

**U.S. Ethanol Industry at a Glance**

**109** plants currently operating, annual capacity 5.15 billion gallons

**12** plants undergoing expansion

**61** plants under construction

## Ethanol's Most Successful Year in Review

# Big

by Kristin Brekke

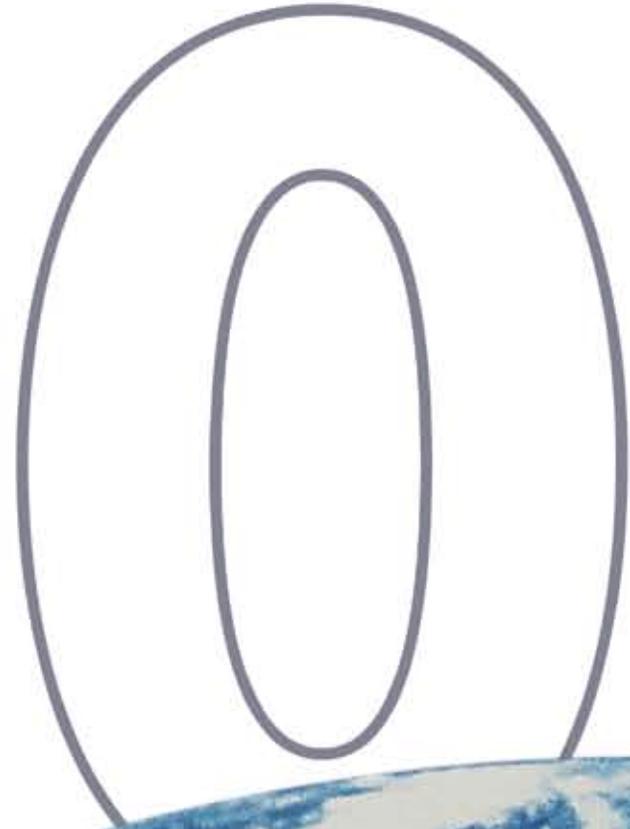
The tremendous growth experienced by the ethanol industry in '05 has only accelerated in '06. The U.S. ethanol industry continues to break production records, rapidly growing its ability to supply our nation with clean, renewable, domestically produced fuel.

### Ethanol production

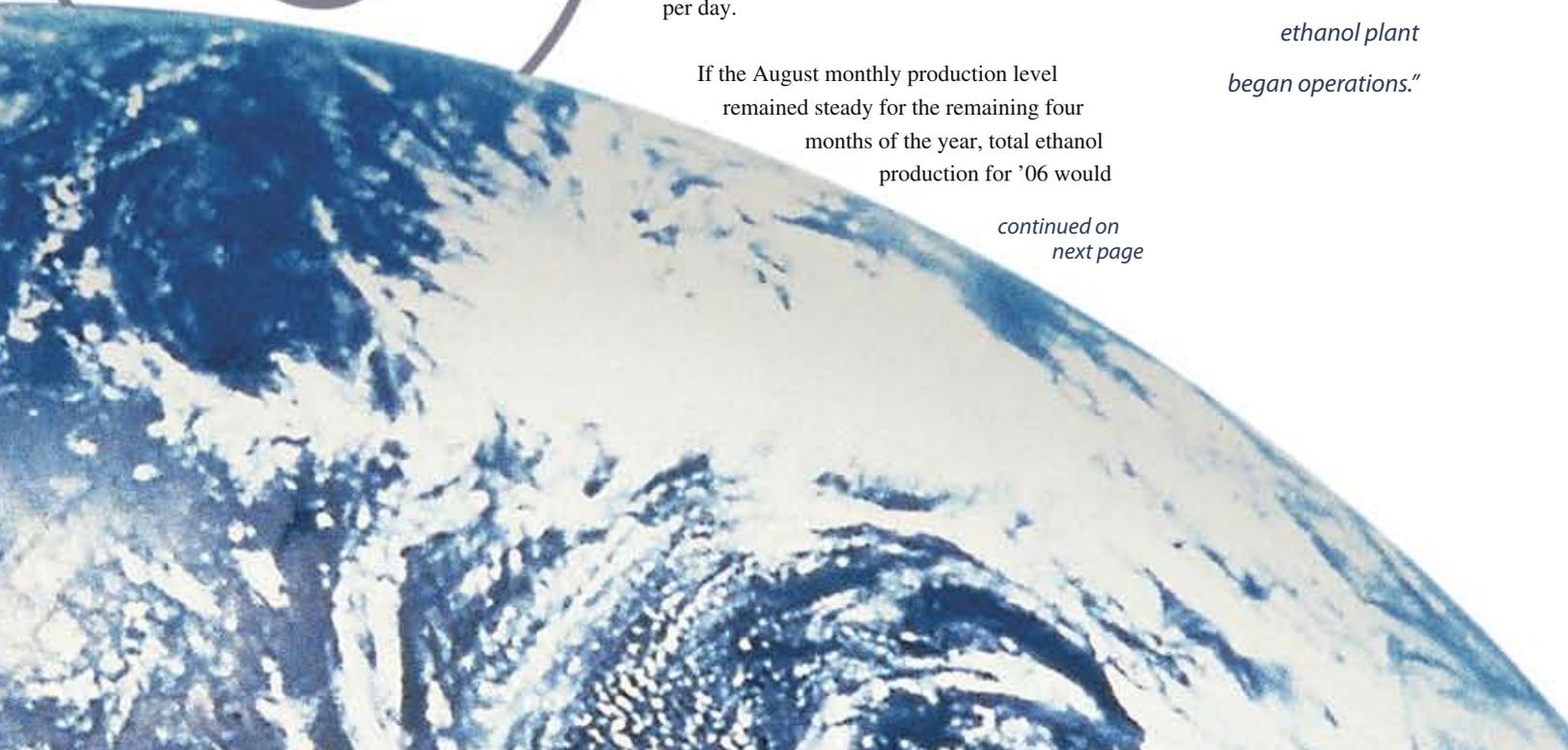
In June of this year, the U.S. ethanol industry hit a major milestone – the nation's 100th ethanol plant began operations. At press time for the December issue of *Ethanol Today*, the industry was well into triple digits with 109 ethanol facilities in operation nationwide. The industry's total annual production capacity has reached a record 5.15 billion gallons.

As of mid-November, 13 ethanol plants had come online this year and 24 more facilities had begun construction activities.

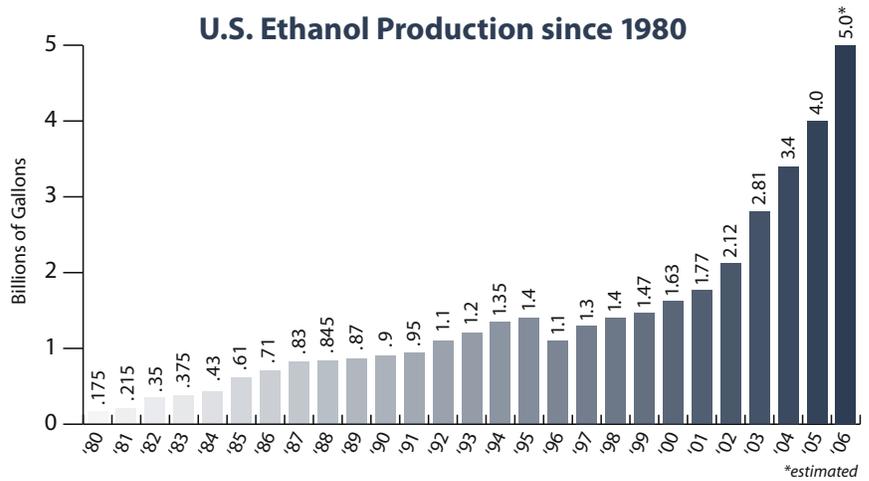
Expansion has also been a common theme, with 12 of these existing ethanol plants undergoing expansion. Once complete, these expansions will add approximately 560 million gallons of annual production capacity.



# Year!



**U.S. Ethanol Production since 1980**



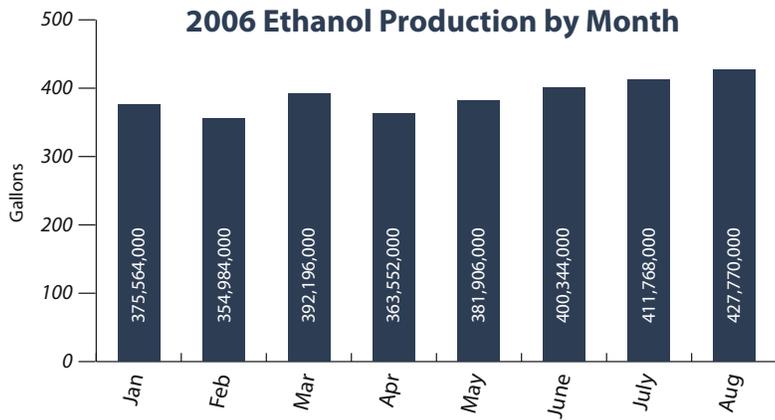
Ethanol's expansion in 2006 is an extension of a several-year growth trend. It took 20 years for the U.S. to grow its first billion gallons of ethanol capacity; since 2001, however, the industry has grown by an average 23 percent annually, adding more than three billion gallons of capacity in that time.

According to the most recent data available from the Energy Information Administration, the statistical arm of the U.S. Department of Energy, the U.S. had produced 3.11 billion gallons of ethanol as of the end of August. By that time, the monthly production level had climbed to 428 million gallons, or 13.8 million gallons per day.

If the August monthly production level remained steady for the remaining four months of the year, total ethanol production for '06 would

*"In June of this year, the U.S. ethanol industry hit a major milestone – the nation's 100th ethanol plant began operations."*

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Source: Energy Information Administration

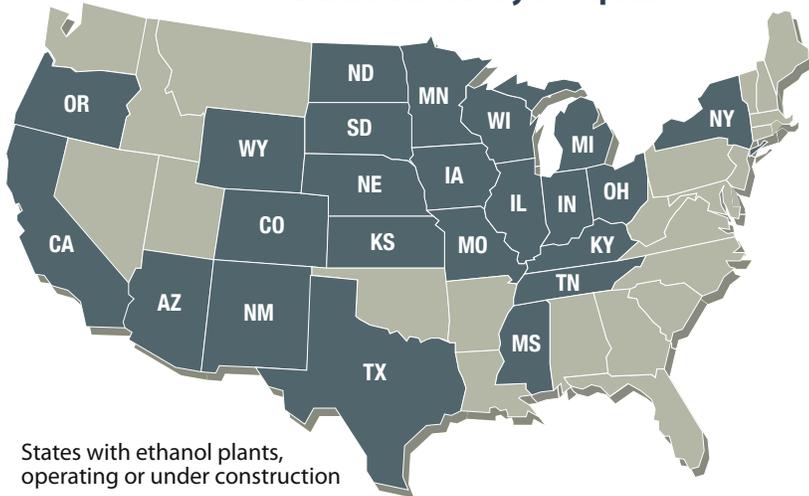
reach 4.82 billion gallons. With several additional plants coming online between September and December, total ethanol production for '06 is anticipated to be in the neighborhood of 5 billion gallons – up a full 25 percent from last year.

The ethanol industry continues to expand across America, increasing its presence in the Midwest and also in areas beyond. Twenty-three states are now home to ethanol production, either ethanol plants in operation or under construction.

Iowa continues to lead the states in ethanol production, now with more than 1.5 billion gallons of annual capacity. At this time, Iowa more than doubles the capacity of second largest ethanol producer Illinois. Nebraska ranks third, and Minnesota and South Dakota round out the top five.

A look at the state-by-state rankings for ethanol plants under construction offers a glance at where the growth is occurring and how this might impact the list of top ethanol producers. The construction boom continues in Iowa, with an additional 620 million gallons of production capacity currently in the works. Nebraska, however, shows even more construction activity – 845 million gallons of capacity under construction. When complete, this will more than double the state's existing capacity and launch Nebraska to the position of the nation's second largest ethanol producer.

### U.S. Ethanol Industry Footprint



States with ethanol plants, operating or under construction



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Indiana is a strong presence on the under construction list, seeing an additional 510 million gallons under construction at this time.

South Dakota ranks fourth here, showing continued steady growth in its ethanol industry. Ohio comes in at number five, with Texas, Illinois, North Dakota, Wisconsin, and Oregon rounding out the top ten.

**On the legislative front**

The Renewable Fuels Standard was last year's theme, with the Energy Policy Act of 2005 being passed by Congress in July and signed into law by President Bush in August. In 2006, the attention has turned to something equally as important – the implementation of this historic standard.

The U.S. Environmental Protection Agency is charged with implementing the RFS, and efforts began last fall to begin a dialog with the various stakeholders involved. With the proposed implementation rule now having been announced by EPA, this month *Ethanol Today* takes an in-depth look at this process in our feature story beginning on page 38. ACE's Brian Jennings and Eric Washburn offer a detailed view of the proposed rule and some remaining concerns the organization feels still need to be addressed.

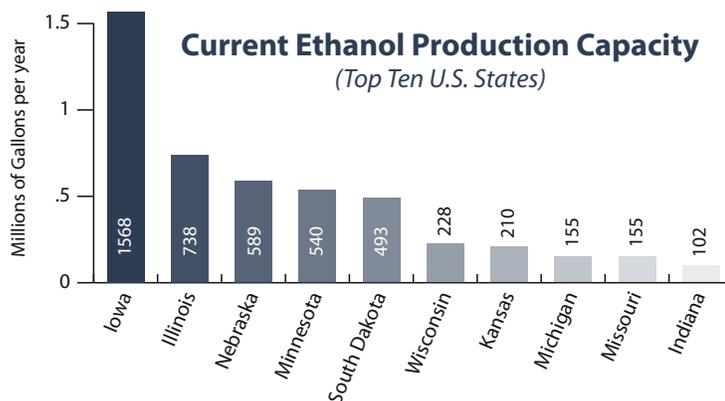
The RFS calls for an increasing amount of ethanol and biodiesel to be used nationwide, beginning this year and charting outward to 2012.

As evidenced by the current production numbers outlined earlier, the U.S. ethanol industry is already outpacing the levels outlined by the Renewable Fuels Standard. ACE and several other entities have studied the growth trends and feel that the 7.5 billion gallon mark prescribed in the RFS for 2012 will in reality be reached much sooner – most feel it will be achieved between 2008 and 2009.

The American Coalition for Ethanol is advocating an ambitious, yet achievable plan to revise the RFS to better reflect the U.S. ethanol industry's actual rate of growth. ACE leadership announced a plan in May to boost the RFS to 12 billion gallons per year by 2012, up from the current 7.5 billion gallon level in the law.

*"The American Coalition for Ethanol is advocating an ambitious, yet achievable plan to revise the RFS to better reflect the U.S. ethanol industry's actual rate of growth."*

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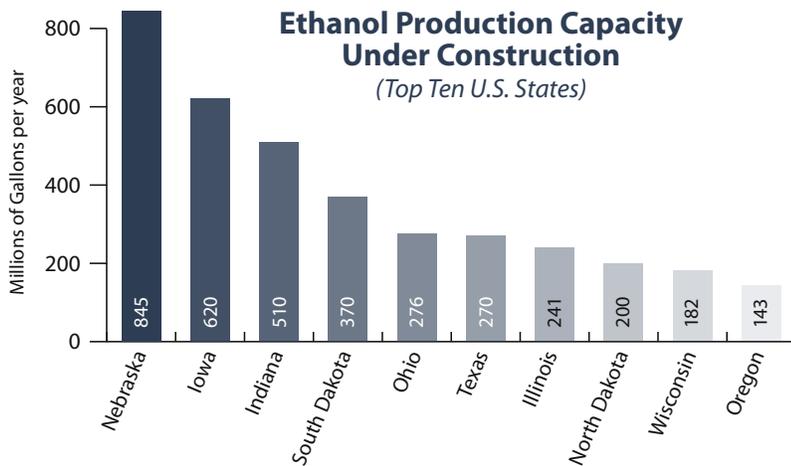
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*"A new '12 by 12' Renewable Fuels Standard is ambitious, yet achievable."*

"Given the current growth rate of the U.S. ethanol industry, the fact is that the 7.5 billion gallons called for in the current RFS will be reached three to four years before the 2012 date set forth in the energy bill. A new '12 by 12' Renewable Fuels Standard is ambitious, yet achievable and will keep domestic fuel production growing at a meaningful rate," said Brian Jennings, ACE Executive Vice President.

In addition to this expanded RFS, ACE is proposing a new RFS that provides for 60 billion gallons of ethanol production annually, of which at least 12 billion gallons must come from grain. The date at which this 60 billion gallon mark should be reached under this new RFS would be determined by the technical and economic feasibility of achieving it.



The organization's plan also includes:

- Permanently expanding the existing renewable fuel tax incentives – the Volumetric Ethanol Excise Tax Credit (VEETC) and the Small Ethanol Producer Tax Credit.
- Requiring all vehicles sold in the U.S. to be flexible fuel vehicles by 2017, or sooner if possible.
- Requiring major oil companies to offer E85 at half of their gas stations by 2017, or sooner if possible.

ACE was pleased to coordinate with U.S. Senators Tom Harkin (D-IA) and Richard Lugar (R-IN) for many elements of this plan to be included in

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bipartisan legislation, Senate Bills 2816 and 2817. ACE looks forward to continue working toward this legislative goal in the upcoming Congress.

### Ethanol demand drivers

The picture of ethanol demand for 2006 was in some respects related to legislation – namely the Energy Policy Act of 2005. The major demand driver for ethanol was not something included in the legislation, but rather something that was left out.

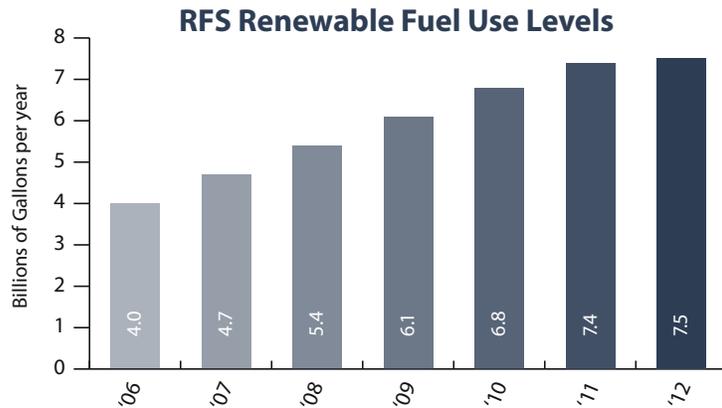
Though there had been efforts to negotiate its inclusion throughout the process, the energy bill of 2005 did not include product liability protection for the makers of MTBE, methyl tertiary butyl ether. Due to the numerous incidents of ground water pollution caused by MTBE leaks or spills, especially in the Northeast, manufacturers of the product found themselves in the unattractive situation of facing current and potential lawsuits. And since the energy bill traded the two percent oxygen standard for the RFS, there was no longer any federal law requiring the use of MTBE.

And though there is no federal law banning the use of MTBE, the petroleum companies that manufacture it began getting out of the MTBE business sooner rather than later.

This transition away from MTBE began early in the spring of 2006. As expected, the Newark, New Jersey area (the New Jersey side of New

*continued on page 48*

*“The petroleum companies that manufacture MTBE began getting out of the business sooner rather than later.”*



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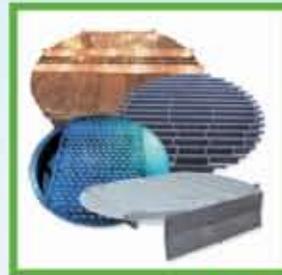
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"Of those 60-plus plants under construction, farmers and local owners still have a strong presence on the list, but private equity has arrived in a big way."

York) and Philadelphia area dropped MTBE in favor of ethanol. In addition, Delaware, Baltimore, and the Washington DC metro area joined the ranks of new ethanol markets. What wasn't expected, however, was that the Gulf Coast and the Dallas and Houston metro areas would also transition away from MTBE – a product made in that very region – in favor of ethanol.

What also wasn't expected was the rapid pace at which the transition took place. As ACE Vice President / Market Development Ron Lamberty commented in his July *Ethanol Today* column, "They jumped off the balcony when everyone assumed they would take the stairs." All of these areas – from the Northeast, down the Eastern seaboard, to the Gulf Coast – dropped MTBE almost simultaneously. This led to a huge and sudden jump in demand for ethanol.

The petroleum industry's move away from MTBE left a sizeable void in the U.S. fuel supply – fortunately, ethanol was there to step in and fill the gap. Last year the U.S. used approximately 2.1 billion gallons of MTBE, which translates to about 6 million gallons a day; as of this spring, MTBE consumption dropped to nearly zero.

As with any transition to a new fuel, the move was not without temporary hiccups and infrastructure difficulties. Some of these new markets were well prepared for ethanol, and some markets were not. The previous system for handling Reformulated Gasoline (RFG) needed some upgrading to begin handling ethanol. One difference is that rail siding is necessary to unload the ethanol fuel cars. Also, RFG can be handled in one tank, while ethanol and the Reformulated Blendstock for Oxygenate Blending (RBOB) are housed in separate tanks at the terminal. These inventory and infrastructure issues were generally resolved within a few weeks' time and were not long-term problems.

During the transition away from MTBE, ethanol prices were strong due to the increased demand. The ethanol supply shifted from the optional blend markets – those markets that use ethanol based on the fuel's blending economics – to the octane and oxygenate markets. Ethanol prices did peak for a time, but have since settled

and are back to trading with a normal range compared to the price of gasoline.

Due to the void left by MTBE pulling out of the fuel supply, some were calling for the secondary tariff on imported ethanol to be dropped in an effort, they said, to boost fuel supplies. As mentioned in the September issue of *Ethanol Today*, any hope of receiving "boat loads" of ethanol from Brazil was misplaced. Over the past year, Brazil has not had enough ethanol to fulfill its own domestic demand and as a result had reduced the percentage of ethanol in each gallon of gasoline from 25 to 20. It was only in the first week of November when Brazil was able to increase that percentage back up to 23.

#### **Ethanol enters the stock market**

The past year brought some changes in the ownership structure of the ethanol industry – most notably, two major ethanol companies entered the stock market and became publicly traded. Others have announced plans to follow in their footsteps.

On June 14, VeraSun Energy Corporation, an ethanol producer based in Brookings, South Dakota, raised \$419.8 million in its initial public offering on the New York Stock Exchange. VeraSun now trades under the NSYE symbol VSE. The company sold 18,250,000 shares at \$23 per share.

Shortly thereafter, on June 29, ethanol producer and marketer Aventine Renewable Energy held its initial public offering at \$43 per share. Aventine, trading on the NYSE under the symbol AVR, offered 9.1 million shares in its IPO.

Prior to VeraSun and Aventine going public, stock market investors had limited opportunity to get involved with the ethanol industry. Archer Daniels Midland is a major ethanol producer trading on the NYSE under ADM, but this does not represent a pure ethanol play because of the company's diverse ag processing activities.

Ethanol producer and marketer Pacific Ethanol also trades publicly, on the Nasdaq



under PEIX. Also, in August, ethanol producer US BioEnergy Corp. filed with the Securities and Exchange Commission to raise up to \$300 million through an IPO. The company plans to trade under the symbol USBE.

In September, ethanol producer Hawkeye Holdings of Iowa Falls, Iowa made the decision to delay its planned \$360 million IPO due to market conditions not being as favorable as they had been. Also in September, ASAAlliance Biofuels filed with the SEC to raise up to \$300 million in an IPO. The Dallas-based company has partnered with Cargill Inc. for corn supply and ethanol and co-product marketing services.

In addition to these new stock market opportunities, private investors are taking a look at and stepping into the U.S. ethanol industry as

owners of ethanol plants. Of those 60-plus plants under construction, farmers and local owners still have a strong presence on the list, but private equity has arrived in a big way. This type of private capital constitutes more than half of the ethanol plants under construction at this time.

### **Ethanol drives Indy**

No recap of ethanol's year 2006 would be complete without a mention of ethanol's debut at the Indy Racing League (IRL). Ethanol made its debut in this year's IndyCar® Series season in a fuel blend of 10 percent ethanol, 90 percent methanol. Beginning with the 2007 season, the IRL will race on pure, 100 percent fuel ethanol.

Tragically, the person who almost single-handedly made this possible – Paul Dana – died in a heartbreaking accident in the #17 Team Ethanol car during the opening-day race at Homestead-

Miami Speedway. Because of

Paul's visionary efforts, ethanol is now the fuel of choice for the IRL and millions of people will watch live demonstrations of ethanol's performance value through this highly visible venue.

At the American Coalition for Ethanol, our hats are off to all the devoted individuals who, whether in large or small ways, give their time and energy to make the U.S. ethanol industry what it is today. Whether it's through efficient ethanol production, market development efforts, beneficial public policy, or grassroots advocacy, ethanol has achieved this level of success due to all the people who believe so strongly in it. With this type of support in hand, the future for ethanol in the U.S. is certainly secure.

*"Because of Paul's visionary efforts, ethanol is now the fuel of choice for the IRL and millions of people will watch live demonstrations of ethanol's performance value through this highly visible venue."*

