons of domestic ethanol production, America required 485 million fewer barrels of imported oil. For perspective, that is a total greater than all the oil we import from Saudi Arabia. More importantly, ethanol is helping to permanently reduce America's reliance on foreign oil. According to the Energy Information Administration (EIA), America's net foreign petroleum dependence peaked in 2005 at just over 60% - the same year the federal renewable fuels standard was enacted. In the seven years since, the increased use of domestic, renewable fuels has been a major force in reducing our net foreign petroleum dependence to under 50%.

Perhaps even more interesting is the fact that ethanol now represents 25% of all the fuel for gasoline engines that is refined and produced from domestic sources. This not only frees up American oil supplies for use in other markets, it also helps to relieve some pressure on the need to dangerously exploit every possible source of petroleum under American soil.

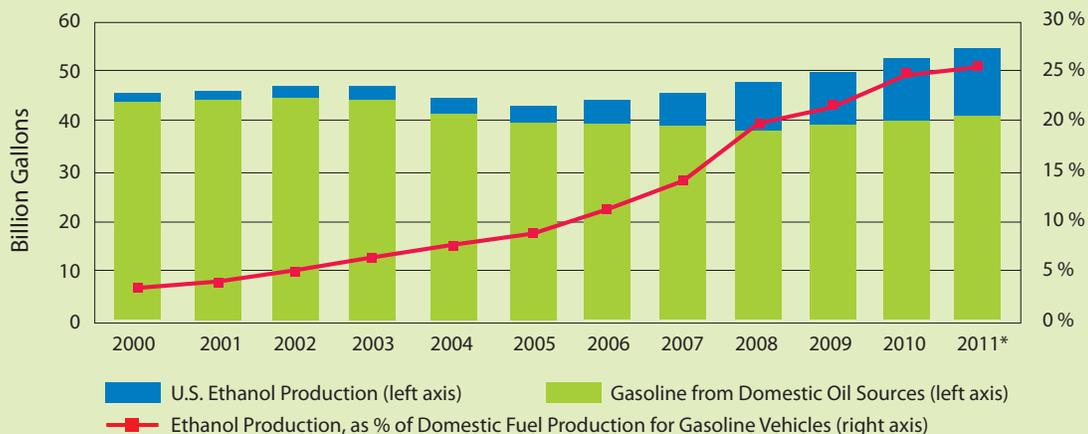
As ethanol production innovates and evolves, greater supplies of increasingly sustainable renewable fuels will be available to displace hard to come by sources of petroleum with dangerous and not understood consequences.

## It's More than Energy Security

America's addiction to foreign oil exposes very real dangers for our economy and our environment. Our continued reliance on hostile regions of the world for our energy also presents very real threats to our nation's security.

Military leaders from all branches of the armed forces and all walks of life have recognized this fact. In a recent announcement on the importance of biofuels to U.S. military operations, Secretary of the Navy Ray Mabus said, "There are great strategic reasons for moving away from fossil fuels. It's costly. Every time the cost of a barrel of oil goes up a dollar, it costs the United States Navy \$31 million in extra fuel costs. But it's costly in more ways than just money. For every 50 convoys of gasoline we bring in, we lose a Marine. We lose a Marine, killed or wounded. That is too high a price to pay for fuel!"

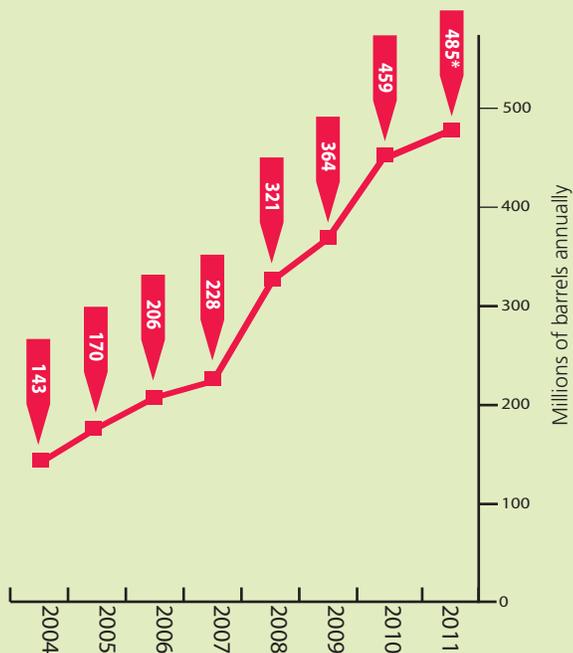
FUEL FROM DOMESTIC SOURCES FOR USE IN GASOLINE VEHICLES



Source: EIA and RFA

\*Estimated

## HISTORIC OIL IMPORT DISPLACEMENT BY ETHANOL



Source: Cardno ENTRIX

\*Estimated

“ [The current energy policy] is to buy from a cartel who drives the price and go to war every few years to maintain that privilege. It is outrageous. The good news is that there is an alternative. The good old fashion American idea of introducing competition into the fuel market. ”

—Robert McFarlane, National Security Advisor under President Ronald Reagan

“ There are great strategic reasons for moving away from fossil fuels. It’s costly. Every time the cost of a barrel of oil goes up a dollar, it costs the United States Navy \$31 million in extra fuel costs. But it’s costly in more ways than just money. For every 50 convoys of gasoline we bring in, we lose a Marine. We lose a Marine, killed or wounded. That is too high a price to pay for fuel. ”

—Ray Mabus, Secretary of the Navy



# Accelerating Market Evolution

LONG GONE ARE THE DAYS OF “GASOHOL” AND THE MARGINAL ROLE ETHANOL ONCE PLAYED IN AMERICA’S MOTOR FUEL MARKET. TODAY, ETHANOL IS TEN PERCENT OF THE NATION’S GASOLINE SUPPLY AND GROWING. REALIZING THE FULL POTENTIAL OF DOMESTIC ETHANOL PRODUCTION REQUIRES OPENING UP NEW MARKETS FOR ETHANOL THROUGH HIGHER ETHANOL BLENDS AND MODERNIZED FUELING INFRASTRUCTURE WITH BLENDER PUMPS. THE MARKET MUST EVOLVE AND THE RFA IS HELPING LEAD THE WAY.

## Fuel Market Snapshot

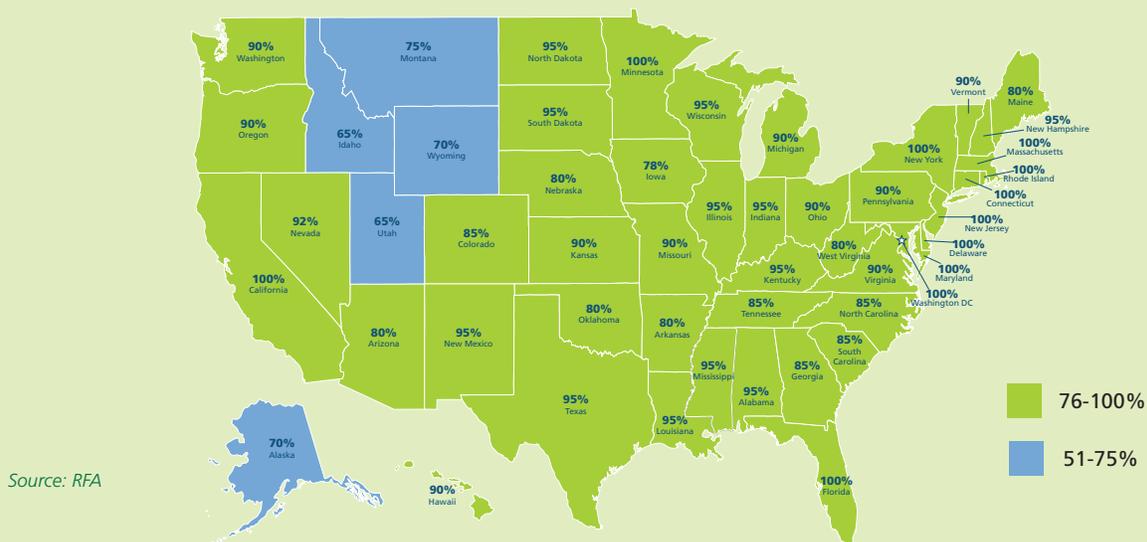
America consumes approximately 135-140 billion gallons of gasoline a year. More than 95% of those gallons were blended with ethanol, predominantly at the E10 (ten percent ethanol) level. RFA’s efforts to update state fuel regulations helped create ethanol’s irreplaceable position in the fuel market.

The saturation of the E10 marketplace has led to the need for new domestic market opportunities. A new fuel, E15 (15 percent ethanol), will be coming to pumps all across America in the months and years ahead. As it was with E10, achieving significant market penetration with E15 will take time and effort at both the federal and state level, but it must be done. A nationwide E15 market would represent nearly 20 billion gallons of annual ethanol demand.

While efforts to successfully introduce E15 to consumers are ongoing, the industry remains committed to expanding the use of all ethanol blends. Through joint industry efforts like the Blend Your Own (BYO) Ethanol campaign by RFA and the American Coalition for Ethanol, fuel marketers and retailers are being provided the necessary information to gain comfort with and ultimately install blender pumps that can dispense a wide range of ethanol blends – E10 to E30 to E85.

Simultaneously, more vehicles capable of utilizing these mid- and higher level ethanol blends are needed. Flex fuel vehicles, or FFVs, represent more than 9 million vehicles out of the national vehicle fleet of some 240 million automobiles. The Big Three American automakers – General Motors, Ford, and Chrysler – have pledged to make half of all their new vehicles in 2012 as FFVs. Based upon RFA analysis, they will meet these targets. This production will put more than one million new FFVs into the market.

## E10 MARKET ESTIMATION, 2011



## THE INDUSTRY REMAINS COMMITTED TO EXPANDING THE USE OF ALL ETHANOL BLENDS.

### The Ethanol Market of the Future

In order to meet our national goals of domestic renewable fuel production and energy security, investments in automotive technology and refueling infrastructure must be made. Such investments and policies that promote those investments would include:

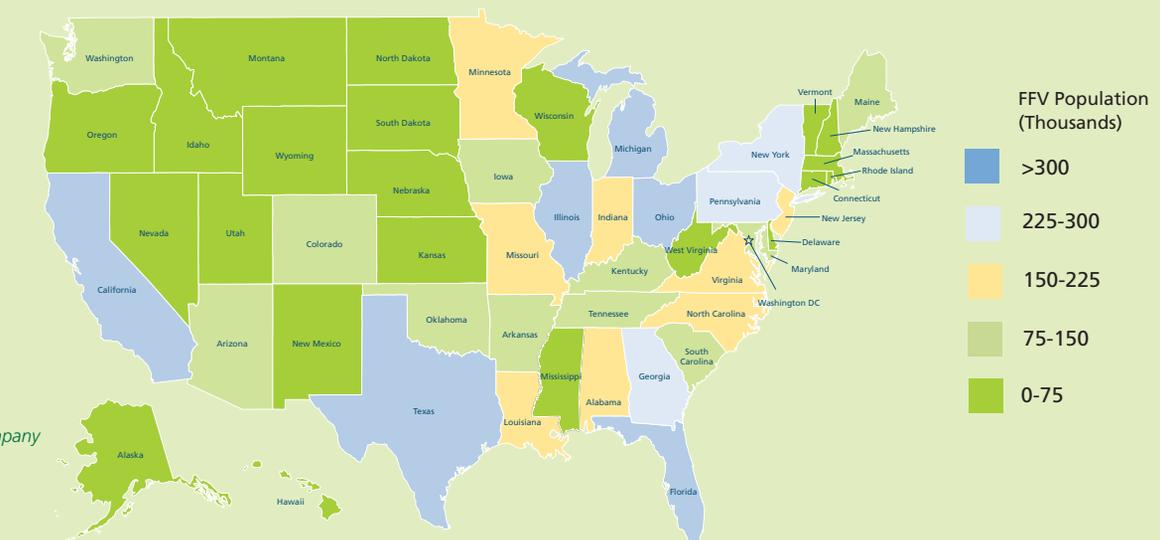
**Successful introduction of E15:** Seamlessly integrating E15 into the fuel choices of Americans is critical to the success of the Renewable Fuel Standard (RFS) and the domestic ethanol industry. The RFA is leading efforts to educate stakeholders, allay consumer concerns, and update regulatory structures to allow E15 space at the pump.

**Evolution of ethanol blends:** Consumers deserve a choice at the pump. Providing them with a range of ethanol blends gives them the power to choose the ethanol level that works best for them.

Current gas pump technology locks Americans into a predetermined choice at the pump. New technologies, like ethanol blender pumps, would allow both retailers and consumers to tailor their refueling options to include the ethanol level best suited to their needs. As America's gas pumps are replaced, they should be replaced with blender pump technology. More on this technology and how it works can be found at [www.BYOEthanol.com](http://www.BYOEthanol.com).

**Innovative Auto Engineering:** Flex fuel vehicles are the surest, most cost-effective way to provide consumers the engine technology they need to utilize higher level blends. At least half of all vehicles sold, not just by American automakers, should be FFVs. Moreover, as technologies improve, ethanol direct injection engines and other breakthroughs will properly capitalize on the performance advantages of ethanol, namely ethanol's high octane rating.

### FFV MARKET CONCENTRATION



# U.S. Fuel Ethanol Industry Biorefineries and Capacity

Company	Location	Feedstock	Nameplate Capacity (mgy)	Operating Production (mgy)	Under Construction/Expansion Capacity (mgy)
Abengoa Bioenergy Corp. (Total)			323	323	
	Colwich, KS	corn/milo			
	Hugoton, KS	crop residue and cellulosic energy crops			25
	Mt. Vernon, IN	corn			
	Madison, IL	corn			
	Ravenna, NE	corn			
	York, NE	corn			
Portales, NM	corn				
Absolute Energy, LLC*	St. Ansgar, IA	corn	115	115	
ACE Ethanol, LLC	Stanley, WI	corn	41	41	
Adkins Energy, LLC*	Lena, IL	corn	45	45	
Advanced BioEnergy, LLC (Total)			182	182	
	Fairmont, NE	corn			
	Aberdeen, SD	corn			
	Huron, SD	corn			
Aemetis	Keyes, CA	corn	55	55	
AGP*	Hastings, NE	corn	52	52	
Al-Corn Clean Fuel*	Claremont, MN	corn	45	45	
Alchem Ltd. LLP	Grafton, ND	corn	10	0	
AltraBiofuels Coshocton Ethanol, LLC	Coshocton, OH	corn	60	0	
AltraBiofuels Phoenix Bio Industries, LLC	Goshen, CA	corn	31.5	0	
Amaizing Energy, LLC*	Denison, IA	corn	55	55	
Archer Daniels Midland (Total)			1,750	1,750	
	Cedar Rapids, IA	corn			
	Clinton, IA	corn			
	Decatur, IL	corn			
	Peoria, IL	corn			
	Marshall, MN	corn			
	Wallhalla, ND	corn/barley			
	Columbus, NE	corn			
Arkalon Energy, LLC	Liberal, KS		110	110	
Aventine Renewable Energy, LLC			464	354	
	Pekin, IL	corn			
	Canton, IL	corn			
	Aurora East, NE	corn			
	Aurora West, NE	corn			
	Mt. Vernon, IN	corn			
Badger State Ethanol, LLC*	Monroe, WI	corn	50	50	
Big River Resources Boyceville, LLC	Boyceville, WI	corn	40	40	
Big River Resources Galva, LLC	Galva, IL	corn	100	100	
Big River Resources West Burlington, LLC*	West Burlington, IA	corn	100	100	
Big River United Energy	Dyersville, IA	corn	110	110	
BioFuel Energy - Buffalo Lake Energy, LLC	Fairmont, MN	corn	115	115	
BioFuel Energy - Pioneer Trail Energy, LLC	Wood River, NE	corn	115	115	
Bionol Clearfield	Clearfield, PA	corn	110	0	
Blue Flint Ethanol	Underwood, ND	corn	50	50	
Bonanza Energy, LLC	Garden City, KS	corn/milo	55	55	
BP Biofuels North America	Jennings, LA	sugar cane bagasse	1.5	1.5	
Bridgeport Ethanol	Bridgeport, NE	corn	54	54	
Bunge-Ergon Vicksburg	Vicksburg, MS	corn	54	54	
Bushmills Ethanol, Inc.*	Atwater, MN	corn	50	50	

Calgren Renewable Fuels, LLC	Pixley, CA	corn	60	60	
Carbon Green Bioenergy	Lake Odessa, MI	corn	50	50	
Cardinal Ethanol	Union City, IN	corn	100	100	
Cargill, Inc.	Ft. Dodge, IA	corn			115
Cargill, Inc.	Eddyville, IA	corn	35	35	
Cargill, Inc.	Blair, NE	corn	195	195	
Columbia River BioRefinery	Clatskanie, OR	corn	108	0	
Center Ethanol Company, LLC	Sauget, IL	corn	54	54	
Central Indiana Ethanol, LLC	Marion, IN	corn	50	50	
Central MN Ethanol Coop	Little Falls, MN	corn	21.5	21.5	
Chief Ethanol	Hastings, NE	corn	62	62	
Chippewa Valley Ethanol Co.*	Benson, MN	corn	45	45	
Clean Burn Fuels	Raeford, NC	corn	60		
Commonwealth Agri-Energy, LLC*	Hopkinsville, KY	corn	33	33	
Corn Plus, LLP*	Winnebago, MN	corn	49	49	
Corn, LP	Goldfield, IA	corn	60	60	
Cornhusker Energy Lexington, LLC	Lexington, NE	corn	40	40	
Dakota Ethanol, LLC*	Wentworth, SD	corn	50	50	
DENCOIL	Morris, MN	corn	24	24	
Didion Ethanol	Cambria, WI	corn	40	40	
E Energy Adams, LLC	Adams, NE	corn	50	50	
East Kansas Agri-Energy, LLC*	Garnett, KS	corn	35	35	
ESE Alcohol Inc.	Leoti, KS	seed corn	1.5	1.5	
Flint Hills Resources LP	Menlo, IA	corn	110	110	
Flint Hills Resources LP	Shell Rock, IA	corn	110	110	
Flint Hills Resources LP	Fairbank, IA	corn	115	115	
Flint Hills Resources LP	Iowa Falls, IA	corn	105	105	
Front Range Energy, LLC	Windsor, CO	corn	40	40	
Gateway Ethanol	Pratt, KS	corn	55	0	
Gevo	Luverne, MN	corn	21	21	
Glacial Lakes Energy, LLC - Mina	Mina, SD	corn	100	100	
Glacial Lakes Energy, LLC - Watertown*	Watertown, SD	corn	100	100	
Golden Cheese Company of California*	Corona, CA	cheese whey	5	0	
Golden Grain Energy, LLC*	Mason City, IA	corn	115	115	
Grain Processing Corp.	Muscatine, IA	corn	20	20	
Grain Processing Corp.	Washington, IN	corn	20	20	
Granite Falls Energy, LLC*	Granite Falls, MN	corn	52	52	
Green Plains Renewable Energy	Fergus Falls, MN	corn	60	60	
Green Plains Renewable Energy	Lakota, IA	corn	100	100	
Green Plains Renewable Energy	Riga, MI	corn	60	60	
Green Plains Renewable Energy	Shenandoah, IA	corn	55	55	
Green Plains Renewable Energy	Obion, TN	corn	120	120	
Green Plains Renewable Energy	Bluffton, IN	corn	120	120	
Green Plains Renewable Energy	Superior, IA	corn	60	60	
Green Plains Renewable Energy	Central City, NE	corn	100	100	
Green Plains Renewable Energy	Ord, NE	corn	55	55	
GTL Resources	Rochelle, IL	corn	100	100	
Guardian Energy	Janesville, MN	corn	110	110	
Guardian Lima, LLC	Lima, OH	corn	54	54	
Hankinson Renewable Energy, LLC	Hankinson, ND	corn	110	110	
Heartland Corn Products*	Winthrop, MN	corn	100	100	
Heron Lake BioEnergy, LLC	Heron Lake, MN	corn	50	50	
Highwater Ethanol, LLC	Lamberton, MN	corn	55	55	
Homeland Energy	New Hampton, IA	corn	100	100	
Husker Ag, LLC*	Plainview, NE	corn	75	75	
Idaho Ethanol Processing, LLC	Caldwell, ID	potato waste	4	4	

Illinois Corn Processing	Pekin, IL	corn	90	90
Iroquois Bio-Energy Company, LLC	Rensselaer, IN	corn	40	40
KAAPA Ethanol, LLC*	Minden, NE	corn	59	59
Kansas Ethanol, LLC	Lyons, KS	corn	55	55
KL Process Design Group	Upton, WY	wood waste	1.5	1.5
Land O' Lakes*	Melrose, MN	cheese whey	2.6	2.6
Levelland/Hockley County Ethanol, LLC	Levelland, TX	corn	40	0
Lifeline Foods, LLC	Joseph, MO	corn	50	50
Lincolnland Agri-Energy, LLC*	Palestine, IL	corn	48	48
Lincolnway Energy, LLC*	Nevada, IA	corn	55	55
Little Sioux Corn Processors, LLC*	Marcus, IA	corn	92	92
Louis Dreyfus Commodities	Grand Junction, IA	corn	100	100
Louis Dreyfus Commodities	Norfolk, NE	corn	45	45
Marquis Energy, LLC	Hennepin, IL	corn	100	100
Marquis Energy - Wisconsin, LLC	Necedah, WI	corn	50	50
Marysville Ethanol, LLC	Marysville, MI	corn	50	50
Merrick & Company	Aurora, CO	waste beer	3	3
Mid America Agri Products/Wheatland	Madrid, NE	corn	44	44
Mid-Missouri Energy, Inc.*	Malta Bend, MO	corn	50	50
Midwest Renewable Energy, LLC	Sutherland, NE	corn	25	25
Minnesota Energy*	Buffalo Lake, MN	corn	18	0
Murphy Oil	Hereford, TX	corn/milo	105	105
Nebraska Corn Processing, LLC	Cambridge, NE	corn	45	45
NEDAK Ethanol	Atkinson, NE	corn	44	44
Nesika Energy, LLC	Scandia, KS	corn	10	10
New Energy Corp.	South Bend, IN	corn	102	102
North Country Ethanol, LLC*	Rosholt, SD	corn	20	20
NuGen Energy	Marion, SD	corn	110	110
One Earth Energy	Gibson City, IL	corn	100	100
Osage Bio-Energy	Hopewell, VA	corn/barley	65	0
Pacific Ethanol	Madera, CA	corn	40	0
Pacific Ethanol	Stockton, CA	corn	60	60
Pacific Ethanol	Burley, ID	corn	50	50
Pacific Ethanol	Boardman, OR	corn	40	40
Parallel Products	Rancho Cucamonga, CA	beverage waste		
Parallel Products	Louisville, KY	beverage waste	5.4	5.4
Patriot Renewable Fuels, LLC	Annawan, IL	corn	100	100
Penford Products	Cedar Rapids, IA	corn	45	45
Pinal Energy, LLC	Maricopa, AZ	corn	55	55
Pine Lake Corn Processors, LLC	Steamboat Rock, IA	corn	31	31
Platinum Ethanol, LLC*	Arthur, IA	corn	110	110
Plymouth Ethanol, LLC*	Merrill, IA	corn	50	50
POET Biorefining - Alexandria	Alexandria, IN	corn	68	68
POET Biorefining - Ashton	Ashton, IA	corn	56	56
POET Biorefining - Big Stone	Big Stone City, SD	corn	79	79
POET Biorefining - Bingham Lake	Bingham Lake, MN	corn	35	35
POET Biorefining - Caro	Caro, MI	corn	53	53
POET Biorefining - Chancellor	Chancellor, SD	corn	110	110
POET Biorefining - Cloverdale	Cloverdale, IN	corn	92	92
POET Biorefining - Coon Rapids	Coon Rapids, IA	corn	54	54
POET Biorefining - Corning	Corning, IA	corn	65	65
POET Biorefining - Emmetsburg	Emmetsburg, IA	corn	55	55
POET Biorefining - Fostoria	Fostoria, OH	corn	68	68
POET Biorefining - Glenville	Albert Lea, MN	corn	42	42
POET Biorefining - Gowrie	Gowrie, IA	corn	69	69
POET Biorefining - Hanlontown	Hanlontown, IA	corn	56	56

POET Biorefining - Hudson	Hudson, SD	corn	56	56
POET Biorefining - Jewell	Jewell, IA	corn	69	69
POET Biorefining - Laddonia	Laddonia, MO	corn	50	50
POET Biorefining - Lake Crystal	Lake Crystal, MN	corn	56	56
POET Biorefining - Leipsic	Leipsic, OH	corn	68	68
POET Biorefining - Macon	Macon, MO	corn	46	46
POET Biorefining - Marion	Marion, OH	corn	68	68
POET Biorefining - Mitchell	Mitchell, SD	corn	68	68
POET Biorefining - North Manchester	North Manchester, IN	corn	68	68
POET Biorefining - Portland	Portland, IN	corn	68	68
POET Biorefining - Preston	Preston, MN	corn	46	46
POET Biorefining - Scotland	Scotland, SD	corn	11	11
POET Biorefining - Groton	Groton, SD	corn	53	53
Prairie Horizon Agri-Energy, LLC	Phillipsburg, KS	corn	40	40
Quad-County Corn Processors*	Galva, IA	corn	30	30
Red Trail Energy, LLC	Richardton, ND	corn	50	50
Redfield Energy, LLC*	Redfield, SD	corn	50	50
Reeve Agri-Energy	Garden City, KS	corn/milo	12	12
Renova Energy	Torrington, WY	corn	10	10
Show Me Ethanol	Carrollton, MO	corn	55	55
Siouxland Energy & Livestock Coop*	Sioux Center, IA	corn	60	60
Siouxland Ethanol, LLC	Jackson, NE	corn	50	50
Southwest Georgia Ethanol, LLC	Camilla, GA	corn	100	100
Southwest Iowa Renewable Energy, LLC*	Council Bluffs, IA	corn	110	110
Spectrum Business Ventures, Inc.	Mead, NE	corn	25	0
Sterling Ethanol, LLC	Sterling, CO	corn	42	42
Summit Natural Energy	Cornelius, OR	waste sugars/starches	1	1
Sunoco	Volney, NY	corn	114	114
Tate & Lyle	Loudon, TN	corn	105	105
Tharaldson Ethanol	Casselton, ND	corn/milo	150	150
The Andersons Albion Ethanol, LLC	Albion, MI	corn	55	55
The Andersons Clymers Ethanol, LLC	Clymers, IN	corn	110	110
The Andersons Marathon Ethanol, LLC	Greenville, OH	corn	110	110
Trenton Agri Products, LLC	Trenton, NE	corn	40	40
United Ethanol, LLC	Milton, WI	corn	52	52
United WI Grain Producers, LLC*	Friesland, WI	corn	53	53
Utica Energy, LLC	Oshkosh, WI	corn	48	48
Valero Renewable Fuels	Albert City, IA	corn	110	110
Valero Renewable Fuels	Fort Dodge, IA	corn	110	110
Valero Renewable Fuels	Albion, NE	corn	110	110
Valero Renewable Fuels	Aurora, SD	corn	120	120
Valero Renewable Fuels	Charles City, IA	corn	110	110
Valero Renewable Fuels	Welcome, MN	corn	110	110
Valero Renewable Fuels	Hartley, IA	corn	110	110
Valero Renewable Fuels	North Linden, IN	corn	110	110
Valero Renewable Fuels	Bloomingsburg, OH	corn	110	110
Valero Renewable Fuels	Jefferson Junction, WI	corn	130	130
Western New York Energy, LLC	Shelby, NY	corn	50	50
Western Plains Energy, LLC*	Campus, KS	corn	45	45
White Energy	Russell, KS	milo/wheat starch	48	48
White Energy	Hereford, TX	corn/milo	100	100
White Energy	Plainview, TX	corn	110	110
Wind Gap Farms	Baconton, GA	brewery waste	0.4	0.4
Yuma Ethanol	Yuma, CO	corn	40	40

U.S. CAPACITY TOTALS 14,906.9 14,114.4 140

\* locally owned

Updated: January 2012

# Creating a Market for E15 Blends

THE EFFECTIVE AND TIMELY INTRODUCTION OF E15 BLENDS IS CRITICAL TO THE FUTURE GROWTH AND SUCCESS OF AMERICA'S HOMETOWN ETHANOL INDUSTRY. ACHIEVING WIDESPREAD ACCEPTANCE AND AVAILABILITY OF E15 WILL TAKE TIME AND EFFORT. IT TOOK NEARLY 30 YEARS FOR E10 TO GAIN MARKET SATURATION. WHILE IT WILL NOT TAKE AS LONG FOR E15, THERE ARE CERTAIN STEPS AND PROCESSES THAT MUST BE COMPLETED BEFORE E15 IS A WIDELY AVAILABLE OPTION FOR CONSUMERS.

## E15 Timeline:

The path to E15 began in March 2009 with the submittal of a Clean Air Act (CAA) 211(f) waiver request to the U.S. Environmental Protection Agency (EPA). After the most robust testing of any fuel in history, EPA approved the use of E15 for cars, light-duty trucks, and SUVs built since model year (MY) 2001. This approval was essential, and officially began the process of registering E15 as a fuel – a process all fuels must complete.

The RFA is working with industry partners like Growth Energy to successfully register E15 as a fuel with EPA. Registration and the final approval of a misfueling mitigation plan devised by the RFA are the final federal steps in getting E15 to the market. Once completed, the focus will shift to the states where each state presents a different set of requirements in order to sell E15. Some states, like Iowa and Illinois, will be ready to move forward with E15 once federal requirements are met. Other states will take additional efforts. 



**FACT:** Total miles traveled in the testing of E15 would represent 12 round trips to the Moon. E15 has been the most exhaustively tested fuel ever approved by EPA.





## The Path to E15

Introducing E15 into the market is a process that is fairly clear and well understood, but it is not easy or expedient. It will require a consistent and long-term commitment.

## Hurdles to E15?

As if the process of introducing a new fuel were not complicated enough, pending lawsuits and threats of Congressional action to stall EPA's implementation of E15 continue to provide challenges above and beyond the known steps to introduce a new fuel.

The lawsuit filed by industries opposed to E15 will move forward in 2012 and the RFA will remain engaged in the fight, defending EPA's decision to approve E15. The RFA will also vigorously defend E15 on Capitol Hill against members of Congress seeking to slow, stall, or suffocate American renewable fuel production.

## E15 CHECKLIST

- ✓ **E15 Label** – The EPA has finalized the label to be used on all gasoline pumps dispensing E15 ethanol blends.
- ✓ **E15 Misfueling Mitigation Plan** – The RFA has submitted a Misfueling Mitigation plan to EPA. In order for any retailer to offer E15, they must comply with a misfueling mitigation strategy like the one submitted by RFA.
- ✓ **EPA Fuel Registration** – All new fuels must register with EPA, including the submission of health effects testing. The RFA has worked with industry partners to compile the information necessary and will be submitting to EPA in early 2012.
- ✓ **State Regulations** – As it was with E10 blends, the RFA is working with state regulators to properly adjust various fuel regulations to allow for the legal sale of E15 blends. Some states, like Iowa and Illinois, are ready to allow E15 sales once all federal requirements are met.
- ✓ **Point-of-Sale** – The RFA is working with retailers to address concerns over misfueling, E15 storage and other issues. Namely, the RFA is leading a group of stakeholders in developing information for retailers and others on the proper use of E15 fuel blends. This group consists of ethanol interests as well as fuel marketers, engine manufacturers, and state regulators.

# Washington's New Focus

THE DYSFUNCTIONALITY OF OUR GOVERNMENT IN WASHINGTON TODAY HAS BEEN WELL DOCUMENTED. IN A HYPER-PARTISAN ENVIRONMENT IN WHICH THE SMALLEST OF LEGISLATIVE OR REGULATORY TASKS TAKES THE GOVERNMENT TO THE BRINK OF DISASTER, AMERICA'S ETHANOL INDUSTRY IS ENTERING A NEW ERA. AS THE INDUSTRY EVOLVES, SO TOO MUST THE POLICIES AND THE FOCUS IN WASHINGTON THAT HELP TO LEVEL THE PLAYING FIELD WITH MORE ESTABLISHED ENERGY RESOURCES LIKE OIL AND NATURAL GAS.

## Ethanol in the post-VEETC world

The tax incentive for ethanol blending, known as the Volumetric Ethanol Excise Tax Credit or VEETC, expired on January 1, 2012. For its part, the ethanol industry voluntarily let the expiration happen as a maturing and evolving industry no longer needed its market demand pull.

To be clear, VEETC was a highly successful incentive by any measure. It served as the underpinning of a new industry that sought to challenge the monopoly oil has on American transportation fuels. It helped create new markets for American farmers and provided them with new income opportunities that meant fewer government payments. The tax incentive has also helped to create the 401,600 jobs associated with domestic ethanol production today and reduced America's import of oil by 485 million barrels per year.

Increasingly, American taxpayers continue to subsidize oil companies to the tune of at least \$4 billion per year despite the maturity and market domination those companies enjoy. Congress needs to level the playing field for energy technologies and eliminating these wasteful oil subsidies is the logical first step.

Additionally, Congress must continue to pursue progressive tax policies that will accelerate the commercialization of new advanced and cellulosic ethanol technologies. Policies like the Production Tax Credit for cellulosic ethanol and the Accelerated Depreciation for Cellulosic Biorefineries should be extended at least through 2015 to provide stability in the rapidly changing ethanol industry. Policies like the accelerated depreciation for capital investments are ubiquitous throughout the energy sector, especially in the oil industry, and new biofuel technologies should not be discriminated against by allowing this important incentive to expire at year's end.

**FACT:** According to the Environmental Law Institute, traditional fossil fuels received more than \$72 billion in subsidies from American taxpayers between 2002 and 2008. By comparison, renewable technologies received just \$29 billion.

(Source: "Energy Subsidies Black, Not Green," Environmental Law Institute, 2009.)

## RENEWABLE FUEL STANDARD SCHEDULE (BILLION GALLONS PER YEAR)

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Renewable Biofuel	9.0	10.5	12.0	12.6	13.2	13.8	14.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Advanced Biofuel		0.6	0.95	1.35	2.0	2.75	3.75	5.5	7.25	9.0	11.0	13.0	15.0	18.0	21.0
Cellulosic Biofuel			0.1	0.25	0.5	1.0	1.75	3.0	4.25	5.5	7.0	8.5	10.5	13.5	16.0
Biomass-based Diesel		0.5	0.65	0.8	1.0										
Undifferentiated Advanced Biofuel		0.1	0.2	0.3	0.5	1.75	2.0	2.5	3.0	3.5	4.0	4.5	4.5	4.5	5.0
<b>Total RFS</b>	<b>9.0</b>	<b>11.1</b>	<b>12.95</b>	<b>13.95</b>	<b>15.2</b>	<b>16.55</b>	<b>18.15</b>	<b>20.5</b>	<b>22.25</b>	<b>24.0</b>	<b>26.0</b>	<b>28.0</b>	<b>30.0</b>	<b>33.0</b>	<b>36.0</b>

## A Binding RFS

The federal Renewable Fuel Standard (RFS) serves as the catalyst for the continued growth and innovation within the domestic ethanol industry. As such, it remains the key pillar of federal policy to create market share for renewable alternatives to oil in the nation's motor fuel market.

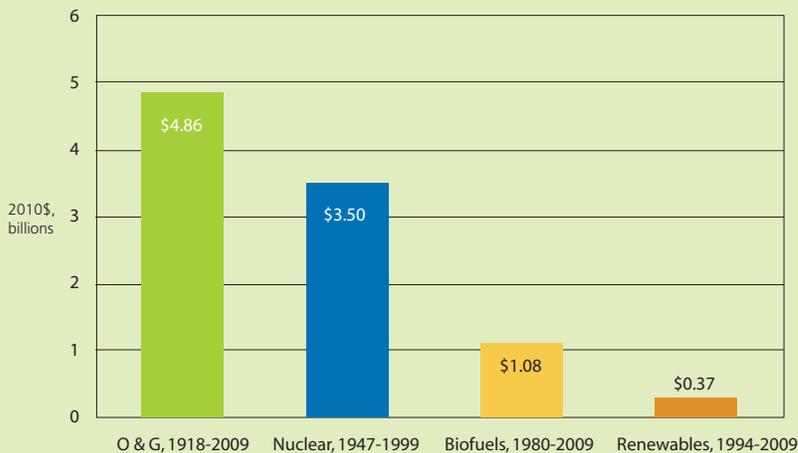
With the expiration of VEETC, critics of ethanol have focused their vitriol on the RFS and efforts to rewrite, reduce, and repeal abound in Congress. Such proposals cannot be allowed to succeed. The RFS provides assurance to investors, farmers, and the fuel market that renewable fuels will be part of the mix. For new technologies and ethanol companies, the RFS is a critical policy to attract investment and commercialize new ethanol production processes.

## Regulation and the Market

The need for increased market access has intensified the focus of the American ethanol industry on federal and state regulatory agencies that have direct control over how much ethanol can and will be used. Crucial regulatory and market expansion issues like the implementation of E15 ethanol blends at the state and federal level must be addressed correctly to ensure the smooth adoption of this new fuel option.

Other regulatory issues, such as greenhouse gas reduction regulations, transportation concerns, and employee and community safety priorities must be closely monitored. Regulations of these types are important but, if implemented incorrectly, can be unnecessarily burdensome and economically suffocating for ethanol producers across the nation.

## HISTORICAL AVERAGE OF ANNUAL ENERGY SUBSIDIES: A CENTURY OF FEDERAL SUPPORT



Source: "What would Jefferson do?", DBL Investors, September 2011

## Eye on the States

Legislative and regulatory action in state capitals across the nation relating to ethanol have picked up in both intensity and importance. From efforts to ban ethanol in New Hampshire to labeling concerns in Nebraska to a repeal threat of the Florida Renewable Fuel Standard, anti-ethanol interests are motivating their state affiliates in an effort to dismantle domestic ethanol production from the ground up. The RFA has and will continue to work with our members and the industry to address anti-ethanol state initiatives and look for opportunities to expand ethanol markets in all 50 states.

# Innovation at Work

**INNOVATIVE** IS THE WORD THAT BEST DESCRIBES **AMERICA'S** ETHANOL INDUSTRY TODAY. **WHETHER IT IS NEW EFFICIENCIES AND PRODUCTS BEING DEVELOPED AT EXISTING ETHANOL BIOREFINERIES OR THE EVOLUTIONARY TECHNOLOGIES THAT WILL TURN AGRICULTURAL RESIDUES, GRASSES, GARBAGE, AND OTHER FEEDSTOCKS INTO ETHANOL, DOMESTIC ETHANOL PRODUCTION IS ON THE MOVE TO HELP ANSWER 21ST CENTURY CHALLENGES WITH 21ST CENTURY AMERICAN INGENUITY.**

## Building the Biorefinery Model

American ethanol producers are about far more than just fuel and feed today. Technologies are being developed and deployed that not only improve the efficiency of ethanol and distillers grains production, but are producing new bio-based products and chemicals that will further displace America's thirst for oil.

The largest example of these new technologies is corn oil extraction. An estimated 40-50 percent of ethanol dry mills across the country are extracting corn oil today. Corn oil can be used in various applications including biodiesel production, feed markets, and as the building blocks for a variety of industrial applications. The RFA estimates that U.S. ethanol producers supplied 175 million gallons of corn oil in 2011.

Beyond corn oil, new technologies are also creating a wide range of bio-based chemicals and other products that will displace crude oil and transform the ethanol industry into a larger player in the fuel, feed, food, and chemical markets.

## New technologies, new opportunities

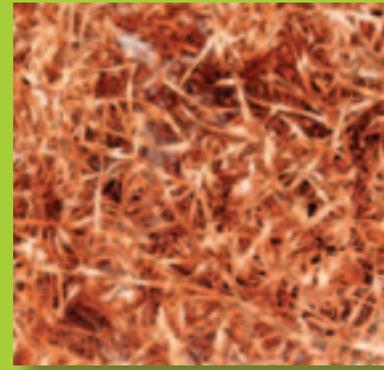
Existing ethanol production is building a strong foundation from which new technologies and new fuel will be launched. Advanced and cellulosic ethanol companies are making the transition from the laboratory to the market with technologies that will greatly expand the basket of feedstocks from which ethanol is made. These technologies are being deployed as both enhancements to existing ethanol production (so-called bolt-on facilities) and as stand alone ethanol biorefineries.

Right now, more than two dozen companies are aggressively deploying demonstration or commercial scale projects all across the nation. Abengoa Bioenergy, one of the nation's largest producers of ethanol from grain, is currently constructing a joint grain and switchgrass ethanol biorefinery in Hutchinson, Kansas, that will produce 25 million gallons a year once completed. Other companies such as Coskata, Mascoma, and Inbicon are also preparing commercial and demonstration biorefineries that will accelerate the evolution of domestic ethanol production.



## What is advanced and cellulosic ethanol?

Cellulose refers to the material comprising the cell walls of any green plant and is the most common organic compound found on Earth. Cellulosic ethanol is ethanol produced by turning the sugars in cellulose into alcohol fuel. Advanced ethanol, by comparison, is sourced from non-cellulosic feedstocks including sugars and starches other than corn starch. All sources for ethanol will be required to provide the nation with the kind of energy choices we need.



*EXISTING ETHANOL PRODUCTION IS BUILDING A STRONG FOUNDATION FROM WHICH NEW TECHNOLOGIES AND NEW FUEL WILL BE LAUNCHED.*



# American Ethanol in the Global Market

**AFTER PUTTING** THEIR TOE IN THE WATER IN 2010, U.S. ETHANOL PRODUCERS ENTERED THE WORLD MARKET IN A BIG WAY IN 2011. WITH RECORD PRODUCTION, USE, AND NOW EXPORTS, AMERICA'S ETHANOL INDUSTRY IS THE LARGEST AND MOST EFFICIENT IN THE WORLD. AS NEW OPPORTUNITIES FOR DOMESTIC PRODUCERS OPEN OVERSEAS, NEW CHALLENGES AND GROWING PAINS ASSOCIATED WITH AN INCREASED GLOBAL FOOTPRINT WILL ALSO EMERGE.

## Global Trade Strengthens

The emergence of American ethanol on the world market stems from the cost-efficient nature of U.S. ethanol and the rising world sugar price. Forecasts for 2012 and beyond strongly suggest this dynamic will continue.

In 2011, the U.S. exported a record of more than 1 billion gallons of denatured and undenatured ethanol. These are gallons not blended with gasoline, and thus not eligible for any federal tax incentive. These exports represent an increase of some 600 million gallons over 2010, the previous record year.

Top destinations for U.S. ethanol were Brazil, Europe, and Canada with American product also finding its way to the Middle East and Asia.

In addition to ethanol, the U.S. also exported nearly 8 million metric tons of distillers grains to growing markets in North America, Asia and Europe.

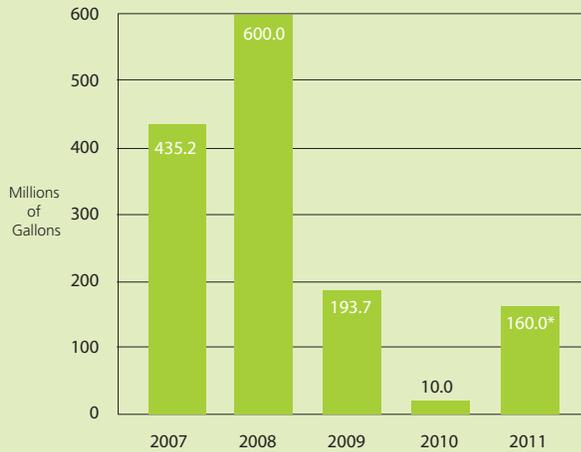
An interesting shift in ethanol trade is also occurring. Deemed "The Ethanol Shuffle," carbon footprint calculations in both the federal Renewable Fuel Standard and the California Low Carbon Fuel Standard (LCFS) encourage the import of Brazilian ethanol even as the Brazilian industry falls short in meeting its own domestic demand. As a result, America has been importing ethanol from Brazil while simultaneously exporting ethanol to Brazil to backfill its market. All the while, a doubling of carbon emissions from transporting these ethanol shipments will occur, partly undermining the carbon reduction goals of both policies.

## Issues, Opportunities Emerge on the Global Stage

The growing presence of U.S. ethanol in the global fuel supply is expectedly creating new challenges and opportunities. As the low-cost producer of ethanol, and with excess supply, American ethanol producers have emerged as the world's most reliable and cost-effective source of ethanol. This is creating both friction and opportunity in other nations.



## HISTORIC U.S. ETHANOL IMPORTS



Source: International Trade Commission, RFA

## HISTORIC U.S. ETHANOL EXPORTS (DENATURED AND UNDENATURED, NON-BEVERAGE)



\*Estimated

## GLOBAL ETHANOL PRODUCTION (MILLIONS OF GALLONS)\*

Continent	Africa	Asia	Australia	Europe	North and Central America	South America
2011	38.31	889.7	87.2	1,167.64	14,401.34	5,771.9

Source: F.O. Lichts

Nation	Brazil	Canada	China	European Union
2011	5,573.24	462.3	554.76	1,199.31

\*Estimated

## European Union Trade Complaint

The most pressing trade issue for U.S. ethanol producers and marketers is the antidumping and countervailing duties investigations initiated by the European Commission (EC). The basis of the claim is that American ethanol exporters were shipping ethanol and ethanol blends to Europe after first taking advantage of the now expired tax credit for ethanol blending for retail. The result, according to European complaints, was an undercutting of European ethanol prices and "harm" to European ethanol producers. This is an important issue for U.S. ethanol producers as export markets have emerged as welcomed opportunities for domestically produced ethanol.

The RFA is confident that, as the investigations proceed and the true facts are revealed about U.S. ethanol trading practices and the workings of domestic tax incentives, the industry will succeed in pushing back on the claims of illegal dumping and subsidies concerning U.S. ethanol exports. And, the RFA is leading efforts on behalf of the U.S. ethanol industry to cooperate with the investigation, and present the U.S. ethanol industry position before the Commission in Brussels.



## Renewable Fuels Policies Around the Globe

Renewable energy initiatives in other nations are seeking to reduce the use of petroleum, clean the environment, and create economic opportunity. Many of these, such as Canada's Renewable Fuel Standard and the European Union's Renewable Energy Directive, are similar to the U.S. Renewable Fuel Standard in requiring the use of cleaner renewable alternatives to petroleum-based fuels. These policies, including air pollution concerns in large cities in the Middle East, are creating opportunities for U.S. ethanol producers as the largest supplier of ethanol today.

# Energetically Going Green-er

OVER THE PAST 30 YEARS, AND IN PARTICULAR IN THE PAST DECADE, ETHANOL PRODUCTION HAS QUIETLY BECOME INCREASINGLY EFFICIENT. FROM IMPROVEMENTS IN CORN PRODUCTION TO GREATER EFFICIENCIES AT ETHANOL BIOREFINERIES, AMERICA'S LEADING RENEWABLE FUEL IS PROVIDING MORE WITH LESS. THESE IMPROVEMENTS HAVE DRAMATICALLY REDUCED THE ENVIRONMENTAL IMPACTS OF PRODUCING ETHANOL.

## Tomorrow's Technologies Today

Ethanol producers are among the most likely to adopt new technologies that improve efficiencies, increase yields, and reduce carbon footprints. Today, roughly 90% of the nation's ethanol is produced using the dry mill process, with the remainder using wet mill technology. Also, slightly more than 90% of the energy needed to run the nation's 200+ ethanol biorefineries comes from natural gas—a plentiful domestic energy resource. Finally, nearly a quarter of these facilities are using Combined Heat and Power (CHP) technologies, also known as co-generation.

According to the latest research, the average dry mill ethanol plant in 2008 used 28% less thermal energy per gallon than it did just seven years earlier in 2001. Electricity demand per gallon of production fell 32% from 2001 to 2008 and water use fell by 47%. All the while, ethanol producers are increasing the amount of ethanol they can produce from the same bushel of corn. At 2.8 gallons per bushel, ethanol yields per bushel are up 5% since 2001.



## On the Farm

American farmers are the most productive and efficient the world has ever known. And, only America's farmers can match ethanol producers' willingness to rapidly put new technologies to work. American corn growers are producing twice as much grain today as they were in 1980 on virtually the same amount of land. In 1980, farmers averaged a yield of 91 bushels of corn per acre and produced a crop of 6.6 billion bushels. In 2009, just a generation later, farmers produced an average yield of 164.7 bushels per acre and harvested 13.1 billion bushels. This doubling of the American corn crop was achieved by planting just 3% more corn acres in 2009 than was planted in 1980. This dramatic increase in output has come without needing to increase the amount of fertilizer, pesticide, or water use per bushel of production. In fact, input use per unit of output has dropped considerably.

**FACT:** Ethanol use in 2011 reduced tailpipe CO<sub>2</sub>-equivalent emissions by 25.3 million metric tons. That's equal to the emissions of 4 million vehicles. (Source: GREET Model)



**FACT:** *Energetic Ethanol: The most current measurement of ethanol's energy balance shows a positive 1.7-2.3 score, meaning ethanol is providing twice the energy it took to produce.*

## Cleaner Air, Cleaner Environment

All of these improvements mean the total energy and environmental impacts of producing ethanol continue to decrease dramatically. Most recent studies have concluded that corn ethanol reduces GHG emissions by 30-50% compared to average gasoline. Even when hypothetical land use change emissions are included, today's average corn ethanol is 25% better than gasoline, according to the latest research from Argonne National Lab and Purdue University. In fact, the continued refinement of theories about ethanol's carbon intensity are showing fewer and fewer emissions from ethanol and greater GHG benefits compared to increasingly environmentally dangerous sources of oil, like Canadian tar sands.

Moreover, ethanol's chemical composition – the ethanol molecule is 35% oxygen – means it helps create a more complete, cleaner burn of fuel in vehicle engines. Increasing ethanol use in gasoline is directly leading to cleaner air and fewer toxic tailpipe emissions of dangerous chemicals like carbon monoxide and benzene.



## Getting More Out than What Goes In

Improving ethanol production efficiencies in concert with new farming technologies means that the energy benefits of ethanol continue to grow. In the most recent research, the U.S. Department of Agriculture determined ethanol's energy balance to be 1.7-2.3. That is to say, today's ethanol production yields nearly twice as much energy as it took to create the gallon.

The bottom line is fossil fuel producers are going farther and deeper—and using more energy and emitting more GHGs—to extract new sources of oil. These are the marginal sources of oil against which ethanol should be compared, since both unconventional oil and ethanol are the newest entrants into the fuel pool. While new sources of crude oil require more energy for extraction and refining and are increasingly carbon intensive, ethanol's energy and environmental track record continues to shine.



# An Ethanol Crystal Ball

**SPECULATING** ABOUT WHAT MAY YET BE TO COME IS NEVER AN EXACT SCIENCE. **WHEN IT COMES TO AMERICA'S ETHANOL INDUSTRY, HOWEVER, THERE IS A VERY CLEAR LIST OF CHALLENGES AND OPPORTUNITIES IN 2012 AND BEYOND.**

## Opening the Domestic Fuel Market to Ethanol

Expanding America's use of domestic renewable fuel like ethanol will again be the top priority for the industry in 2012. Realizing meaningful growth in the market will require the successful completion of a number of tasks, not all of which can be done in the year to come.

**E15 and Higher Ethanol Blends:** E15 provides the most immediate opportunity to grow the domestic ethanol market and achieve the goals of the RFS. Seeing widespread use and meaningful market share will take time. Simultaneously, efforts to introduce and expand the offers of other ethanol blends like E20, E30, and E85 will be a focus.

**Infrastructure Investments and Modernization:** Like much of American infrastructure, the nation's petro-centric fueling system is in need of an upgrade. The installation of blender pumps to replace older gasoline-only models provides retailers and consumers the same opportunity to pick the fuel blends that are right for them. Through initiatives like the Blend Your Own Ethanol campaign, the industry will be aggressively pushing the adoption of this technology.

## Regulation as Opportunity?

Industries of all shapes and sizes typically believe more regulations means more challenges and more cost. Too often, that may indeed be the case. But a few new regulations on the horizon may present opportunities for domestic ethanol as well.

**Meeting Fuel Economy Standards with Ethanol:** New federal fuel economy and tailpipe GHG emissions standards set to go into effect in 2017 present an opportunity for ethanol blends above E15. Ethanol's high octane rating (113 for pure ethanol) will be a valuable asset to automakers as engines are designed to utilize octane to increase efficiency. Ethanol's ability to burn cleaner will help automakers meet the emissions standards too.

**The Right Carbon Regulations:** Properly constructed and science-based carbon regulations would provide an opportunity for ethanol blends as more and more tar sands oil and other marginal sources flood the petroleum market. On a level playing field, there's no question that ethanol outperforms oil in terms of environmental and climate impacts. Simple, common sense changes to policies at the federal and state level could present market opportunities. These changes will not come easily or overnight.



*SIMPLE, COMMON SENSE CHANGES TO POLICIES AT THE FEDERAL AND STATE LEVEL COULD PRESENT MARKET OPPORTUNITIES.*



## The Yeas and Nays

The end of VEETC and the secondary tariff on imported ethanol does not mean that the industry work on legislative issues is over. In many instances, it is just beginning.

**Defending the RFS:** Maintaining the integrity and achieving the goals of the RFS will be a top priority for the domestic industry. Efforts to alter the RFS will be numerous as anti-ethanol voices seek to eliminate the only domestic renewable fuel having an impact in the market today.

**Tax Policy for the 21st Century:** Extending key incentives for advanced and cellulosic ethanol producers, along with a continued push to end handouts to the petroleum industry and level the playing field for all fuels will be important. Ending the tax incentive for ethanol does not end the tax debate for the industry.

**Opening the Market to All:** The RFA has and will continue to support the policies, including the Open Fuel Standard (OFS), that will put flexible fuel vehicles on the road, blender pumps in the ground, and give consumers the real choice they deserve.

## The Global Puzzle

The increasingly robust global trade in ethanol has emerged as a vital new market for domestic ethanol producers.

**European Access:** European markets have been a strong growth opportunity for US ethanol producers, particularly as European ethanol producers are unable to meet their own renewable energy standards. Ensuring a sensible outcome in the ongoing trade investigation will be essential.

**Fair Trade for All:** Many of the US ethanol trading partners, and Brazil in particular, have in place prohibitive and variable trade protections that limit US ethanol's access to the market. With the US tariff now expired, other nations should follow suit to ensure a fair market is developed. Similar issues also exist for ethanol co-products, such as distillers grains.

# Myth-Busting

THE PERCEPTION OF ETHANOL, ETHANOL PRODUCERS, AND FARMERS HAS BEEN INTENTIONALLY SULLIED BY INDUSTRIES WHICH SEEK A STATUS QUO APPROACH. THESE MYTHS, PERPETUATED AND PROPAGATED WITH MILLIONS OF DOLLARS OF PUBLIC RELATIONS ACTIVITIES, ARE EASILY REJECTED WITH A SIMPLE ANALYSIS OF THE FACTS.



**Myth:** ✘ Ethanol uses too much corn.

- Facts:**
- ✓ Ethanol uses just 26 percent of the nation's corn crop on a net basis. (Source: USDA, RFA)
  - ✓ Global corn supplies are the largest in history. (Source: USDA)
  - ✓ Ethanol production requires just 2/3 of each bushel of corn. The remaining 1/3 is fed to livestock in the form of distillers grains. (Source: RFA)
  - ✓ The U.S corn harvest in 2011 was the fourth-largest in history. (Source: RFA)

**Myth:** ✘ Ethanol uses more energy than it yields.

- Facts:**
- ✓ Ethanol production yields 1.7-2.3 units of energy for every unit of energy used in the entire lifecycle process. (Source: USDA)
  - ✓ A gallon of ethanol requires 19 times less oil to produce than a gallon of gasoline. (Source: Univ. of California-Berkeley, 2006)



**Myth:** ✘ Ethanol production raises the price of corn and food.

- Facts:**
- ✓ Experts from USDA, the World Bank, academia, and other nongovernmental organizations all note that a range of factors influence food prices including oil prices, commodity speculation, weather, and monetary policies.
  - ✓ According to USDA, American farmers receive just 12.6 cents of every dollar spent on food. (Source: USDA)





**Myth:** ✘ Ethanol production uses too much water.

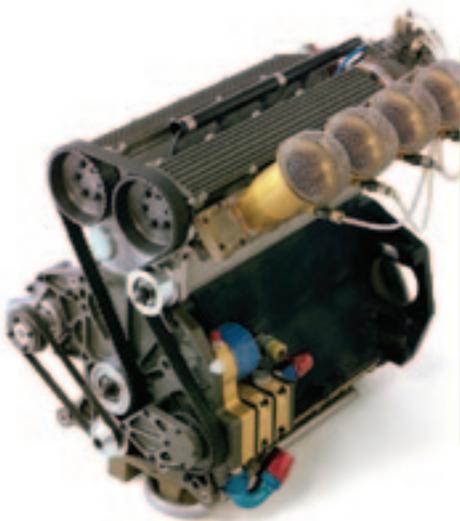
- Facts:**
- ✔ Since 2001, ethanol producers have lowered their water requirements by 47 percent. (Source: S. Mueller, U. of IL-Chicago)
  - ✔ Only 15 percent of all corn grown in the U.S. is irrigated. The rest is rainfed.
  - ✔ Production of marginal oil sources, like Canadian tar sands, requires up to 8 barrels of water for each barrel of oil produced. (Source: Pembina Institute, Canada)

**Myth:** ✘ Ethanol emits more greenhouse gases than gasoline.

- Facts:**
- ✔ Research from the EPA, the University of Nebraska-Lincoln, and other respected academics show current ethanol production provides greenhouse gas reductions between 30 and 49 percent compared to gasoline.
  - ✔ Marginal oil sources, like Canadian tar sands, with which ethanol competes emit three times the greenhouse gases to extract as more traditional oil sources.
  - ✔ Ethanol use in 2011 reduced greenhouse gas emissions from vehicles by 25.3 million tons – the equivalent emissions from 4 million vehicles.

**Myth:** ✘ Ethanol ruins engines.

- Facts:**
- ✔ Virtually every engine maker – car, truck, boat, lawnmower – provides warranty coverage for E10 ethanol blends.
  - ✔ Ethanol has been a fuel source used safely in America since 1978.



# RFA at Your Service

SINCE 1981, THE RENEWABLE FUELS ASSOCIATION (RFA) HAS BEEN THE AUTHORITATIVE VOICE OF THE ETHANOL INDUSTRY. OUR MEMBERS ARE COMMITTED TO HELPING OUR COUNTRY BECOME CLEANER, SAFER, AND MORE ENERGY INDEPENDENT. IN CREATING A FORUM FOR ETHANOL PRODUCERS AND INDUSTRY STAKEHOLDERS, RFA HAS ACHIEVED AN UNEQUALED RECORD OF RESULTS THROUGH ACTION, ADVOCACY, AND ANALYSIS.

With the most experienced staff in the industry, RFA is able to provide timely, comprehensive industry information to our members, Congress, federal and state government agencies, strategic partners, the media and other opinion-leader audiences.

RFA has been the industry's most forceful advocate in expanding the market for ethanol. Just as important, we've worked to beat back challenges to ethanol progress from special interests seeking to maintain the fossil fuel status quo.



## Members Make the Difference

The success the RFA has been able to achieve on behalf of American ethanol producers is due to the unparalleled support it has received from its member companies. Large and small, publicly-traded and family-owned, the diverse group of RFA members provides unequalled expertise in developing policy positions and pushing market initiatives that thoughtfully and meaningfully expand the production and use of ethanol domestically and abroad.

It is the unique structure of the RFA Board of Directors, where each member is given a vote, and its committees that help foster a climate of dialogue and ultimately lead to the positions and practices of the RFA that open markets for our members.



*RFA HAS BEEN THE INDUSTRY'S MOST  
FORCEFUL ADVOCATE IN EXPANDING  
THE MARKET FOR ETHANOL.*

## Participation Sets RFA Apart

Since its inception, the RFA has recognized that successful advocacy for the American ethanol industry must be more than Washington influence and flashy public relations. Implementing the meaningful policies that have helped create the industry today and will lead to its evolution in the future require the engagement of industry participants and a willingness to address hard issues that often escape the public eye.

That is why the RFA offers industry-leading opportunities for ethanol companies and related businesses to engage with their colleagues in setting the course for the future. Through its extensive and experienced committee structure, the RFA is able to address all issues facing ethanol producers from international trade to quality control to market access.



### Technical Committee

Accurate and reliable information regarding the production, blending, distribution, and performance of ethanol fuels can mean the difference between success and failure. The RFA Technical Committee is the industry's leading voice in developing industry standards in coordination with ASTM to ensure the seamless integration of ethanol fuels into the marketplace.

### Co-Products Committee

Ethanol production is about more than just ethanol. Distillers grains, corn oil, and a host of other products are routinely part of an ethanol biorefineries' operations. The RFA Co-Products Committee pursues issues relevant to ethanol co-products, including research, educational programs and regulations. Members of this committee provide reliable data regarding the production, distribution, trade and performance of co-products.

### Plant & Employee Safety Committee

Safety comes first. The RFA Safety Committee has been extraordinarily proactive, leading efforts to provide ethanol producers, transporters and first responders with the information and tools they need to protect their employees and the communities they serve. Working with federal, state and local governments as well as industry partners, this committee has brought much needed attention to hazardous materials regulations and other safety regulations through programs such as the Ethanol Emergency Response Coalition (EERC) and the TRANSCAER® initiative.

### Environmental Compliance Committee

Existing to examine and provide guidance on the myriad of environmental regulations ethanol production facilities face, the priority of the RFA Environmental Compliance Committee is to protect the environment while providing a forum for navigating the complex regulations imposed on this industry. Topics frequently leading the agenda include EPA's Greenhouse Gas Tailoring Rule, Mandatory Greenhouse Gas Reporting Requirements and Industrial Wastewater regulations. This guidance is extraordinarily valuable in helping familiarize producers with environmental regulations relevant to the ethanol industry.

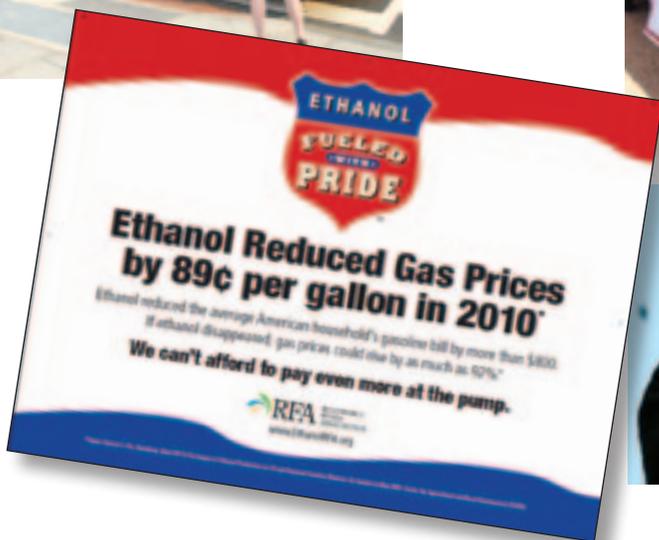
# RFA in Action

The RFA IS CONSISTENTLY BRINGING TO BEAR THE EXPERTISE AND RESOURCES OF ITS MEMBERSHIP AND STAFF IN ORDER TO EXPAND MARKETS, EDUCATE A MULTITUDE OF AUDIENCES, AND CREATE AN ENVIRONMENT CONDUCIVE TO THE INDUSTRY'S CONTINUED GROWTH AND EVOLUTION.

## Beltway Blitz

The ethanol industry remains underfunded compared to the wealth of the petroleum interests and other energy sectors. But that doesn't mean we cannot strategically and effectively communicate our message.

Most noticeably, the RFA ran a highly visible, widely discussed ad campaign in the Washington, D.C. metro area that focused on grabbing the attention of lawmakers, regulators, and influencers alike. The ads, focusing on the economic benefit of ethanol at the pump, were seen in Metro trains, on city buses, and in key publications read by D.C. opinion leaders. This campaign, running concurrently with discussions about the ethanol tax incentive in the spring and summer of 2011, was also complemented by television and online advertising on shows and websites frequented by policy makers. The RFA was the only renewable fuel group pressing its case before lawmakers while key discussions and votes were taking place.



## Expanding Ethanol Constituencies

As ethanol becomes ubiquitous in America's gasoline supply, new groups of engine operators are running on ethanol blends. From boaters to motorcycle enthusiasts to classic car owners, more Americans are driving more miles and more hours on ethanol blends than ever before.

Taking ethanol's positive message of performance, job creation, and energy security to these new audiences, the RFA continued its support of the Sturgis Motorcycle Rally at the Buffalo Chip in Sturgis, South Dakota. This event, the third in which the RFA has been a major sponsor, brings ethanol straight to the motorcycle community that is increasingly operating on ethanol blends. The event and partnership with the rally have been widely successful.

The RFA is also expanding its advocacy to the boating community. In 2011, the RFA was the official sponsor of the National Boat Racing Association. This premiere boat racing association ran on E10 ethanol blends. Racers competed at high speeds with great engine performance and saw no adverse impacts of ethanol blends.

Efforts like these and others underway at the RFA are critical to educating new ethanol users and countering the misinformation perpetuated from those interests that stand in our way.



## Safety First

Nothing surpasses safety as a priority for the RFA and its members. Whether it is employees at ethanol biorefineries or our neighbors in the communities we serve, the ethanol industry takes its safety responsibility seriously. The RFA has been leading the industry's efforts to educate the nation's first responders on the characteristics of ethanol-related incidents and providing them with the information, tools, and training they need to respond swiftly and effectively in the unlikely event of an incident. More information is available at [www.ethanolresponse.com](http://www.ethanolresponse.com)

## In Your Community

No advocacy is stronger than individual, neighbor to neighbor outreach. More and more ethanol producers are taking this to heart. Whether it is the increased presence of industry op-eds and letters to the editor, more ethanol-related billboards and advertising, or creative solutions such as advertising before movies in local theaters, RFA member companies are utilizing the advocacy tools developed by the RFA and tailoring to meet the needs of their local communities.

## Old-fashioned Shoe Leather and Elbow Grease

Long the trademark of the association, the RFA continues to be the leading voice for ethanol producers in Washington and around the world by basing its arguments on sound, well-researched advocacy. Through congressional and executive branch meetings and testimony, the RFA works tirelessly to create the best possible policy framework for American ethanol producers to thrive. Outside Washington, the RFA is increasing its presence in other nations as trade issues gain importance to the industry. All of this is buttressed by the RFA's industry-leading research and analysis on everything from ethanol production technologies to environmental regulations and scorekeeping to marketplace dynamics.

## Advanced Ethanol Council In Action

Formed with RFA in 2011, the Advanced Ethanol Council (AEC) has quickly become the leading voice for next generation ethanol in Washington, in the marketplace, and around the globe.

The AEC represents worldwide leaders in the effort to develop and commercialize advanced ethanol fuels, ranging from cellulosic ethanol made from dedicated energy crops, forest residues and agricultural waste to advanced ethanol made from municipal solid waste, algae and other feedstocks.

The AEC is the only advanced biofuel advocacy group with the singular purpose of promoting advanced ethanol fuels and technologies.

### The companies making up the AEC include:

Abengoa Bioenergy	Inbicon
Beta Renewables	Iogen Corporation
BlueFire Renewables	Mascoma
Coskata	Osage Bioenergy
Enerkem	Qteros
Fulcrum Bioenergy	ZeaChem

### With Singular Focus

The AEC is laser-focused on accelerating the commercialization of advanced ethanol fuels and technologies by promoting forward-looking and consistent public policy and a more open marketplace for renewable fuels.

The AEC is committed to extending tax policies and other incentives that are critical to the development of the industry – such as the Cellulosic Ethanol Producer Tax Credit and the Accelerated Depreciation for Cellulosic Biorefineries – for a length of time that provides investors and producers with the confidence they need to build first-of-kind facilities.

The AEC is also committed to maintaining the integrity and structure of the Renewable Fuel Standard (RFS) as it establishes core market demand for cellulosic and advanced ethanol. The AEC also supports accelerating the proliferation of ethanol fuel infrastructure and increasing the number of flex fuel vehicles on the road – provisions that are critical to the long term success of American ethanol production.

### Advanced Ethanol Council

#### Officers:

Chairman	William Brady, CEO, Mascoma
Vice Chairman	Christopher Standlee, Executive Vice President, Abengoa Bioenergy
Executive Director	Brooke Coleman

**D.C. Office**

Bob Dinneen	<i>President &amp; CEO</i>
Anne Rhine	<i>Office Administrator</i>
Cara Barrett	<i>Project Manager</i>
Christopher Findlay	<i>Administrative Assistant</i>
Mary Giglio	<i>Director, Special Projects and Events</i>
Matt Hartwig	<i>Chief of Staff</i>
Edward S. Hubbard, Jr., Esq.	<i>Legislative Counsel</i>
Christina Martin	<i>Executive Vice President</i>
Kristy Moore	<i>Vice President, Technical Services</i>
Taryn Morgan	<i>Communications Specialist</i>
Alex Obuchowski	<i>Chief Financial Officer</i>
Samantha Slater	<i>Vice President, Government Affairs</i>
Matt Stuckey	<i>IT Director</i>

**St. Louis Office**

Geoff Cooper	<i>Vice President, Research and Analysis</i>
Ann Lewis	<i>Project Manager</i>

**Omaha Office**

Jen Kracher	<i>Administrative Assistant</i>
Lindsey Bierman	<i>Marketing Coordinator</i>
Missy Ruff	<i>Market Development Manager</i>
Robert White	<i>Director of Market Development</i>
Randy Klein	<i>Director of Membership</i>



The Renewable Fuels Foundation is dedicated to meeting the education, research and strategic planning needs of the U.S. fuel ethanol industry.

The goal is to assure a growing and healthy renewable fuels industry well into the future. The focus of the RFF is toward academia, industry and public policy makers as we address issues related to new uses, new feedstocks and new technologies that will impact the future of ethanol.

**RFF Officers**

Mike Jerke  
*Chairman*  
*Chippewa Valley Ethanol Company*

Bob Sather  
*Vice Chairman*  
*Ace Ethanol, LLC*

Mick Henderson  
*Treasurer*  
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Steve Gardner  
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## Associate Members

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BBI International  
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Bosselman Energy  
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BrownWinick  
[www.brownwinick.com](http://www.brownwinick.com)

Carl Marks Advisory Group  
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CHS Inc.  
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CIMA Green  
[www.cimagreen.com](http://www.cimagreen.com)

CoBank  
[www.cobank.com](http://www.cobank.com)

Codexis, Inc.  
[www.codexis.com](http://www.codexis.com)

Consolidated Grain & Barge Co.  
[www.cgb.com](http://www.cgb.com)

CSX Transportation  
[www.csx.com](http://www.csx.com)

Dorsey & Whitney, LLP  
[www.dorsey.com](http://www.dorsey.com)

Eco-Energy, Inc.  
[www.eco-energyinc.com](http://www.eco-energyinc.com)

Fagen, Inc.  
[www.fageninc.com](http://www.fageninc.com)

Farm Credit Bank of Texas  
[www.farmcreditbank.com](http://www.farmcreditbank.com)

Farm Credit Services of America  
[www.fcsamerica.com](http://www.fcsamerica.com)

FCStone, LLC  
[www.intlfcstone.com](http://www.intlfcstone.com)

Fermentis - S.I. Lesaffre  
[www.fermentis.com](http://www.fermentis.com)

Fremont Industries, Inc.  
[www.fremontind.com](http://www.fremontind.com)

G Cube Insurance Services  
[www.gcube-insurance.com](http://www.gcube-insurance.com)

Gavilon, LLC  
[www.gavilon.com](http://www.gavilon.com)

Genencor, A Danisco Division  
[www.genencor.com](http://www.genencor.com)

Gold Eagle Co.  
[www.goldeagle.com](http://www.goldeagle.com)

Growmark, Inc.  
[www.growmark.com](http://www.growmark.com)

Hawkeye Gold  
[www.hawkgold.com](http://www.hawkgold.com)

Husch Blackwell, LLP  
[www.huschblackwell.com](http://www.huschblackwell.com)

Hydro-Klean, Inc.  
[www.hydro-klean.com](http://www.hydro-klean.com)

Illinois Corn Marketing Board  
[www.ilcorn.org](http://www.ilcorn.org)

Indiana Corn Marketing Council  
[www.incorn.org](http://www.incorn.org)

Innospec Fuel Specialties  
[www.innospecinc.com](http://www.innospecinc.com)

Iowa Corn Growers Association  
[www.iowacom.org](http://www.iowacom.org)

Iowa Renewable Fuels Association  
[www.iowarfa.org](http://www.iowarfa.org)

KATZEN International, Inc.  
[www.katzen.com](http://www.katzen.com)

Kenan Advantage Group, Inc.  
[www.thekag.com](http://www.thekag.com)

Kentucky Corn Promotion Council  
[www.KYCorn.org](http://www.KYCorn.org)

Kinder Morgan Inc.  
[www.kne.com](http://www.kne.com)

Lallemand Ethanol Technology  
[www.ethanoltech.com](http://www.ethanoltech.com)

Lansing Ethanol Services, LLC  
[www.lansingtradegroup.com](http://www.lansingtradegroup.com)

Leonard, Street and Deinard  
[www.leonard.com](http://www.leonard.com)

Lincoln Energy Solutions  
[www.lincolnenergysolutions.com](http://www.lincolnenergysolutions.com)

LLL Holdings, Inc.  
[www.LLLTransport.com](http://www.LLLTransport.com)

M-Pact BioFuels, LLC  
[www.mpactbiofuels.com](http://www.mpactbiofuels.com)

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[www.midwestlabs.com](http://www.midwestlabs.com)

Monsanto  
[www.monsanto.com](http://www.monsanto.com)

Motiva Enterprises LLC  
[www.motivaenterprises.com](http://www.motivaenterprises.com)

Murex, N.A., Ltd.  
[www.murexltltd.com](http://www.murexltltd.com)

Nalco Company  
[www.Nalco.com](http://www.Nalco.com)

National Corn Growers Association  
[www.ncga.com](http://www.ncga.com)

National Grain Sorghum Producers  
[www.sorghumgrowers.com](http://www.sorghumgrowers.com)

Natural Resource Group  
[www.nrginc.com](http://www.nrginc.com)

Nebraska Corn Board  
[www.nebraskacorn.org](http://www.nebraskacorn.org)

Noble Americas Corp.  
[www.thisisnoble.com](http://www.thisisnoble.com)

NorFalco Inc.  
[www.norfalco.com](http://www.norfalco.com)

North American Bioproducts Corp.  
[www.na-bio.com](http://www.na-bio.com)

North Dakota Corn Council  
[www.ndcorn.org](http://www.ndcorn.org)

Novozymes North America, Inc.  
[www.novozymes.com](http://www.novozymes.com)

PhibroChem  
[www.phibrochem.com](http://www.phibrochem.com)

Pinnacle Engineering Inc.  
[www.pineng.com](http://www.pineng.com)

Pioneer, A DuPont Company  
[www.pioneer.com](http://www.pioneer.com)

PRX Geographic, Inc.  
[www.prxgeo.com](http://www.prxgeo.com)

Renewable Products Marketing Group  
[www.rpmgllc.com](http://www.rpmgllc.com)

RSM McGladrey  
[www.mcgladrey.com](http://www.mcgladrey.com)

SGS  
[www.sgs.com](http://www.sgs.com)

Sojitz Corporation of America  
[www.Us.Sojitz.com](http://www.Us.Sojitz.com)

Syngenta  
[www.syngenta.com](http://www.syngenta.com)

TMO Renewables LTD  
[www.tmo-group.com](http://www.tmo-group.com)

TransMontaigne Product Services  
[www.transmontaigne.com](http://www.transmontaigne.com)

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[www.transystems.com](http://www.transystems.com)

Trinity Rail Group, LLC  
[www.trinityrail.com](http://www.trinityrail.com)

U.S. Development Group  
[www.us-dev.com](http://www.us-dev.com)

Union Pacific Railroad  
[www.up.com](http://www.up.com)

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[www.utlx.com](http://www.utlx.com)

Verenium  
[www.verenium.com](http://www.verenium.com)

Victaulic  
[www.victaulic.com](http://www.victaulic.com)

Weaver  
[www.weaverllp.com](http://www.weaverllp.com)

Western Ethanol Company, LLC  
[www.westernethanol.com](http://www.westernethanol.com)

## Supporting Members

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[www.aradc.org](http://www.aradc.org)

Angelina College  
[www.angelina.edu](http://www.angelina.edu)

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[www.bemidjistate.edu](http://www.bemidjistate.edu)

Bismarck State College  
[www.bsc.nodak.edu](http://www.bsc.nodak.edu)

Colorado Farm Bureau  
[www.colofb.com](http://www.colofb.com)

Corn Marketing Program of Michigan  
[www.micorn.org](http://www.micorn.org)

Distillers Grains Technology Council  
[www.distillersgrains.org](http://www.distillersgrains.org)

Downstream Alternatives  
[www.ethanolmt.org](http://www.ethanolmt.org)

Ethanol Producers and Consumers  
[www.ethanolmt.org](http://www.ethanolmt.org)

Great Falls Development Authority, Inc.  
[www.gfdevelopment.org](http://www.gfdevelopment.org)

Iowa Central Community College  
[www.iccc.cc.ia.us](http://www.iccc.cc.ia.us)

Iowa Central Fuel Testing Laboratory  
[www.iowafuellab.com](http://www.iowafuellab.com)

Jamestown/Stutsman Development Corp.  
[www.growingjamestown.com](http://www.growingjamestown.com)

Kansas Association of Ethanol Processors  
[www.ethanolkansas.org](http://www.ethanolkansas.org)

Kentucky Energy & Environment Cabinet – Department for Energy  
[www.eec.ky.gov](http://www.eec.ky.gov)

Maryland Grain Producers Utilization Board  
[www.marylandgrain.com](http://www.marylandgrain.com)

Michigan State University – Department of Agricultural Economics  
[www.aec.msu.edu](http://www.aec.msu.edu)

Milano the New School  
[www.newschool.edu/milano](http://www.newschool.edu/milano)

Minnesota Biofuels Association  
[www.MNBiofuels.org](http://www.MNBiofuels.org)

Minnesota Corn Growers Association  
[www.mncom.org](http://www.mncom.org)

Minnesota Department of Agriculture  
[www.mda.state.mn.us](http://www.mda.state.mn.us)

Mississippi State University – Department of Forestry  
[www.cfr.msstate.edu/forestry](http://www.cfr.msstate.edu/forestry)

Missouri Corn Growers Association  
[www.mocorn.org](http://www.mocorn.org)

Morton College  
[www.morton.edu](http://www.morton.edu)

National Corn-to-Ethanol Research Center  
[www.ethanolresearch.com](http://www.ethanolresearch.com)

Nebraska Corn Growers Association  
[www.necga.org](http://www.necga.org)

New Jersey Gasoline C-Store Automotive Association (NJGCA)  
[www.njgca.org](http://www.njgca.org)

Ohio Corn Marketing Program  
[www.ohiocom.org](http://www.ohiocom.org)

REDDI  
[www.reddionline.org](http://www.reddionline.org)

South Dakota Corn Growers Association  
[www.sdcom.org](http://www.sdcom.org)

Southeastern Illinois College  
[www.sic.edu](http://www.sic.edu)

Steele-Waseca Cooperative Electric  
[www.swce.coop](http://www.swce.coop)

Sugar Processing Research Institute  
[www.spriinc.org](http://www.spriinc.org)

Texas Renewable Energy Industries Association  
[www.treia.org](http://www.treia.org)

United Association  
[www.ua.org](http://www.ua.org)

Water Assurance Technology Energy Resources  
[www.watere3.com](http://www.watere3.com)

Western Iowa Tech Community College – The National Boiler Training and Renewable Fuels Institute  
[www.boiler.witcc.com](http://www.boiler.witcc.com)

Western Petroleum Co.  
[www.westernpetro.com](http://www.westernpetro.com)

Wisconsin Pipe Trades Association  
[www.wpipetrades.org](http://www.wpipetrades.org)

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