

United States Energy Logistics

The Brazilian Petroleum Institute

June 27 – July 1, 2005 – Houston, Texas

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Clean Air Act of 1990

- **1980's: Denver, other Western cities required oxygenates in gasoline to reduce winter CO**
- **Clean Air Act of 1990**
 - 2.7% oxygen in 39 markets, 1993**
 - 2.0% oxygen in RFG 1995**
- **Ethanol: preferred oxygenate for CO non-attainment areas, MTBE for RFG markets**

Clean Air Act of 1990

- **Ethanol: oxygenate of choice in CO areas**
- **RVP OK during winter**
- **Ethanol: 34.7% oxygen by weight, MTBE: 18.2%**
- **Ethanol octane value 113, MTBE 109**
- **Blended RVP: Ethanol much higher than MTBE**
- **Ethanol demand to increase 1.5+ billion gals/year if every state banned MTBE**

Clean Air Act of 1990

- **MTBE preferred for refinery blending, pipeline fungible, RVP lower than ethanol for RFG**
- **U.S. gasoline Oxyegenate for RFG/CO: 34%+**
- **MTBE underground tanks contaminate water**

VEETC

Volumetric Ethanol Excise Tax Credit

- **Part of the American Jobs Creation Act**
- **Makes ethanol blending for flexible, and supports E85, biodiesel and fuel cells**
- **Extends ethanol tax incentive at \$.51 per gallon, through December 1, 2010, and creates a biodiesel tax credit**
- **Changes Small Producer Tax Credit to allow farmer cooperatives to benefit from the credit**

VEETC

Volumetric Ethanol Excise Tax Credit

- **Insures Highway Trust Fund (HTF) revenues not impacted by ethanol use, VEETC expected to generate \$3+ billion/yr in additional HTF revenue**
- **Bill secures ethanol and biofuels in the United States for next 5 years, increasing alternative fuels use, supports reduction in foreign oil dependence**

Ethanol Tax Incentives

Started in 1979

- **Initial ethanol tax incentive program in 1979: tax credit of \$.40 per gallon**
- **Incentive adjusted and renewed several times, recently extended for the 5th time at \$0.51 per gallon, effective through 2010**

Ethanol Legislation

State and Federal

- **Several States have mandates**

Minnesota – 10% Ethanol, 20% by 2013

Hawaii – 10% Ethanol in 85% of gasoline by 2006

Montana – 10% ethanol blends after state production can support demand

- **Other states have incentives, at least 7 other have ethanol mandate bills pending or in review**

Energy Bill

Federal

- **Congress killed Energy Bill died several times in last 4. President Bush made passage of Bill this summer one of highest priorities**
- **House passed, Senate debates. House version has 5 B gal ethanol RFS, MTBE liability protection**
- **Senate version has no MTBE liability protection, has 8 B gal ethanol RFS, passed thru committee**

Energy Bill

Federal

- **Energy Bill already passed the House, to pass Senate, by June 2005**
- **Thereafter, approved House Bill, and approved Senate Bill, to be debated by House/Senate Conference Committee, combined and voted**
- **President Bush: “Four years of debate is enough!”**

Energy Bill

Federal

- **EthanolMarket.com, LLC:**

“We believe an Energy Bill will pass this summer, with a 8 Bi gal RFS, and MTBE liability protection. This is not a certainty, but 80+% chance Bill with a 8 Bi gal RFS will pass before summer recess. Even without RFS, State MTBE activity will continue to grow. Next hump in early/mid 2006 when 900+ Mi gals new capacity comes on stream.”

Ethanol Capacity

United States

- **Currently annual capacity in 86 plants, 20 states:
3.8 Billion Gallons**
- **18 plants under construction, and other
expansions, to add 900 Mi gals by end 2006**
- **About 20-30 other plants evaluate sites,
engineering, design and/or financing, subject
permitting**

Fuel Ethanol Market

June 23, 2005

- **Current oversupply from significant capacity growth, caused market to significantly drop**
- **Rack prices reached near \$2.00/gal Nov 04, steadily dropped to national average \$1.24 May 05, causing unbelievable inversion prices ethanol x gasoline**
- **Spot numbers and rack lows, even lower with numbers in the \$1.12 per gallon range. The curve, a classic bell curve, started to turn up May 7, 05**

Fuel Ethanol Market

June 23, 2005

- **After turning, prices have steadily increased almost daily, very strong price gains**
- **National average for fuel ethanol rack prices neared \$1.44/gal June 13, 05 - will be in \$1.50/gal range the week of June 20, 2001, and \$1.53+/gal for the day on June 23, 2005**
- **Increase due to tightened inventories, increased demand, and increase in discretionary gallons for non-traditional blending markets, support by favorable blending economics**

MTBE

- **MTBE groundwater contamination becomes a serious issue with many states. CA, NY, CT banned MTBE Jan 1, 2004**
- **CA converted to 5.7% ethanol blends, caused 900 Mi gals increase in ethanol demand**
- **NY, CT conversion increased ethanol usage by over 550+ Mi gals**
- **Currently 21 states banned MTBE, many others have legislation pending**

State MTBE Bans

United States

Banned

- Arizona
- **California (RFG), 1/1/2004**
- Colorado
- **Connecticut (RFG), 1/1/2004**
- Illinois
- Indiana
- Iowa
- Michigan
- Minnesota
- Nebraska
- **New York (RFG), 1/1/2004**
- South Dakota
- Washington
- Wisconsin

Effective

- Kentucky - January 2006
- Maine – January 2007
- Missouri – July 2005
- Ohio – July 2005
- New Hampshire – January 2007

Pending

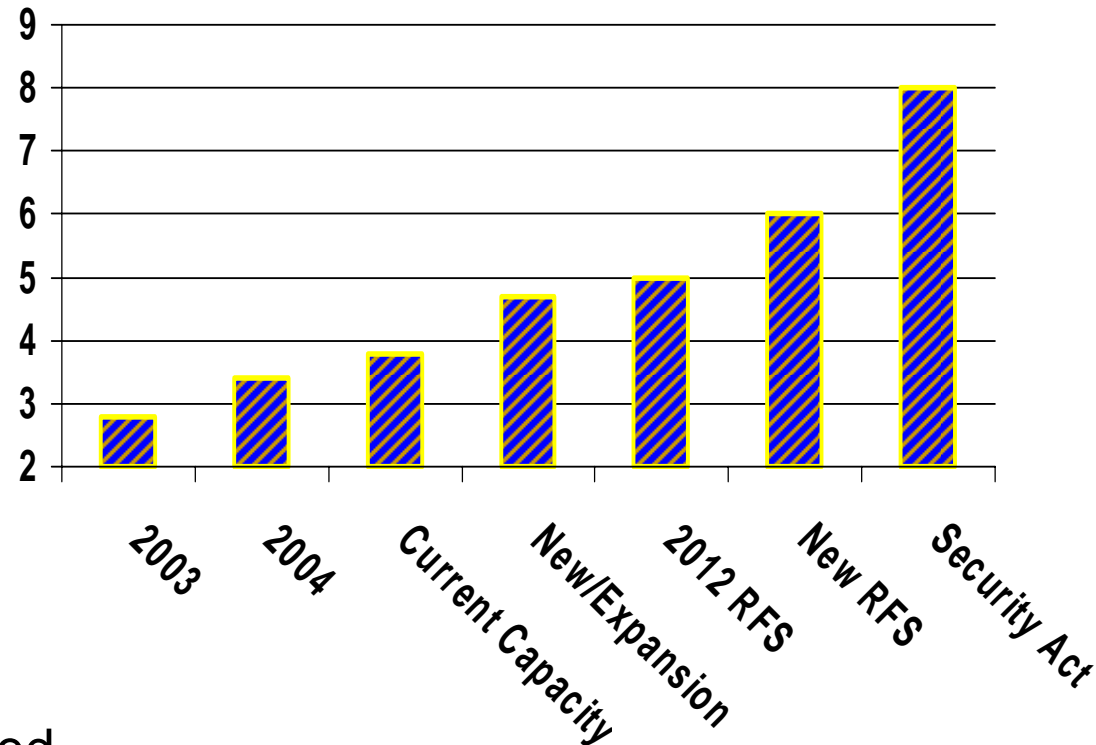
- Kansas

- Many other “considering” MTBE bans to protect drinking water supplies

Fuel Ethanol Capacity/Demand

United States

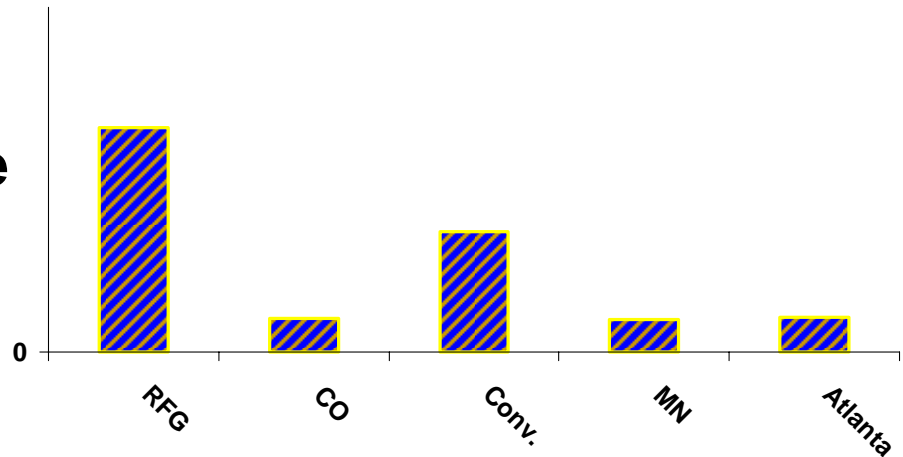
- 2003 – 2.804 Billion Gallons
- 2004 – 3.402 Billion Gallons
- Current Capacity – 3.800 Billion Gallons
- New/Expansions – 4.700 Billion Gallons
- 2012 RFS – proposed 5.0 Billion Gallons
- 2012 RFS(New) – Proposed 6.0 Billion Gallons
- Security Act – Proposed 8.0 Billion Gallons



2004 Fuel Ethanol Use

United States

- **Federal Reformulated Gasoline (RFG)**
1.950 Billion Gallons
- **Federal Winter Oxygenate Fuels**
0.290 Billion Gallons
- **Conventional Gasoline**
1.050 Billion Gallons
- **Minnesota Mandate**
0.280 Billion Gallons
- **Atlanta Mandate***
0.300 Billion Gallons

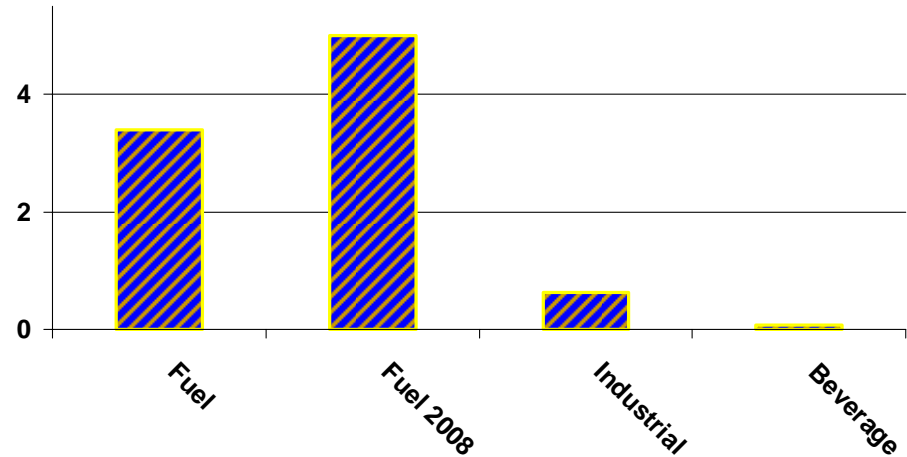


- 3.570 Billion Gallons current demand
- Atlanta demand - Fall 2005 “maybe”
- Conventional growth?

2004 Ethanol Demand

United States

- **3.4 billion gallons
Fuel EtOH – 2004**
- **5.0 billion gallons
Fuel EtOH – 2007?**
- **0.265 billion gallons
Industrial EtOH**
- **0.065 billion gallons
Beverage EtOH**

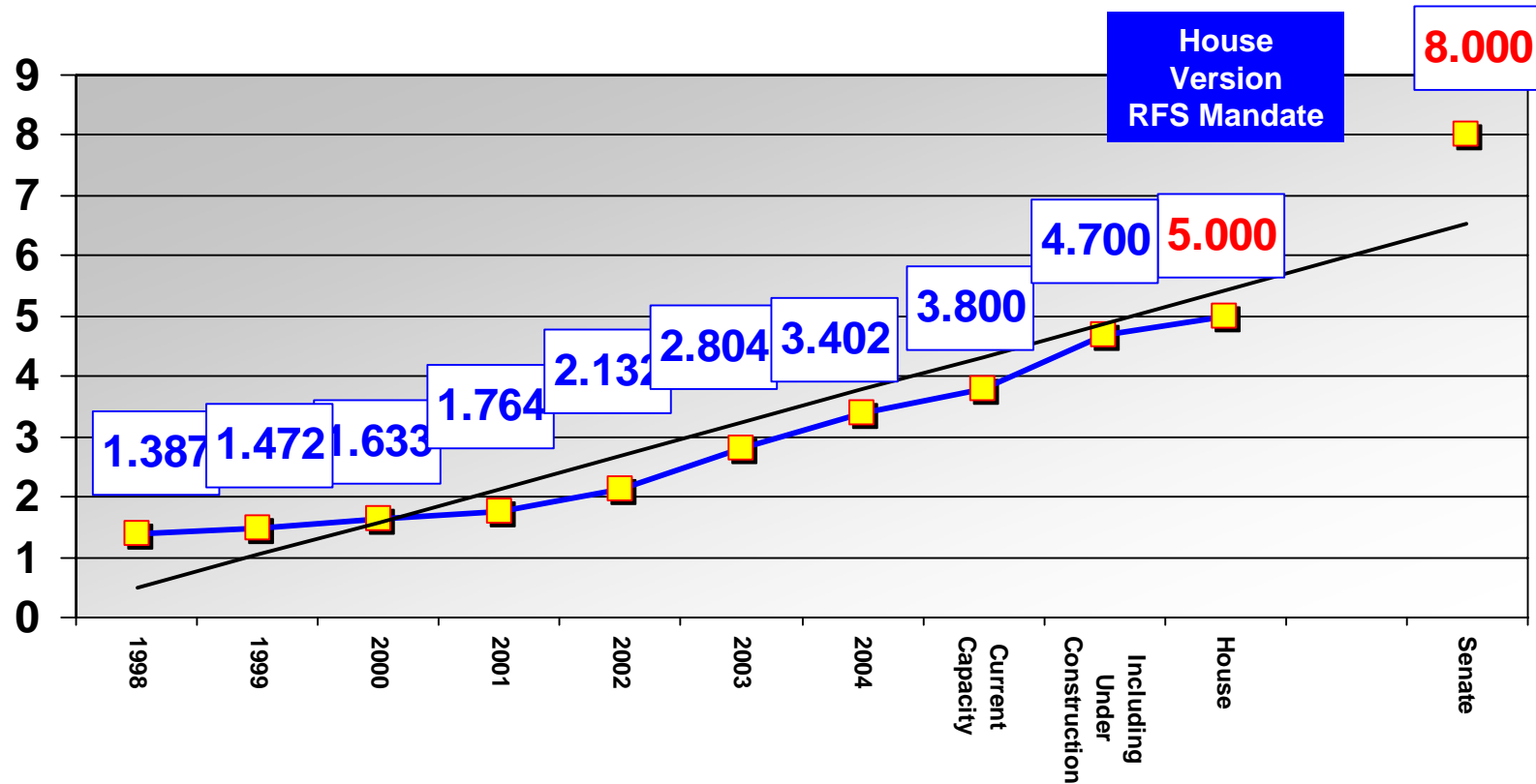


- Industrial ethanol is 7% of market
- Fuel ethanol is 91%
- Beverage is less than 2%

Fuel Ethanol

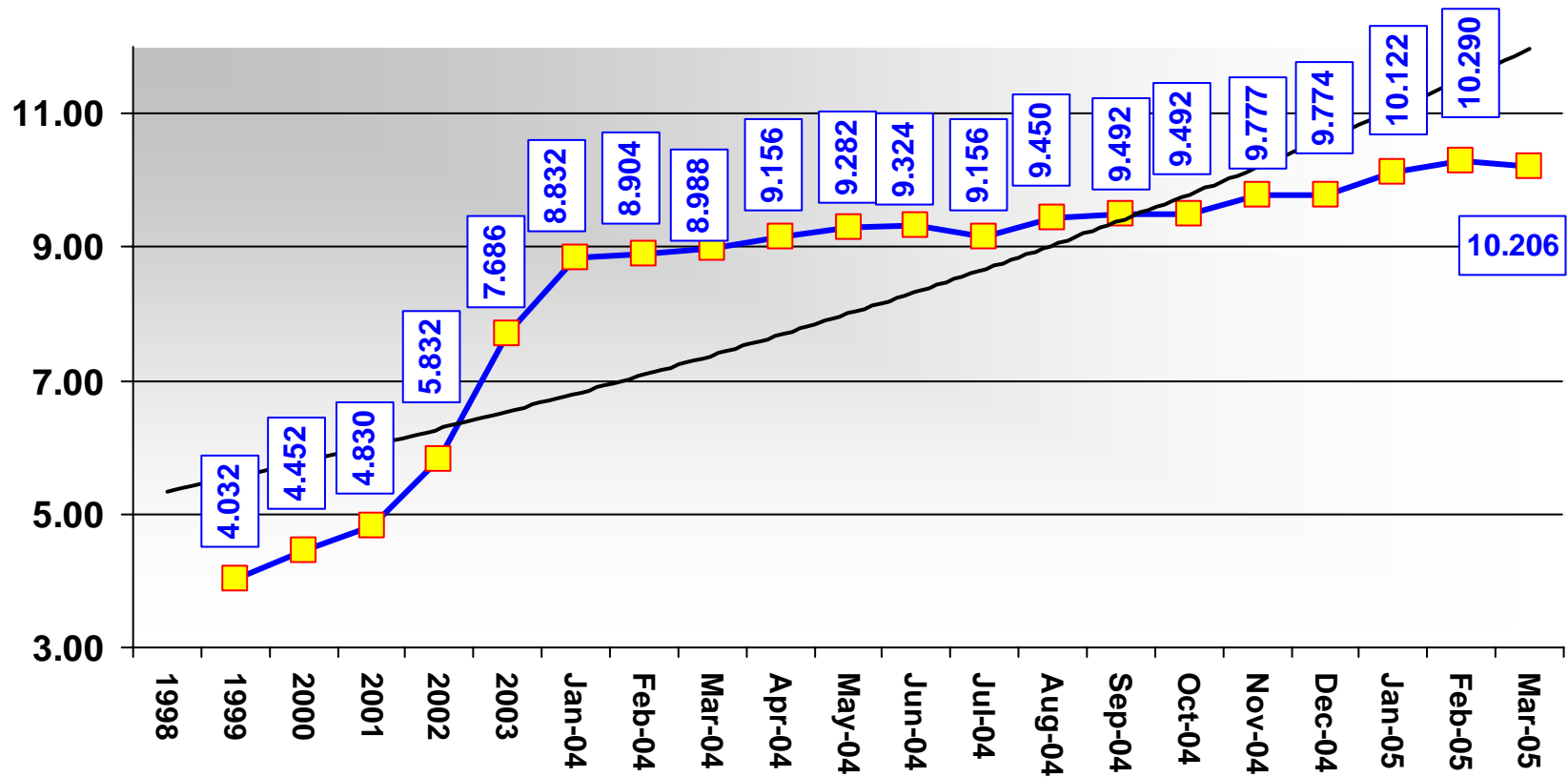
annual production, EIA, EthanolMarket.com, LLC
gallons (billions)

Senate Version
RFS Mandate



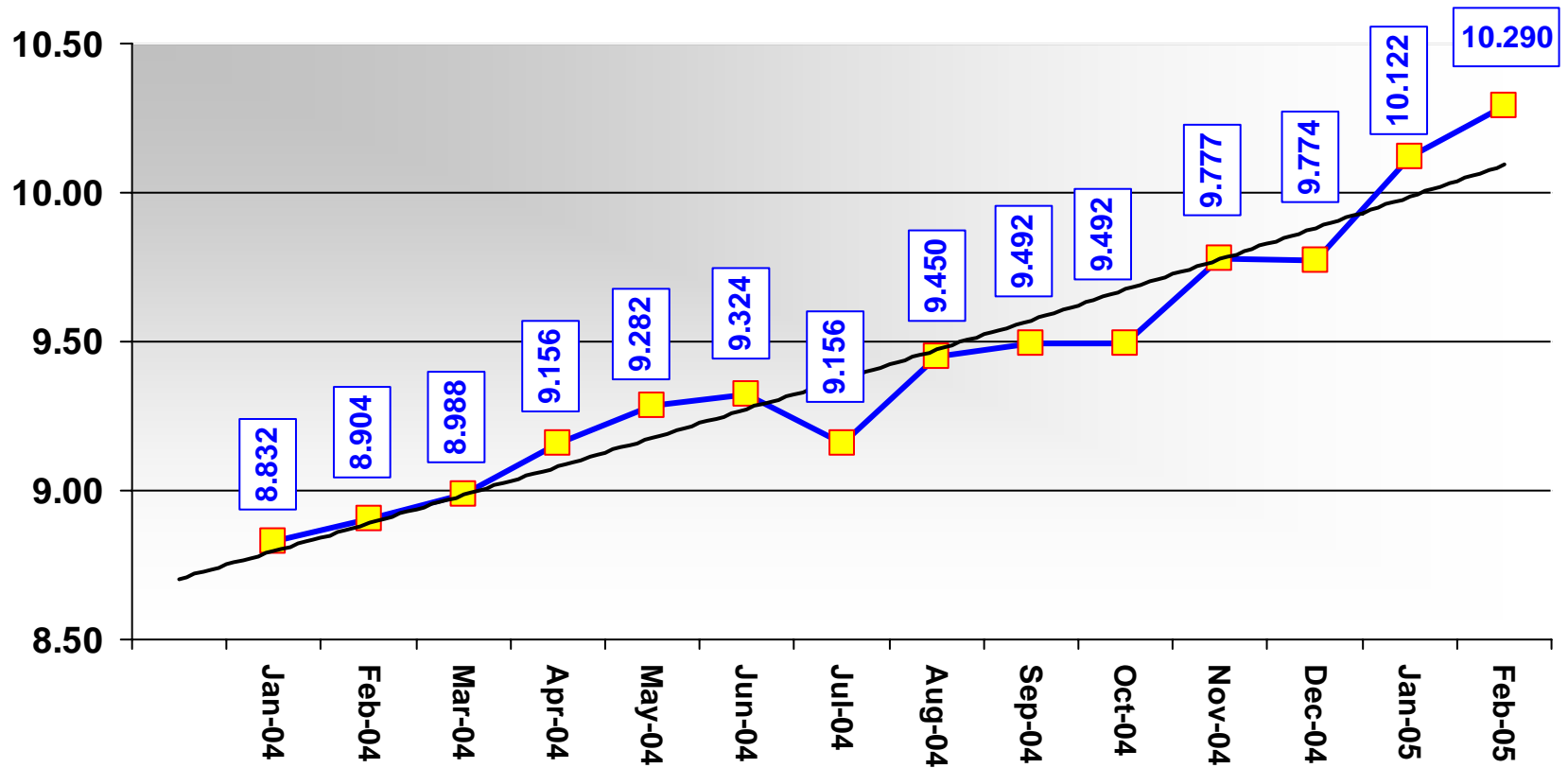
Fuel Ethanol

Monthly daily average production, EIA
United States, gallons (millions)



Fuel Ethanol

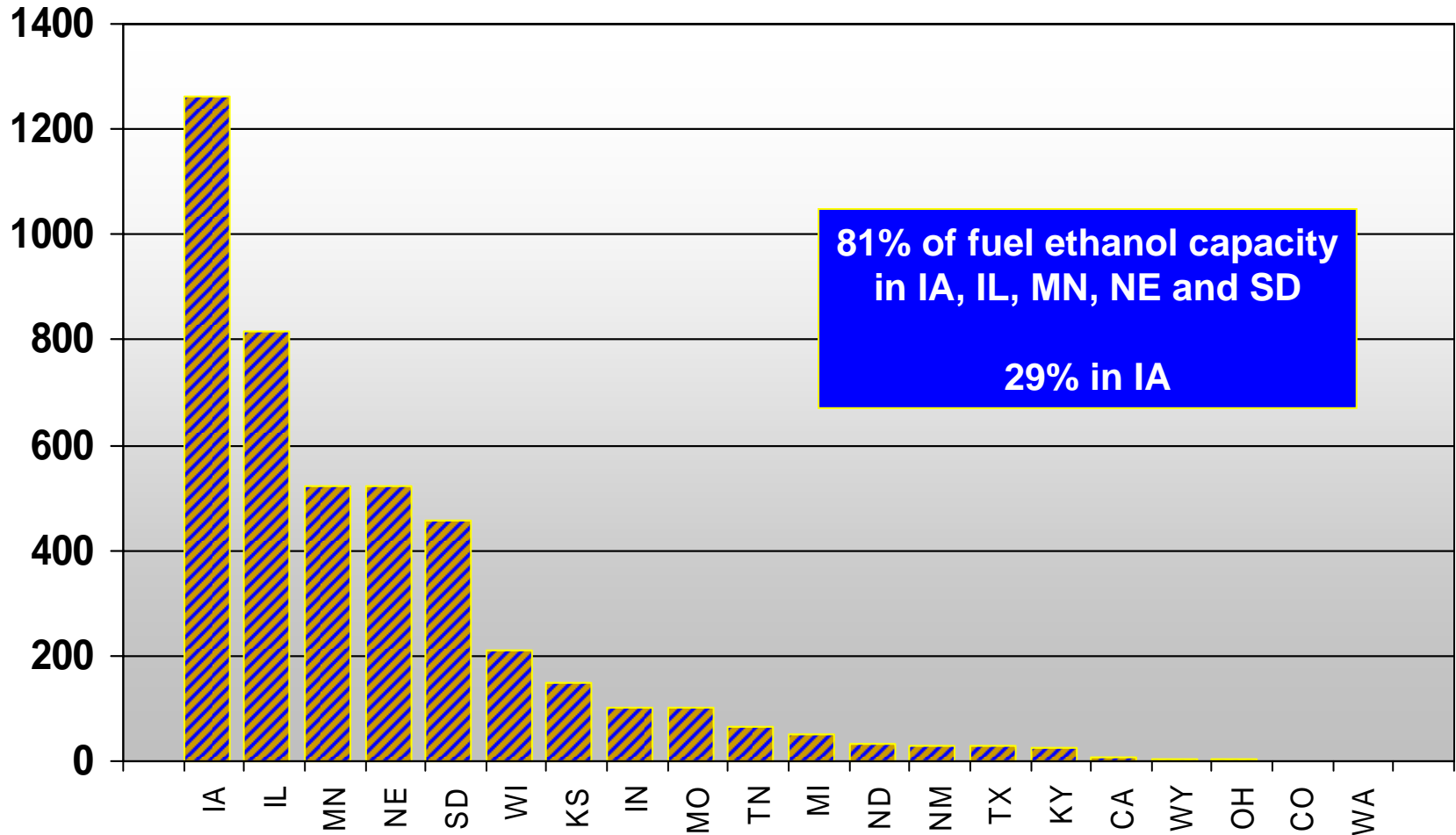
Monthly daily average production, EIA
United States, gallons (millions)



State Ethanol Production

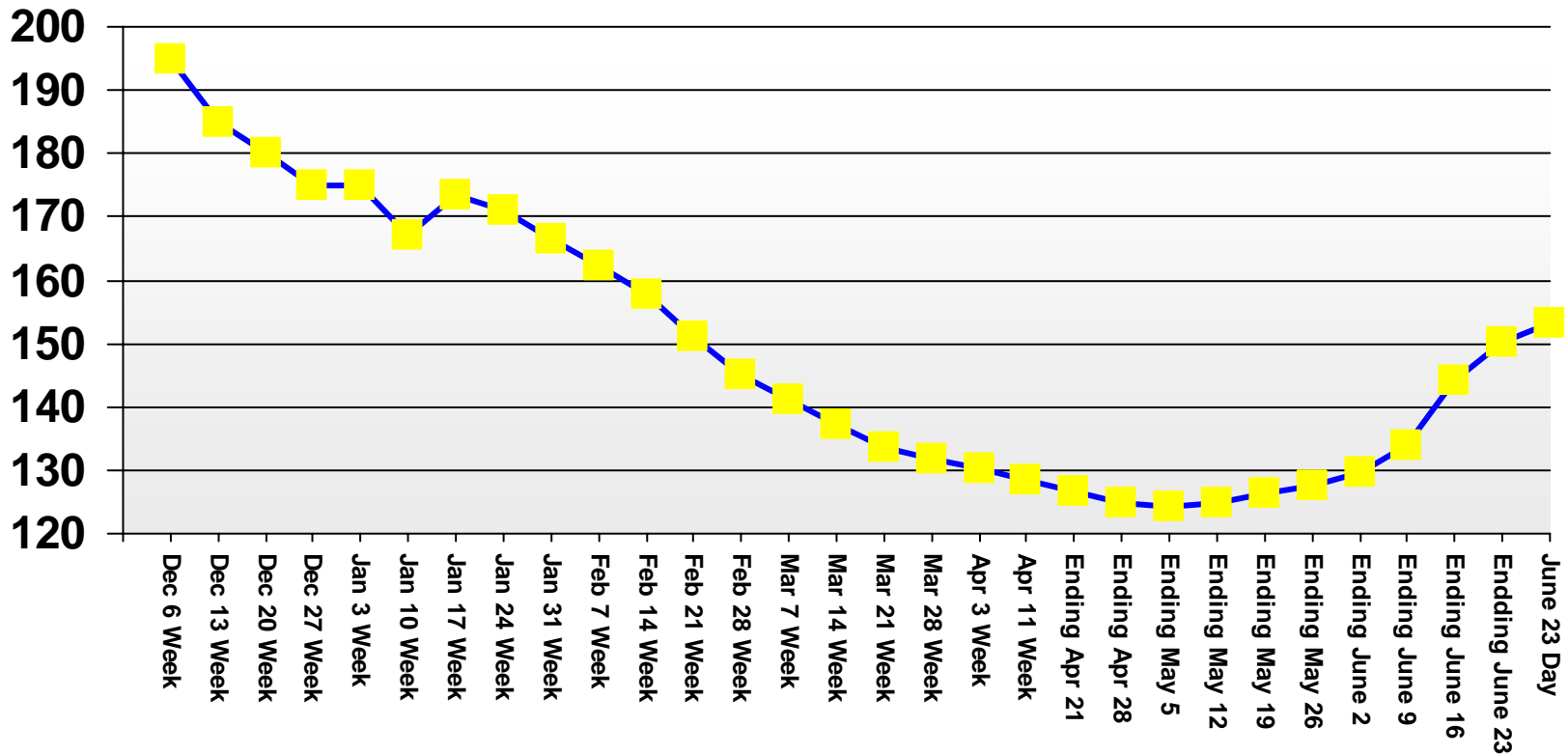
Million gallons per year

Source: RFA



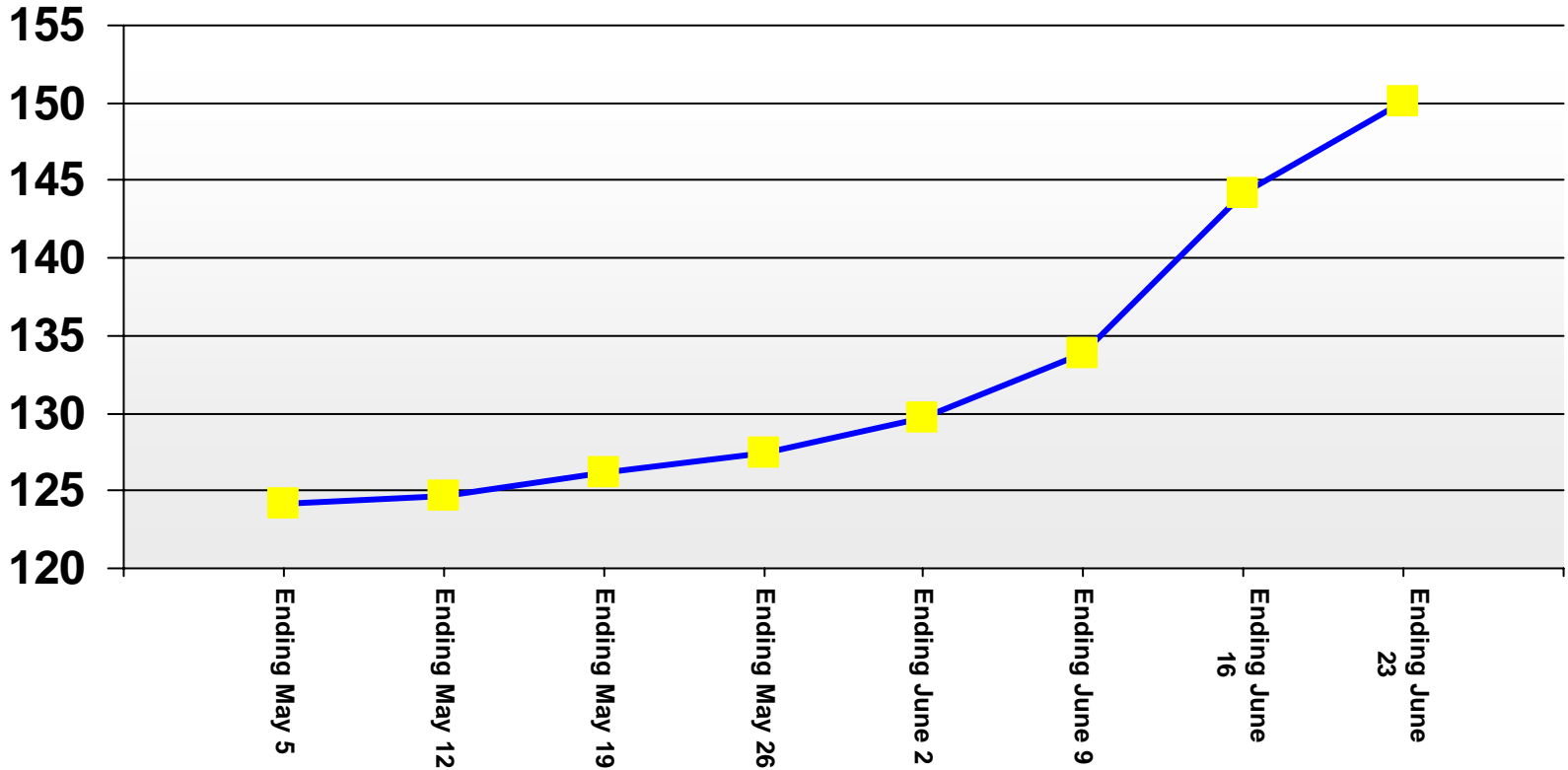
Rack Ethanol Prices

Weekly national price average, non-discounted rack fuel ethanol
cents per gallon, Industry Survey and Axxis Petroleum, www.axxispetro.com
Week runs Friday through Thursday



Rack Ethanol Prices

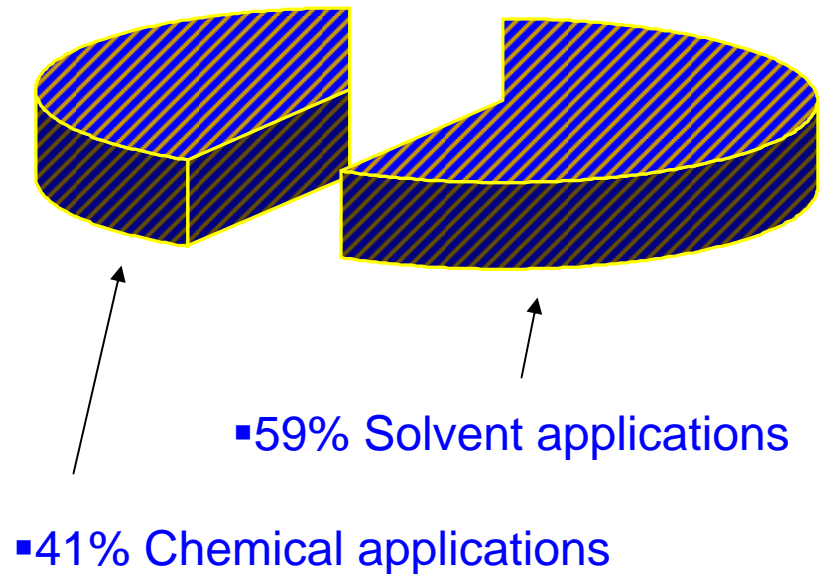
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Week runs Friday through Thursday



2004 Industrial Ethanol Demand

United States

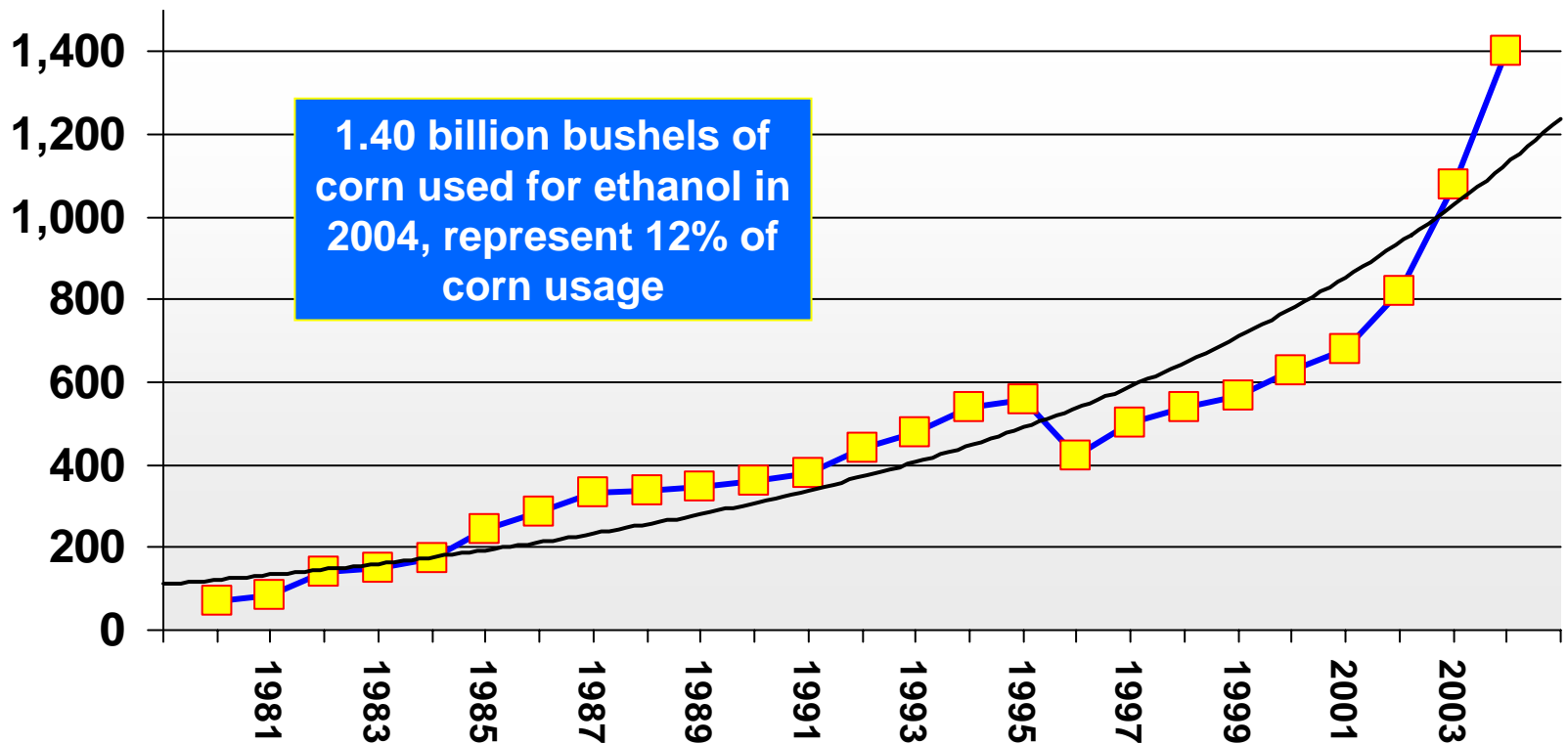
- **United States industrial demand - 265 million gallons**
- **7% of total United States ethanol market**
- **Very low growth**
- **18% synthetic supply**



Corn Utilization for Ethanol Production

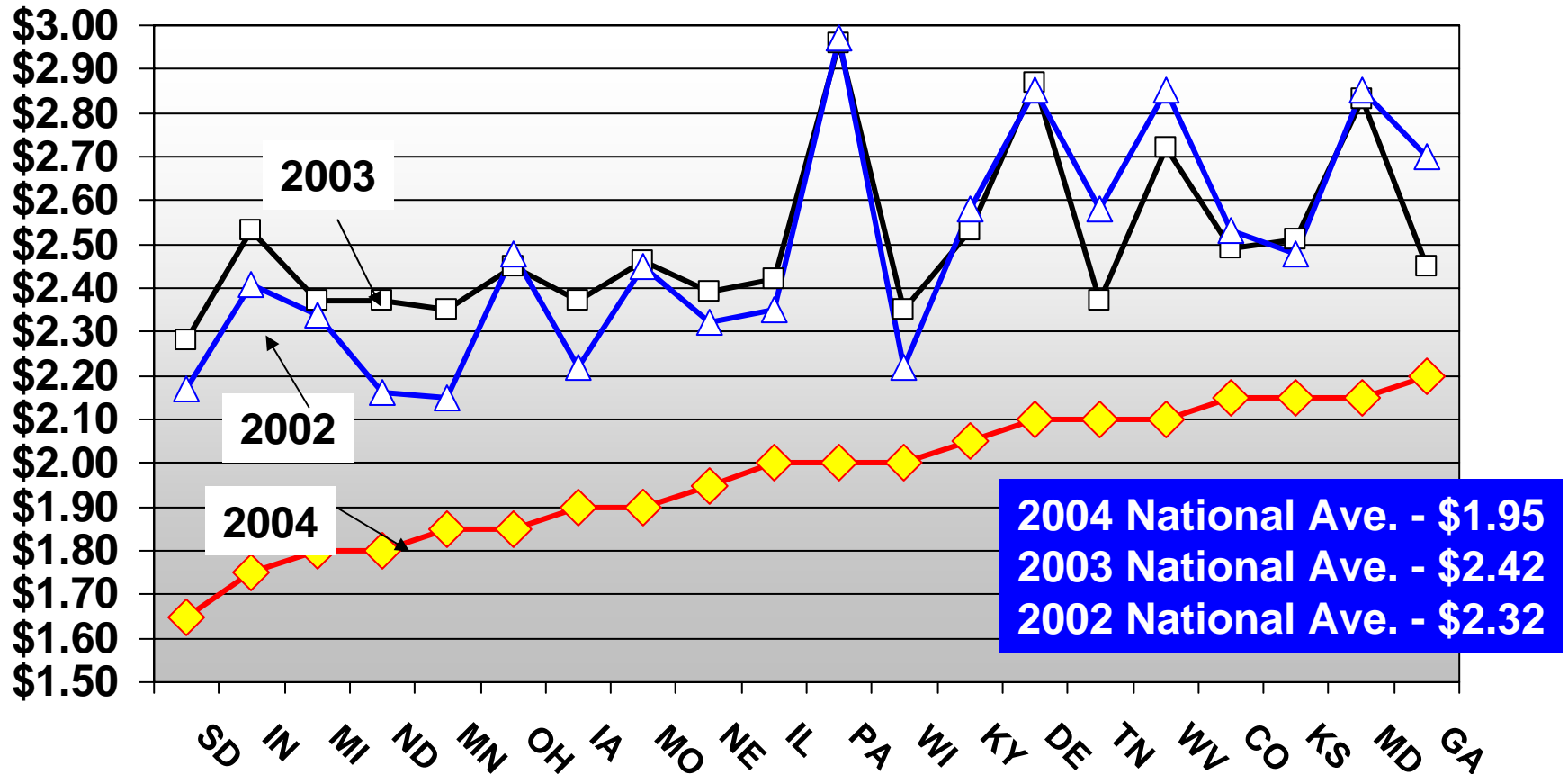
United States, millions of bushels

Source: USDA



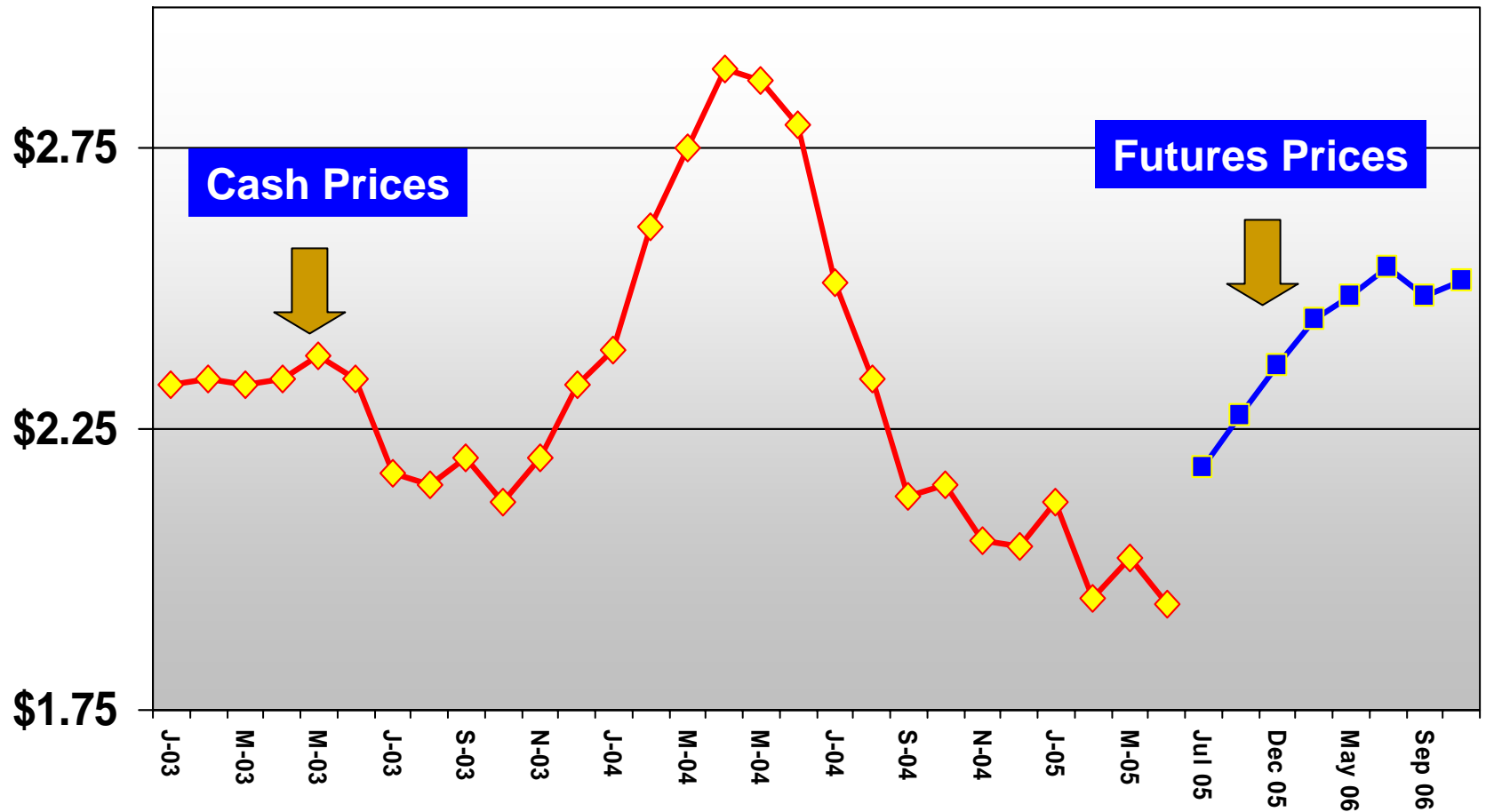
Corn

\$ per bushel, 2004 State Average
Sorted by 20 lowest States



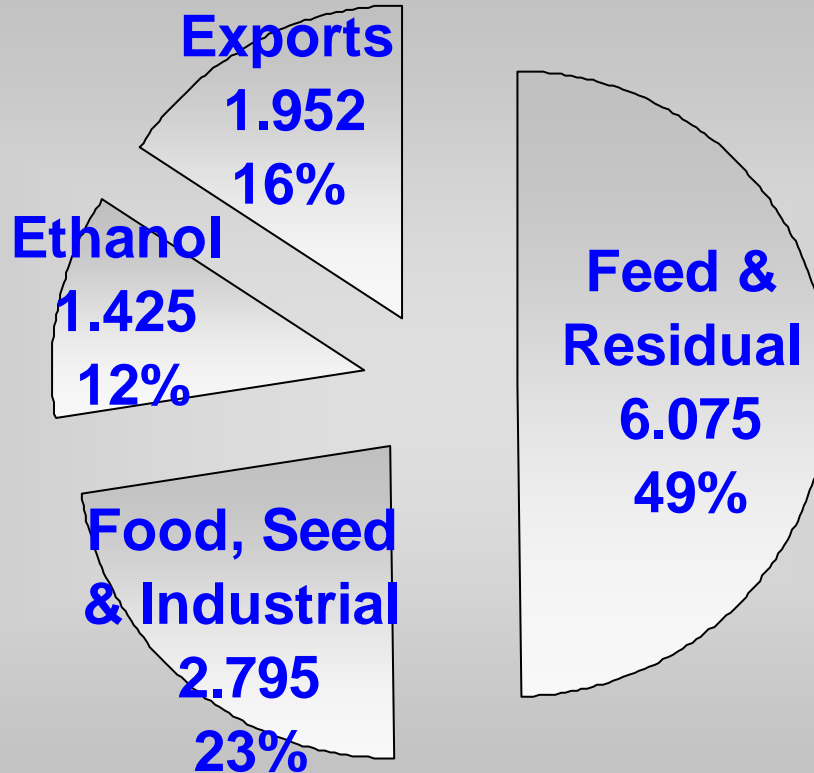
Corn

\$ per bushel, National Average



Corn

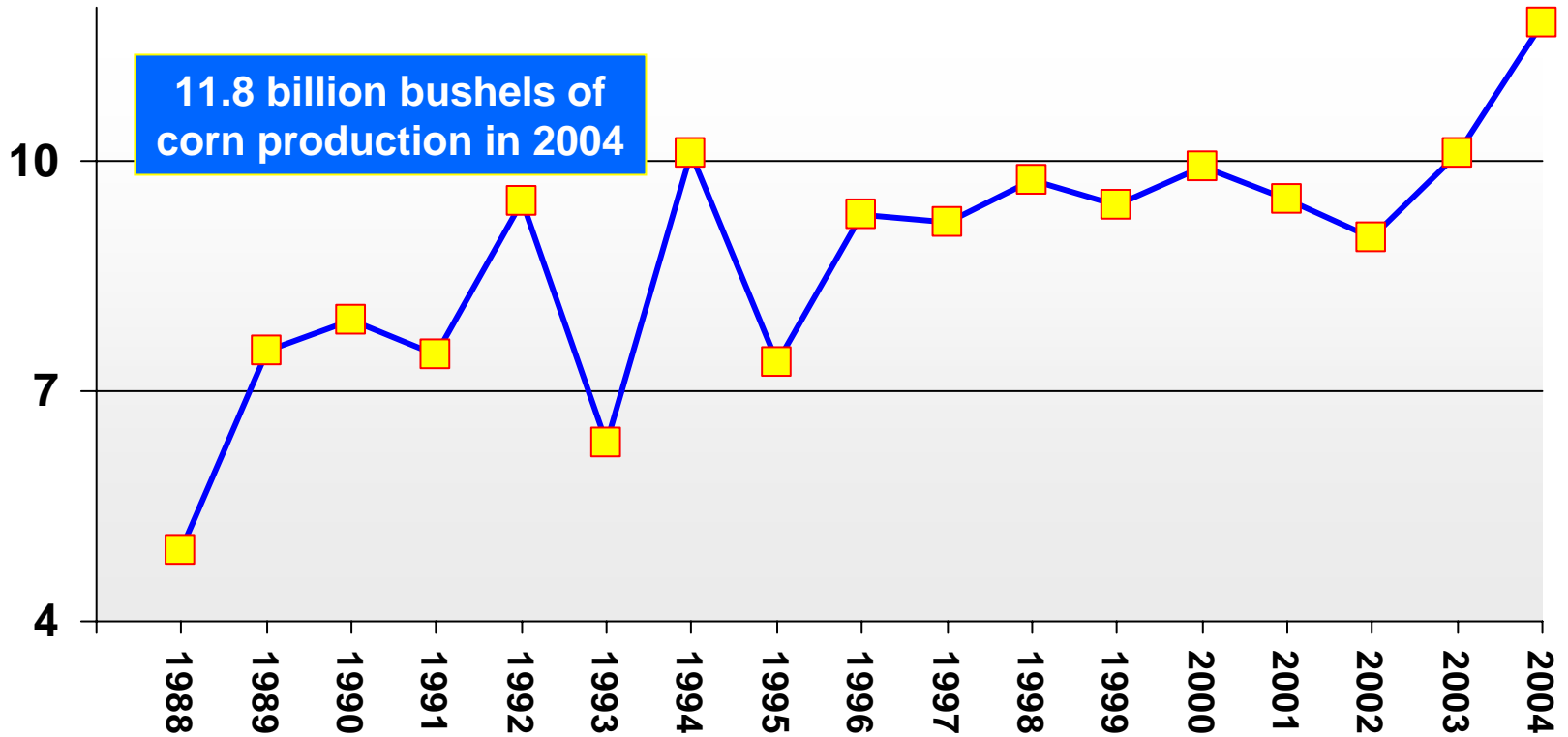
Usage, 2004/2005 projections, USDA
bushels (billions)



Corn Production

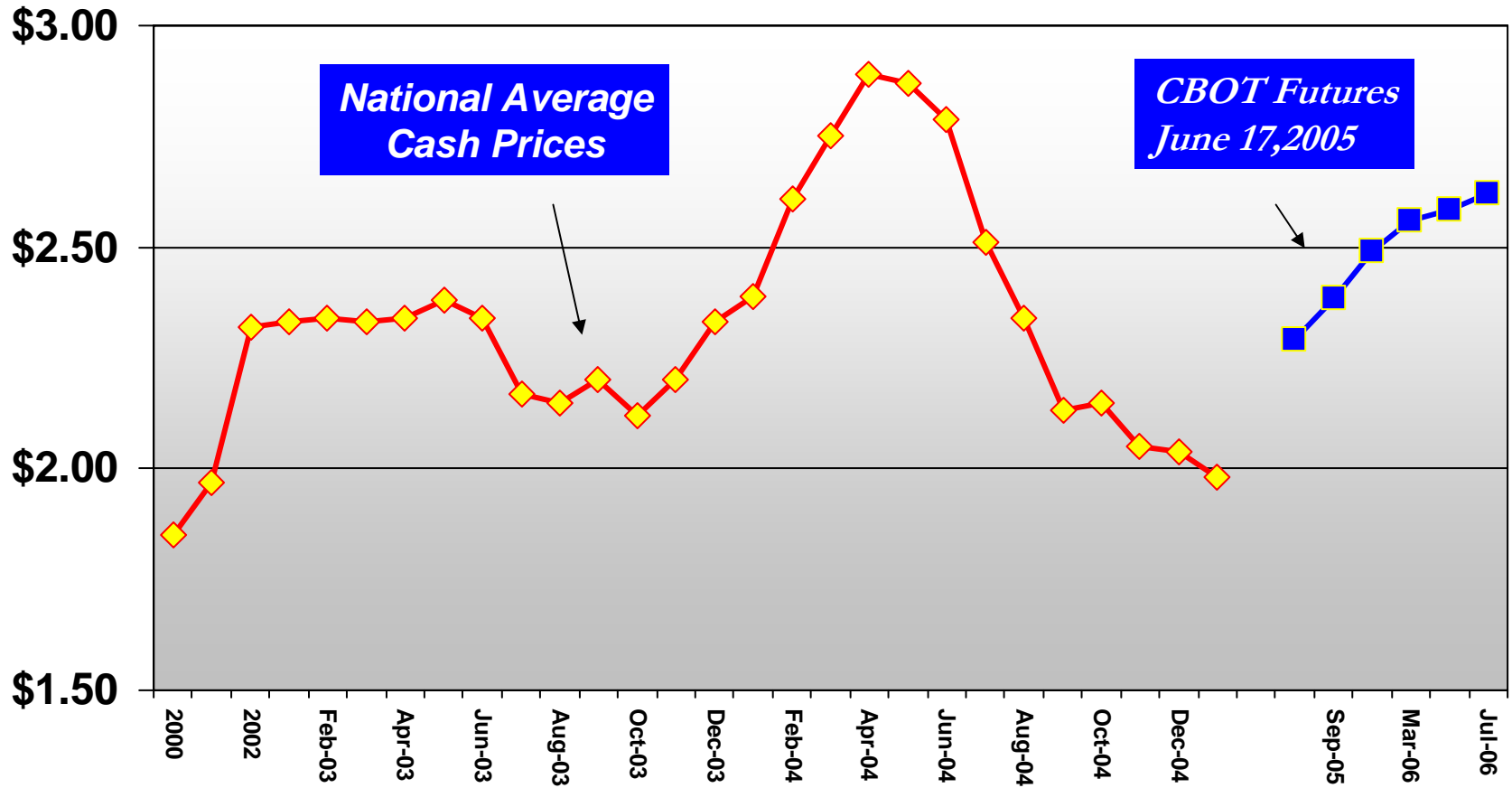
United States, millions of bushels

Source: USDA



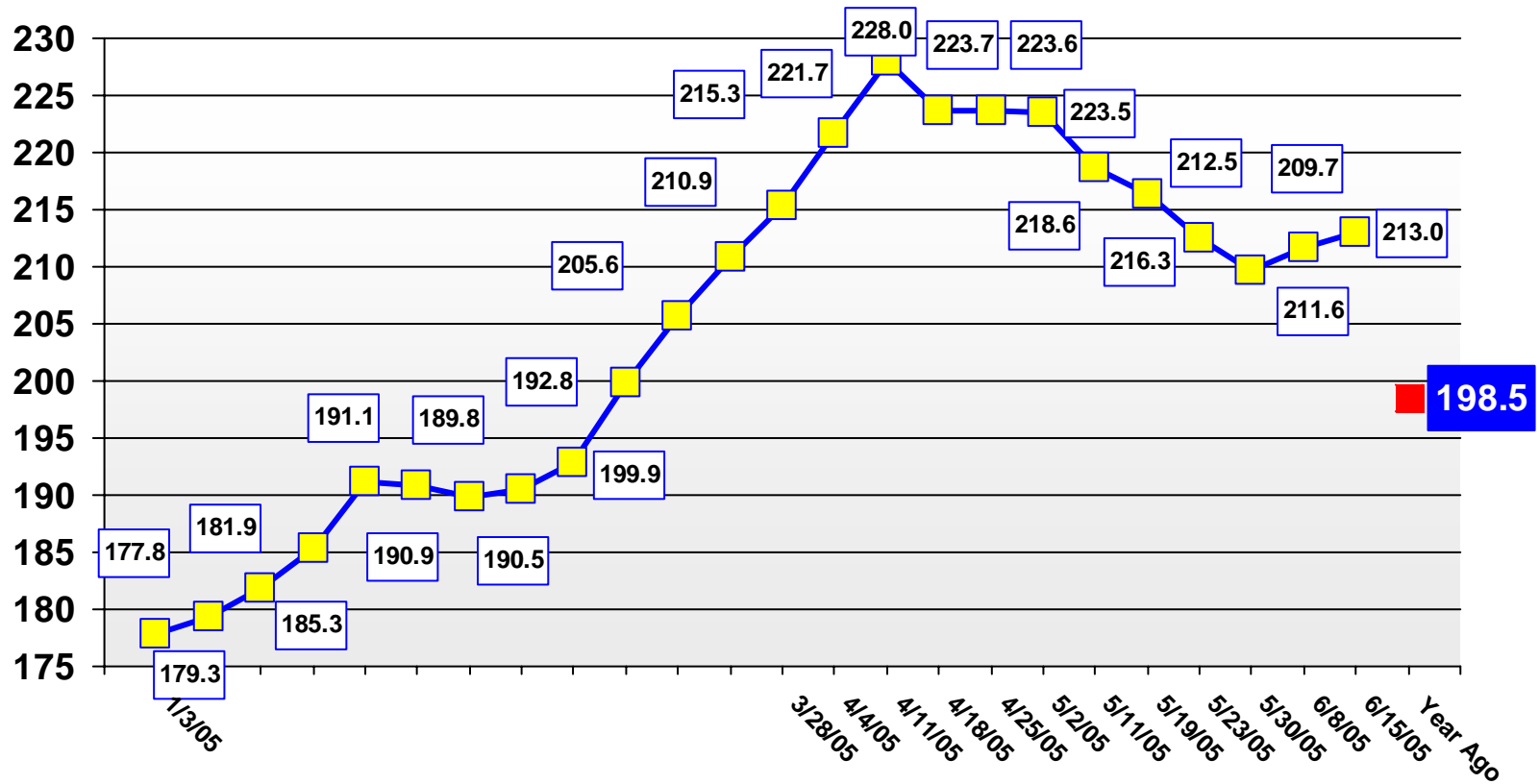
Corn

\$ per bushel, National Average
and CBOT Futures Price



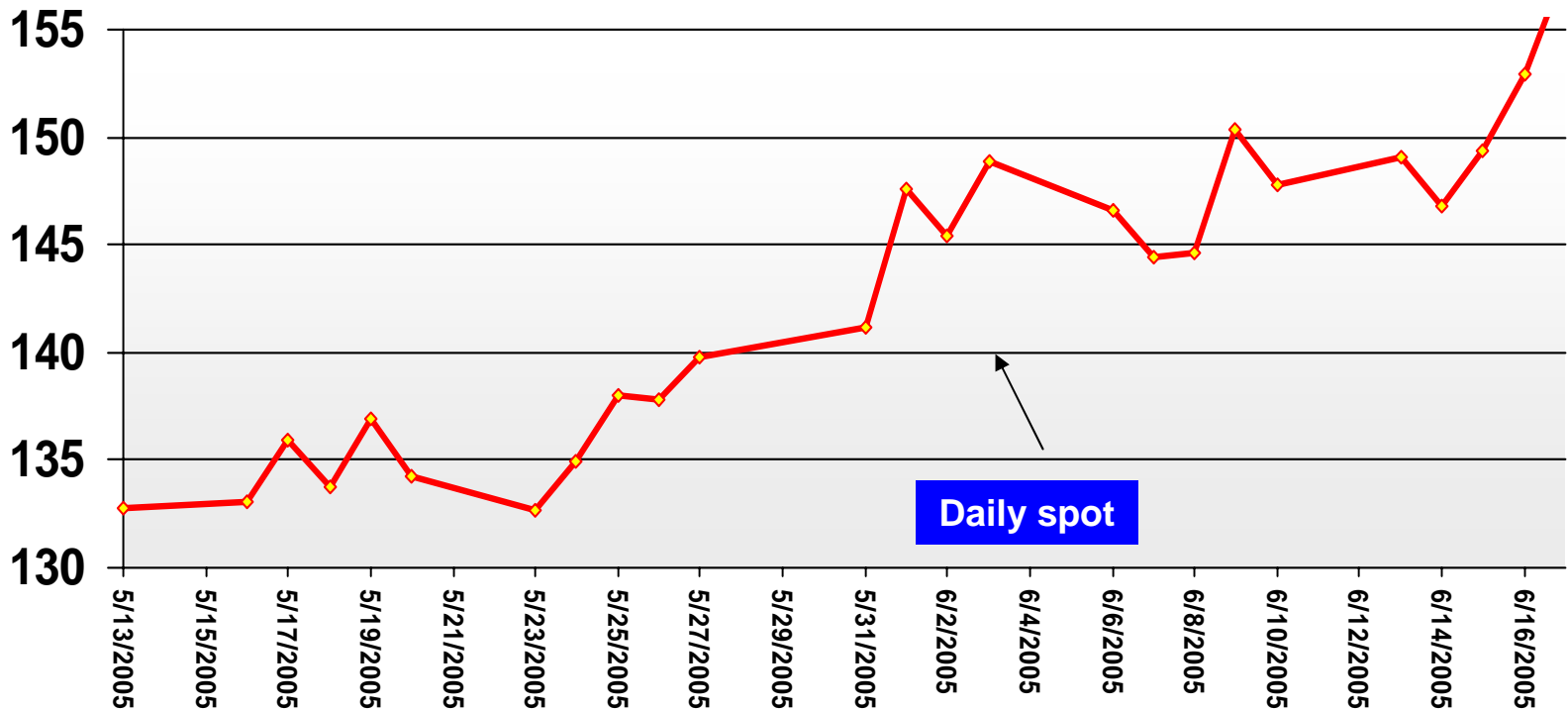
Gasoline

national price average, retail regular, EIA
cents per gallon, since January 3, 2005



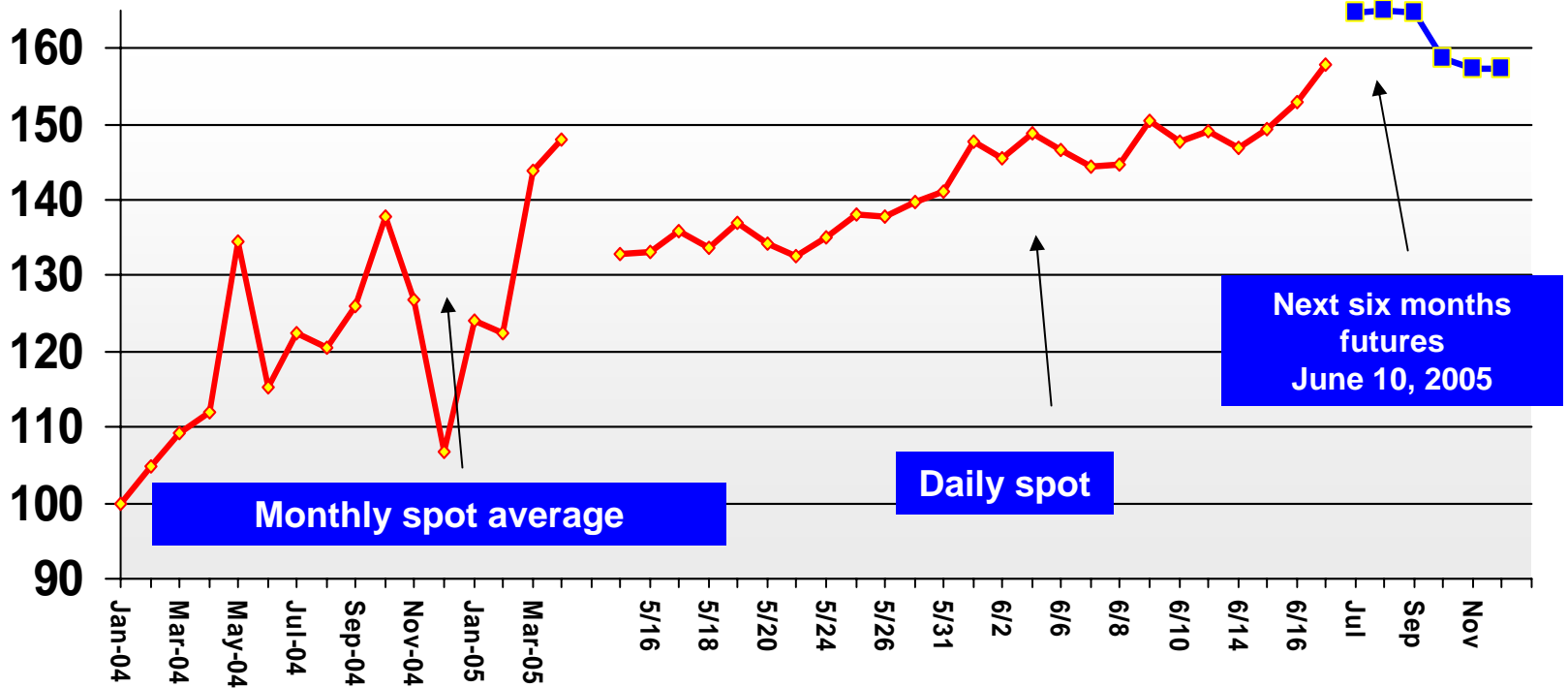
NYMEX Gasoline

Daily NYMEX Regular Gasoline Spot Prices (cpg)



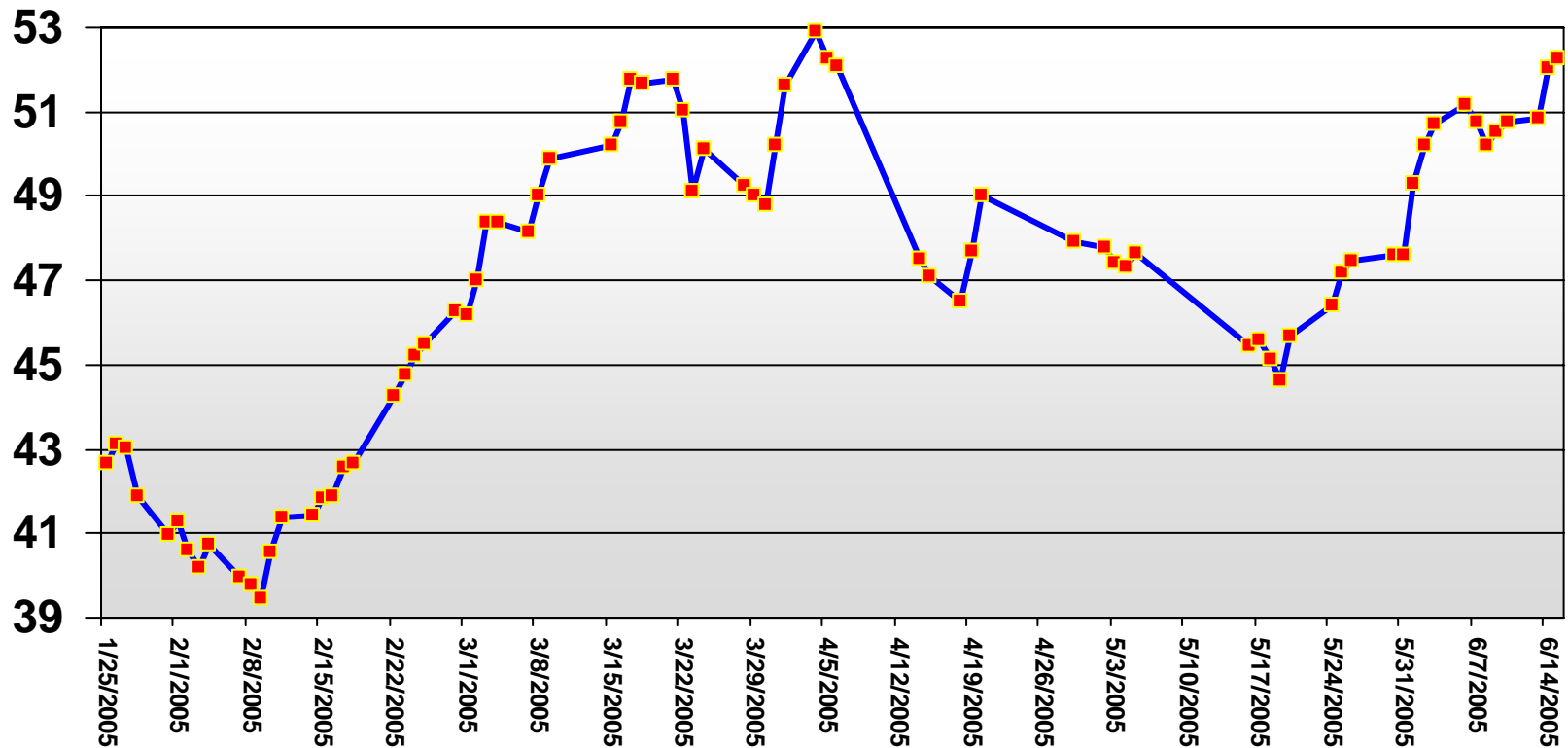
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Daily NYMEX Regular Gasoline Spot Prices (cpg), from January 2004



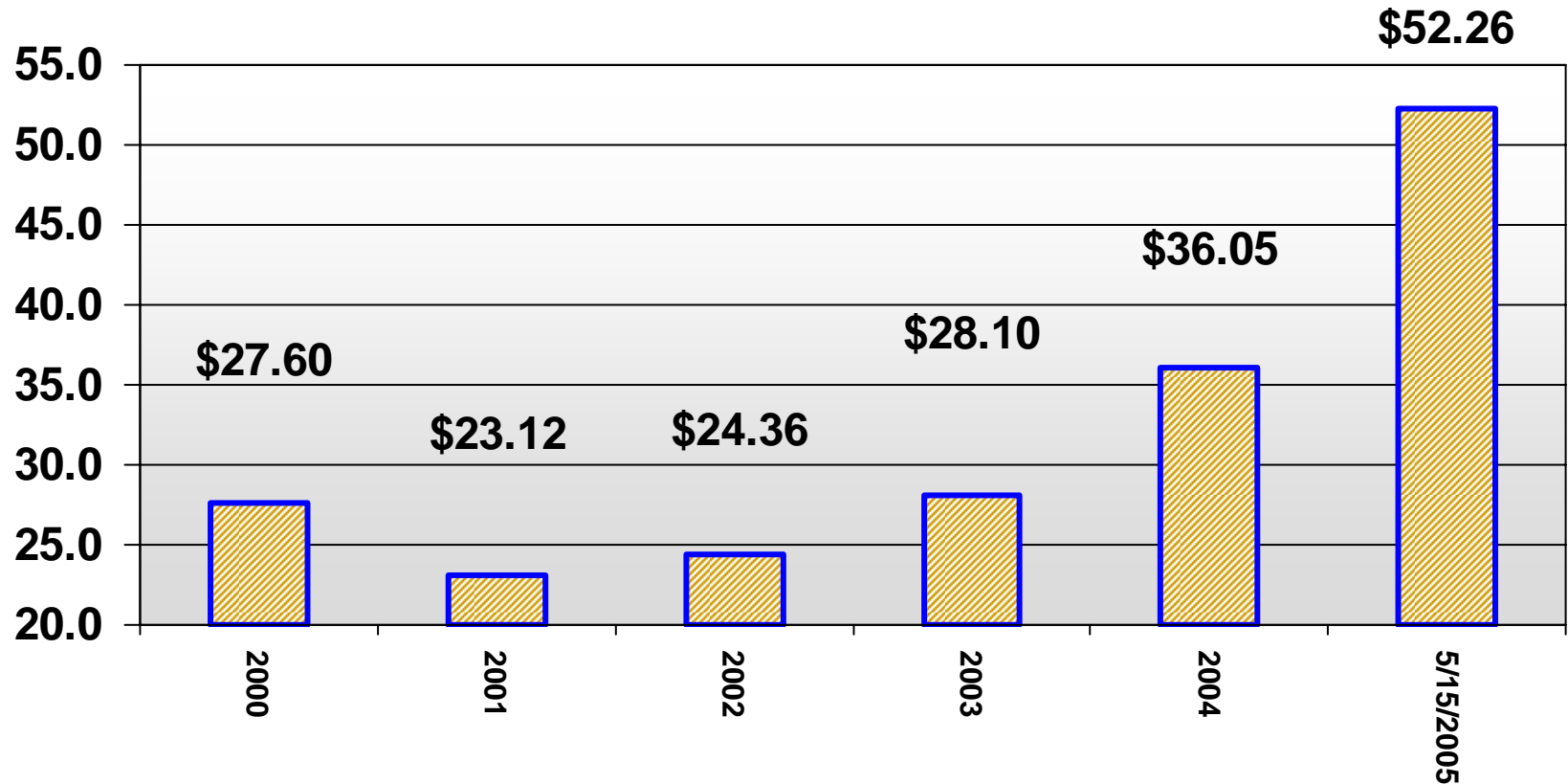
OPEC Market Basket Price

\$ per barrel, through June 15, 2005
since January 25, 2005



OPEC Market Basket Price

\$ per barrel



2005/2006

Ethanol market influences

- Continued high oil, natural gas and gasoline prices
- Increasing State MTBE bans
- Energy Bill
- State ethanol plans
- Saskatchewan increase to 7.5% ethanol
- Manitoba 10% ethanol by end of 2005
- Atlanta Implementation
Fall 2005? 300 million gallons

2005/2006

Ethanol market influences

- Decreased Brazilian fuel ethanol imports, slight increase for industrial. Increased Brazilian exports to Europe, China and Japan. Watch for the World scramble for biofuels, especially China and Japan
- Increasing corn prices
- Increasing fuel ethanol capacity
- Fuel ethanol industry consolidation
- Fuel ethanol weakness spring 2005, correcting / stabilizing during the summer, and pressure again by late fall 2005
- Stable industrial ethanol market, becoming a “specialty” market

The Future

EthanolMarket.com, LLC's view

- **60% to 70% of an ethanol plants operating cost are commodity inputs, corn and natural gas.**
- **Record corn crop last year produced lower forward and cash prices. Recent futures(6/23/05) markets have corn in the \$2.25 to \$2.60 range for the next seven contracts. Ethanol utilized 13% of the United States corn during the last crop year. Increased ethanol demand will increase corn demand**
- **Natural gas will stay high, perhaps averaging over \$7.00MMBtu for the next year. Current futures (6/23/05) are all in the low \$7.00 to high \$8.00 range**

The Future

EthanolMarket.com, LLC's view

- **Plants/businesses will need to counter the commodity price risk (high corn, high natural gas, low ethanol, low DDGS) with an effective commodity price risk management program to protect margins and manage the input costs, the cost of corn and natural gas, with either forward cash markets, futures and options or other derivative products**
- **The businesses that effectively manage risk, will be stronger than those that choose to manage prices**

The Future

EthanolMarket.com, LLC's view

- **The oil industry has been reluctant to “embrace” ethanol, limiting growth**
- **Independent marketers will push for more ethanol to take advantage of blend economics, and discretionary gallons will increase into non-traditional gallon in 2005**
- **Overall, State and Federal policy will provide direction for the ethanol market, based on Renewable Fuels, Energy Security, and MTBE bans**

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