

Challenges and Opportunities Facing the Ethanol Industry



Brian Jennings, ACE Executive Vice President, May 13, 2009

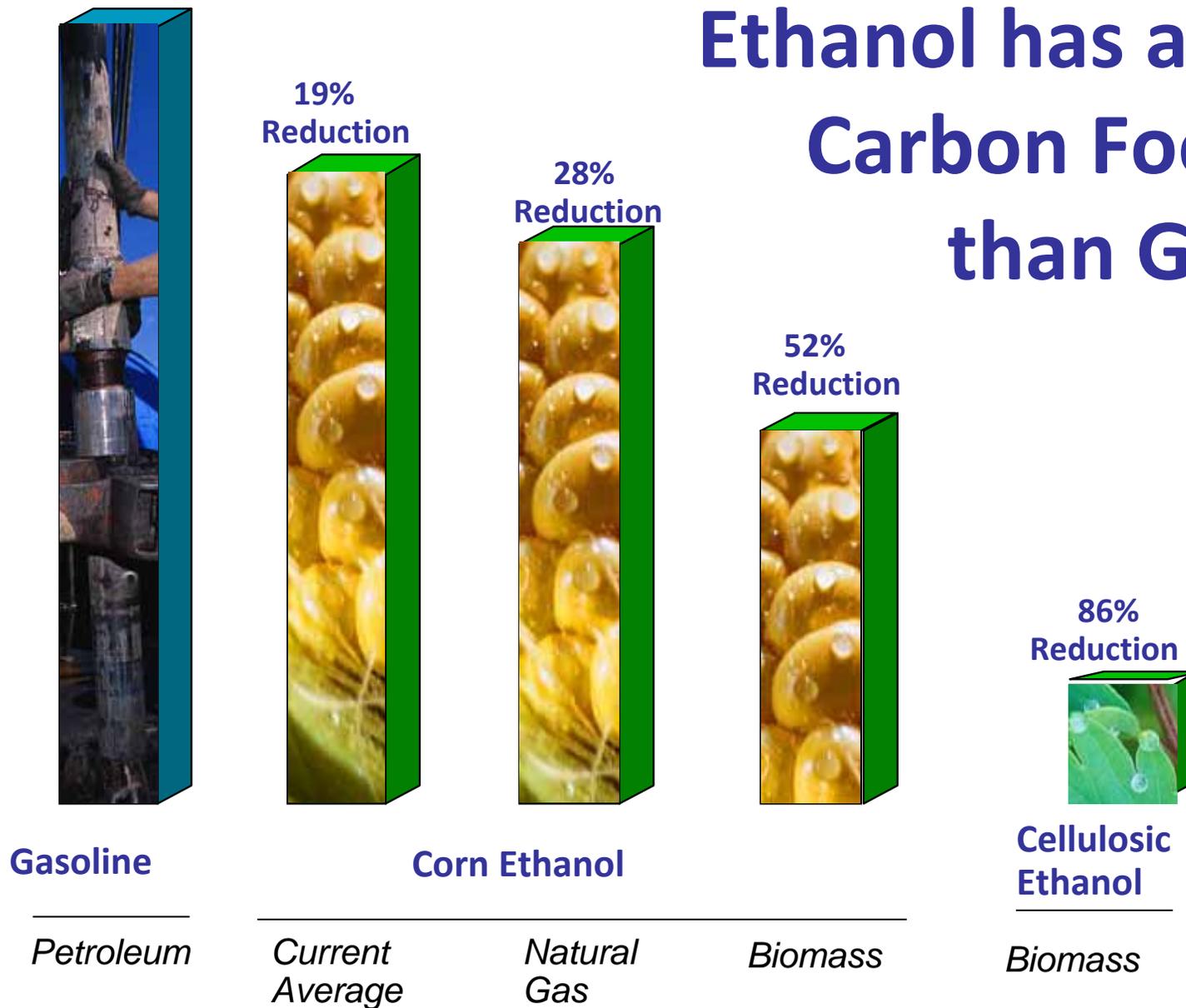
Challenges facing ethanol

- Blend wall
- Brutal market volatility
- Shutdowns, idle plants, etc
- Bank financing/credit evaporated
- PR attacks designed to destroy reputation of ethanol and erode policy support
 - Food vs. Fuel, Corn vs. Cellulose, carbon footprint, water footprint

Opportunities for ethanol

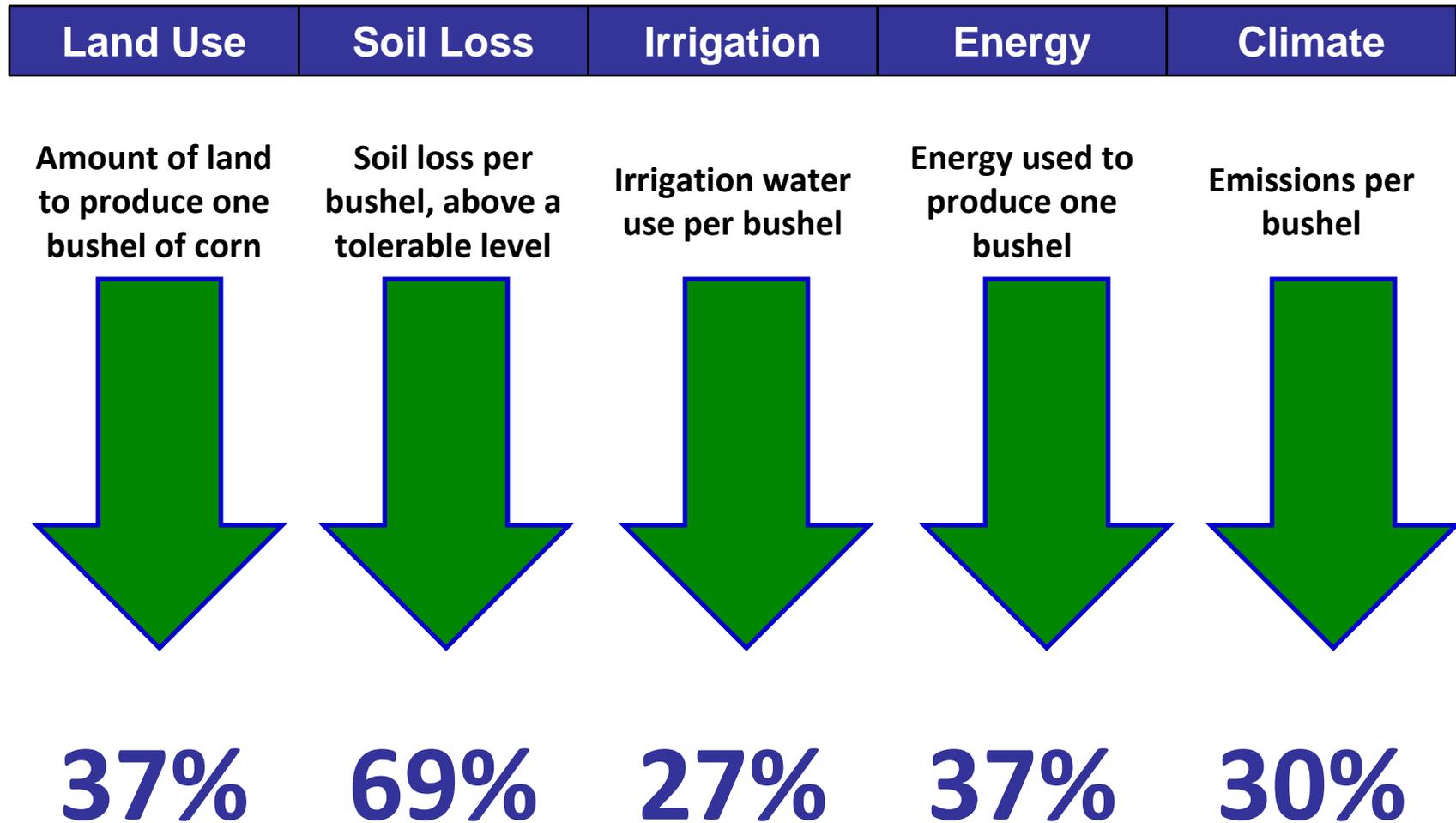
- Blends beyond E10
- Blender Pumps
- Flexible Fuel Vehicles
- Climate Change legislation/policy
- Existing federal/state policies
- Technology innovations
- The end of easy/cheap oil
- Corn and corn ethanol getting better every day
- Cellulosic ethanol

Ethanol has a Lower Carbon Footprint than Gasoline



Sources: Wang et al, *Environ. Research Letters*, May 2007; Wang et al, *Life-Cycle Energy Use and GHG Implications of Brazilian Sugarcane Ethanol Simulated with GREET Model*, Dec. 2007.

Corn Sustainability Improvements 1987-2007

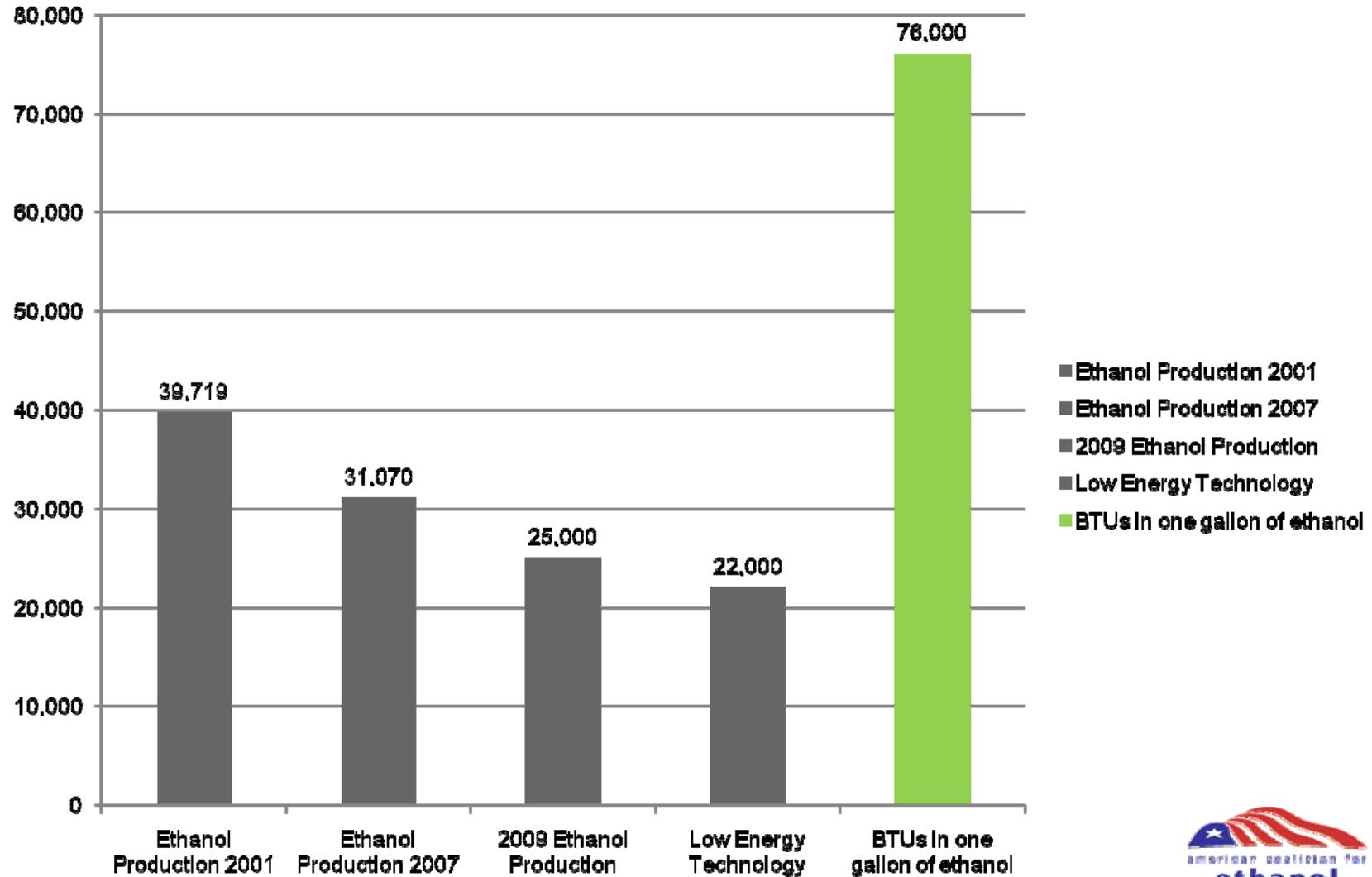


Source: Field to Market



Ethanol Production Getting More Efficient

Energy Use (BTUs)



Sustainable, Efficient Corn Ethanol



“Improvements in LCA GHG Emissions of Corn Ethanol”
Liska et al – Journal of Industrial Ecology – Feb 09

- “Net energy ratio values from 1.29 to 2.23”
- “Corn-ethanol systems reduced GHG emissions by 48% to 59% compared to gasoline, which has a GHG intensity of 92 gCO₂e MJ.”



RFS2: 4 Volume Categories based on LCA

Year	Conventional Biofuels (Grandfathered or 20% Reduction)	Advanced Biofuel				Total Renewable Fuel
		Biomass-Based Diesel (50% Reduction)	Non Cellulosic Advanced (50% Reduction)	Cellulosic Biofuel (60% Reduction)	Total Advanced Biofuel	
2006	4.00					4.0
2007	7.70					4.7
2008	9.00					9.0
2009	10.50	0.5	0.1		0.6	11.1
2010	12.00	0.65	0.2	0.1	0.95	12.95
2011	12.60	0.80	0.3	0.25	1.35	13.95
2012	13.20	1.0	0.5	0.5	2.0	15.2
2013	13.80	1.0	0.75	1.0	2.75	16.55
2014	14.50	1.0	1.00	1.75	3.75	18.15
2015	15.00	1.0	1.50	3.0	5.5	20.5
2016	15.00	1.0	2.00	4.25	7.25	22.25
2017	15.00	1.0	2.50	5.5	9.0	24.0
2018	15.00	1.0	3.00	7.0	11.0	26.0
2019	15.00	1.0	3.50	8.5	13.0	28.0
2020	15.00	1.0	3.50	10.5	15.0	30.0
2021	15.00	1.0	3.50	13.5	18.0	33.0
2022	15.00	1.0	4.00	16.0	21.0	36.0

Source: EPA

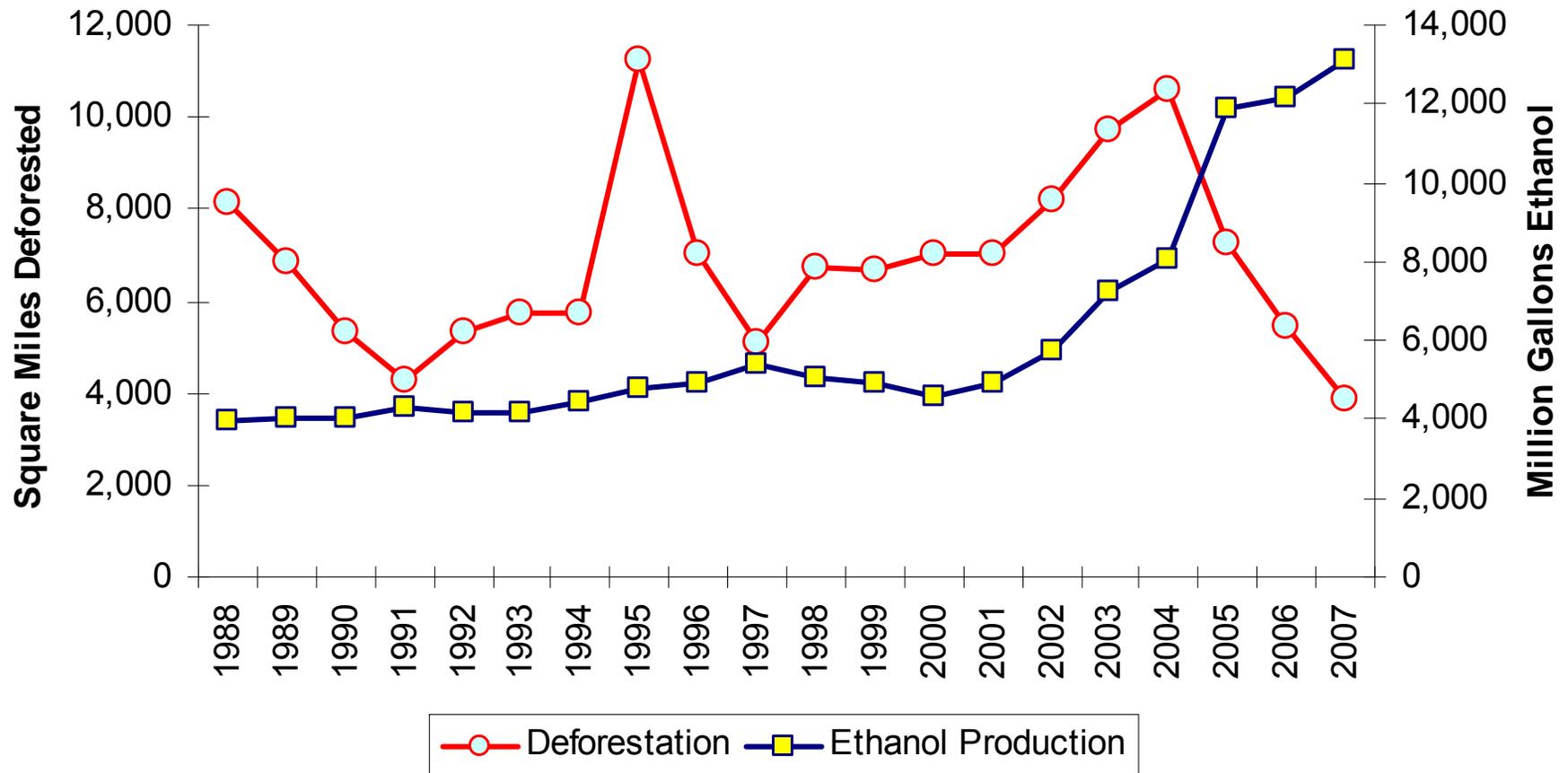


Indirect Effects – “Land Use Change”

- Untested and unreliable computer generated predictions.
- Policy ahead of science.
- Biased. Being selectively enforced against biofuels but not other fuels.
- Ignores fact that availability of distillers reduces need to expand global crop base. Also largely ignores crop yield increases.
- Seems to be anti-ag driven.
- Have practical effect of disqualifying clean fuels from low carbon programs.

Amazon Deforestation on Decline while Biofuels Production on the Rise

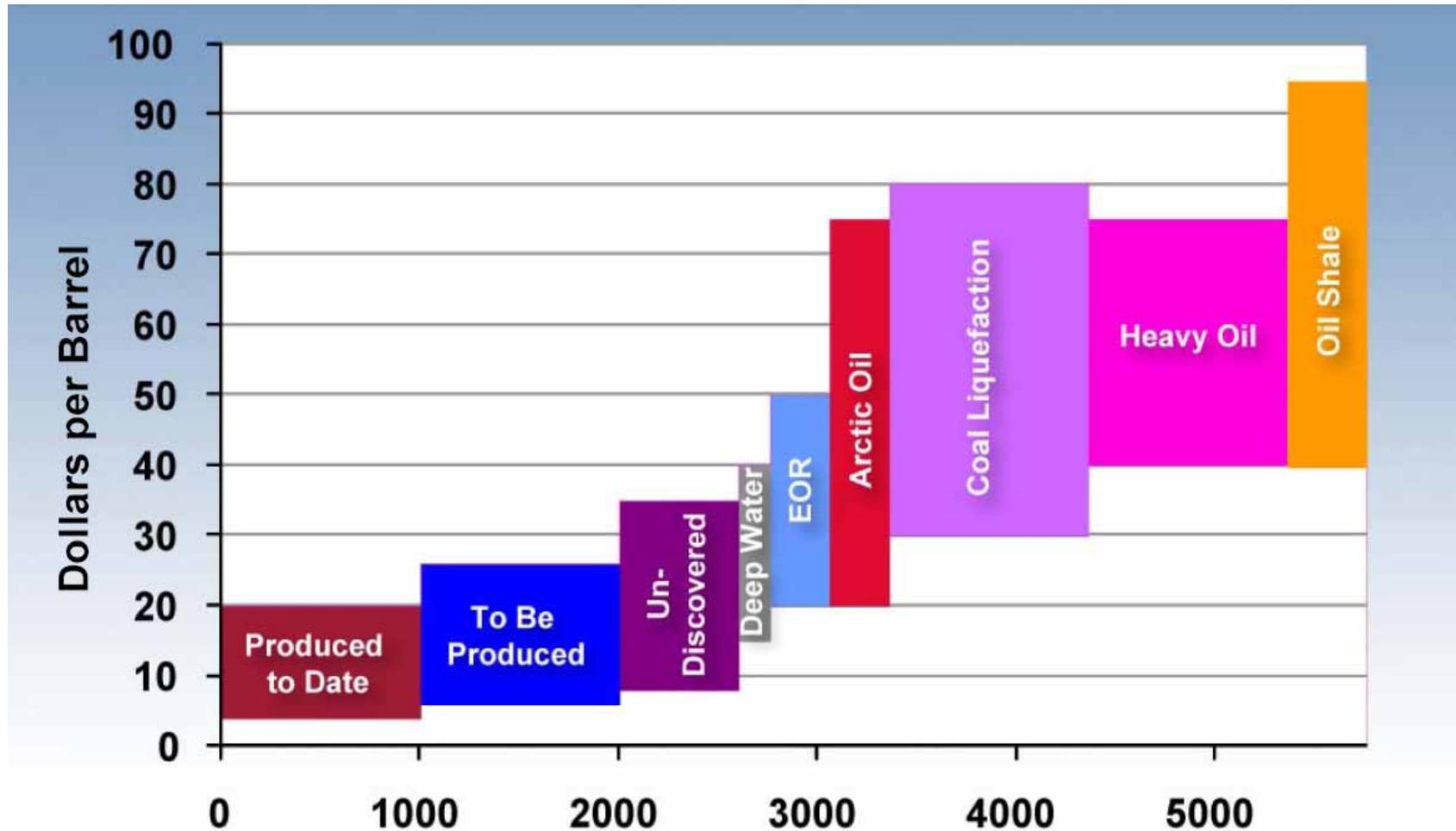
Brazilian Deforestation and Global Ethanol Production



Source: IEA; Butler, Mongabay.com (FAO, NISR)



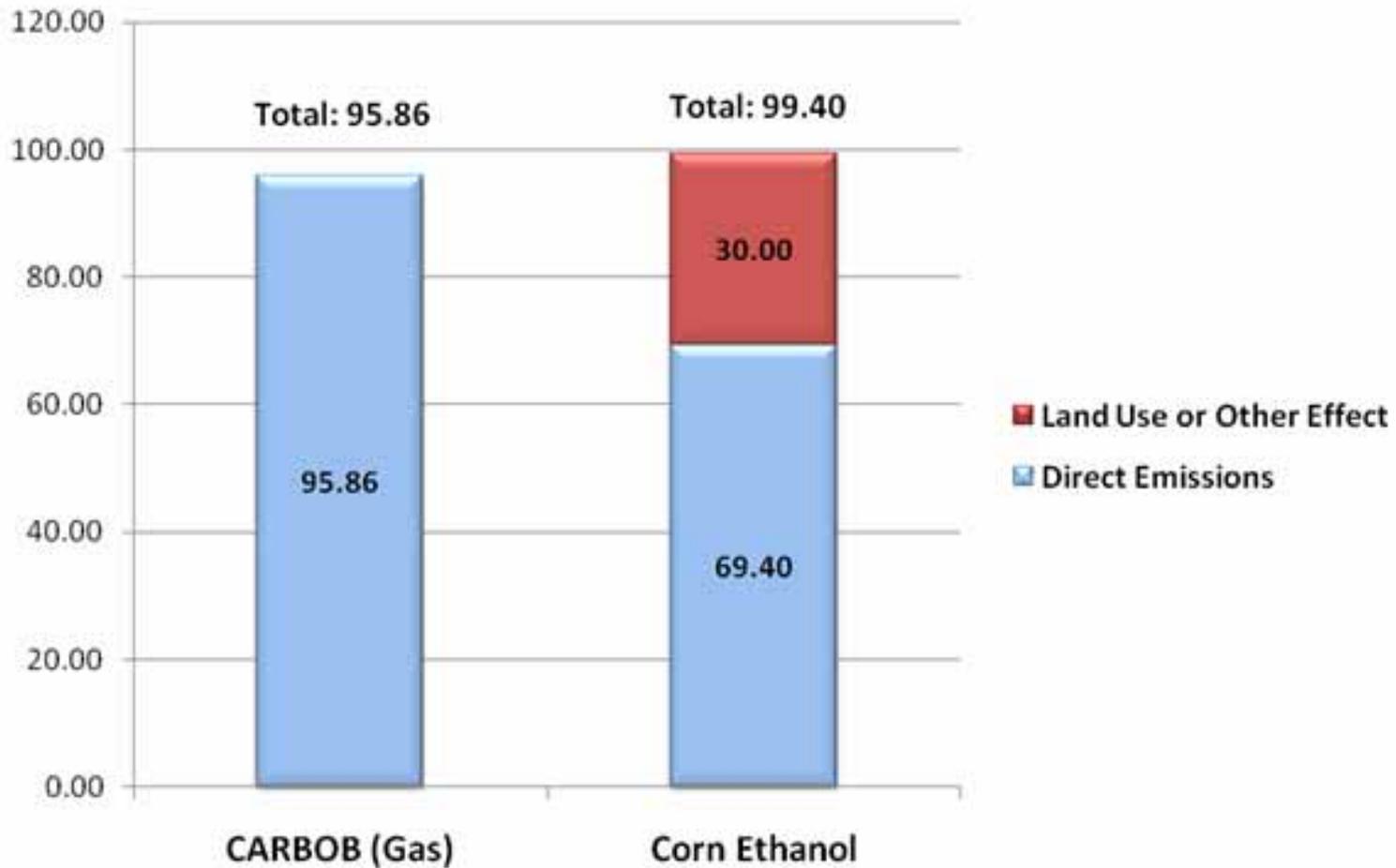
Oil getting more expensive, carbon-intensive, and unsustainable



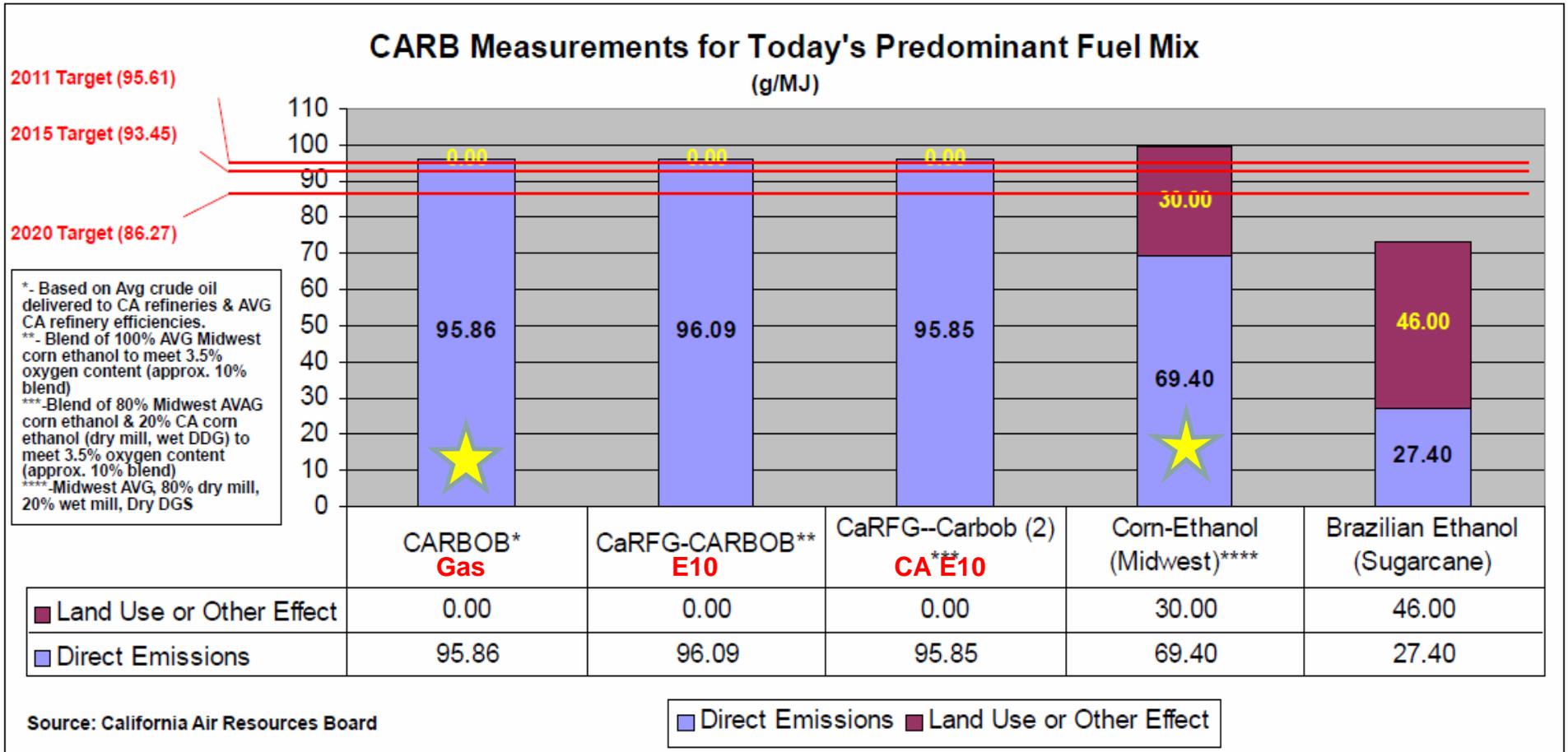
Source: IEA, EIA, Company Websites, O&G Journal, World Oil, Rand Corporation, ECG

Cost of producing oil from future sources is on the rise...

How CARB makes ethanol look worse than gasoline



California LCFS...we need a low-CARB diet

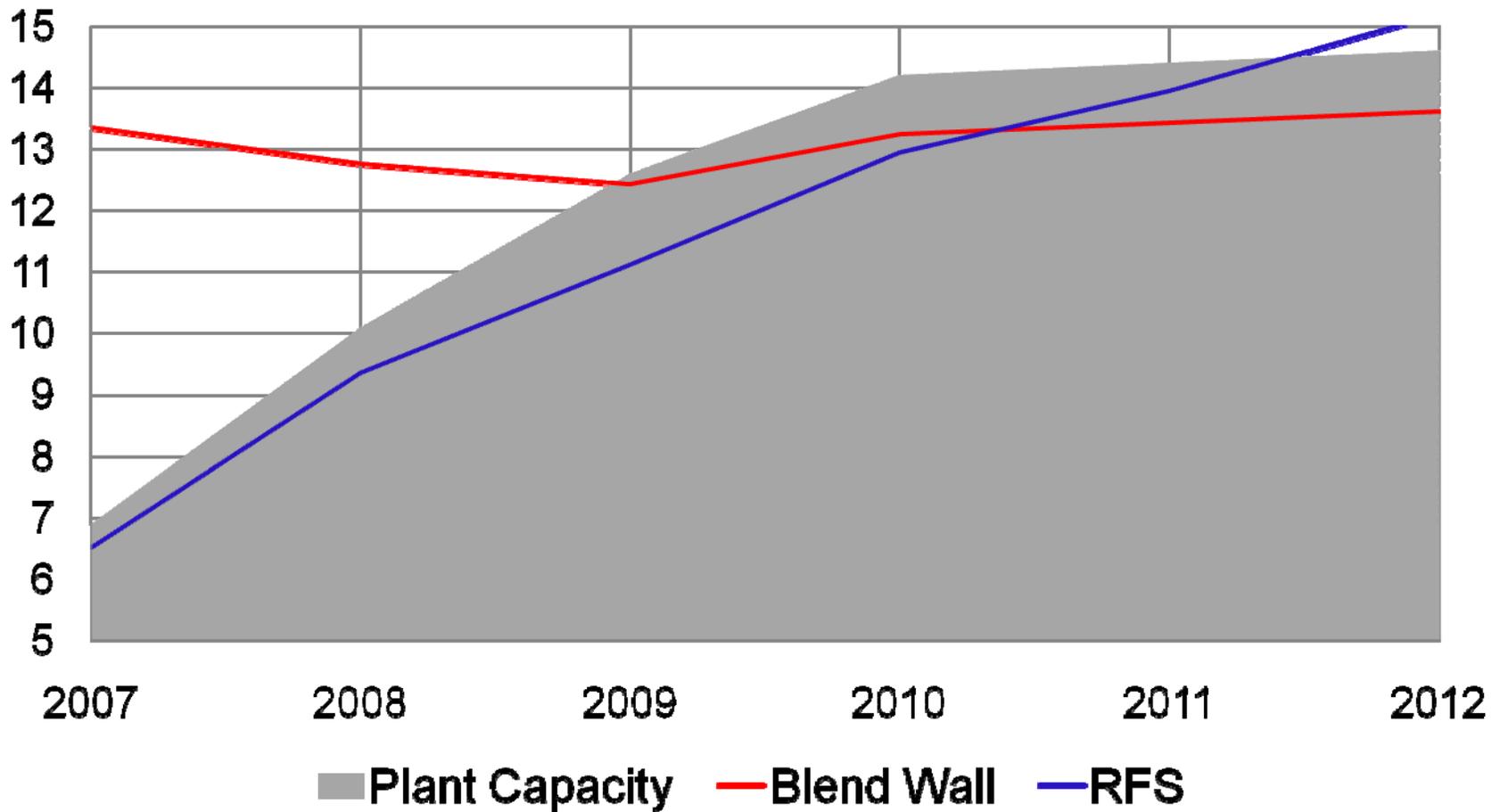


CARB's estimated carbon intensity of fuels, based on grams of CO2 per megajoule of energy. 1 Megajoule equals 950 BTUs.

RFS2 Proposed Rule

- Avg corn ethanol direct GHG impact is 61% better than gasoline.
- But adding indirect land use change penalty, corn is “just” 16% better than gasoline.
- Law requires ethanol 20% GHG improvement over gasoline. Grandfather clause.

E10 Blend Wall



E15 Waiver to EPA on March 6, 2009

“Pursuant to Section 211(f)(4) of the CAA, we request approval for use of an ethanol-gasoline blend containing up to 15 percent ethanol by volume.”



EPA taking comment until May 21

- EPA to decide by December 1.
- Primary focus on scientific evidence supporting E15 use.
- Jobs – more than 130,000 permanent jobs.
- Makes cellulosic and advanced biofuels more likely to be commercialized.
- Consumer choice, not a mandate.



“Ford endorses efforts to increase base level blends up to E15 and collaborate with key stakeholders to overcome challenges with introducing these higher levels of ethanol in the base fuel blend used by all vehicles in the near term.”



“UL has determined that there is no significant incremental risk of damage between E10 and a maximum of 15% ethanol.”



“I believe we could go to E12, E14, or E16 without causing any great problems in vehicle operation.” The Honorable Jeff Bingaman, Chairman of the U.S. Senate Energy and Natural Resources Committee, February 12, 2009, *New York Times*.

“We’d love to see 15 percent, and we can, we believe, move fairly quickly to move the blend rate to 12 or 13 percent in the interim” The Honorable Tom Vilsack, Secretary, United States Department of Agriculture, March 10, 2009, *Reuters*.



“It seems to me we should be able to do that,” Pelosi told reporters after speaking to the National Farmers Union. ***Asked about raising the ethanol cap, Pelosi said “I hope so”*** and pointed to the goal of *More domestic fuel production.*

The Honorable Nancy Pelosi, Speaker of the House of Representatives, March 10, 2009, *Reuters*.

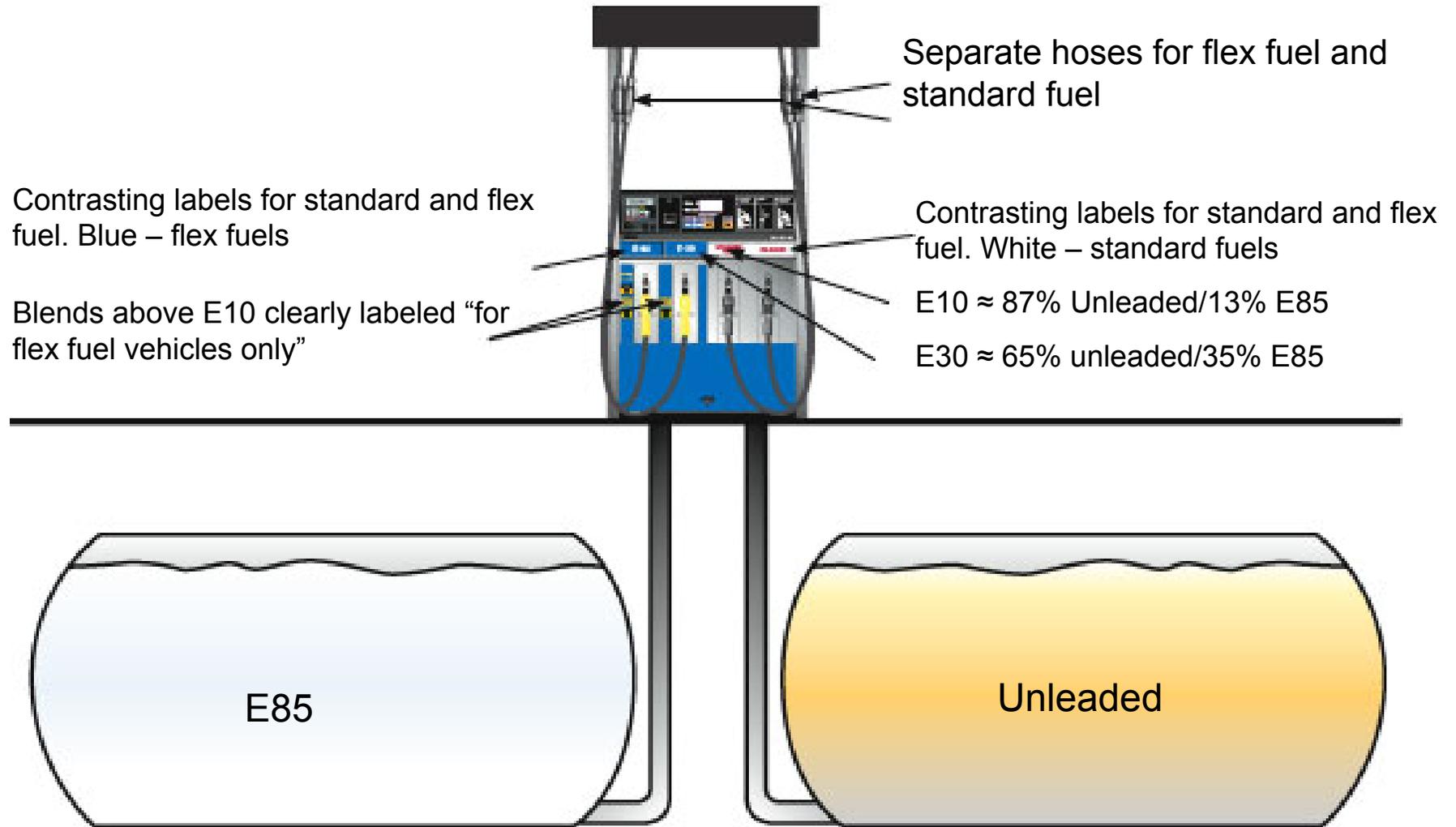


ACE E15 Campaign

- Online petition (www.ethanol.org/petition)
- Formal written comments by May 21
- E15 Rallies on May 15
- Press conferences
- Letters to editor
- DC Fly Ins
- Encourage state legislators to adopt resolutions
- E15 Action Center (www.ethanol.org)



Blender Pumps



Federal Infrastructure Tax Credit

Current limit of tax credit eligibility



Current

Proposed tax credit eligibility



Proposed





Ethanol Calculator
www.ethanolfactor.org

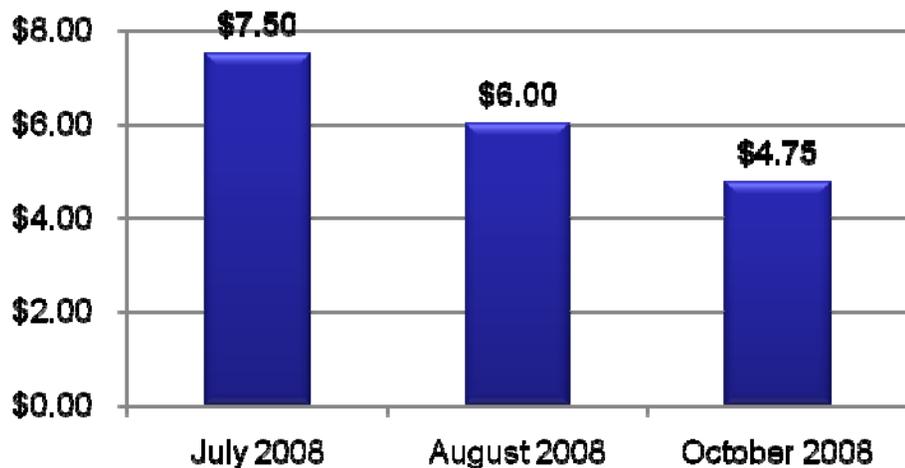
Barrel Blaster Game
www.barrelblaster.net

Ethanol.Right.Now Blog
www.ethanol.typepad.com

Ethanol Today Magazine
www.ethanoltoday.com

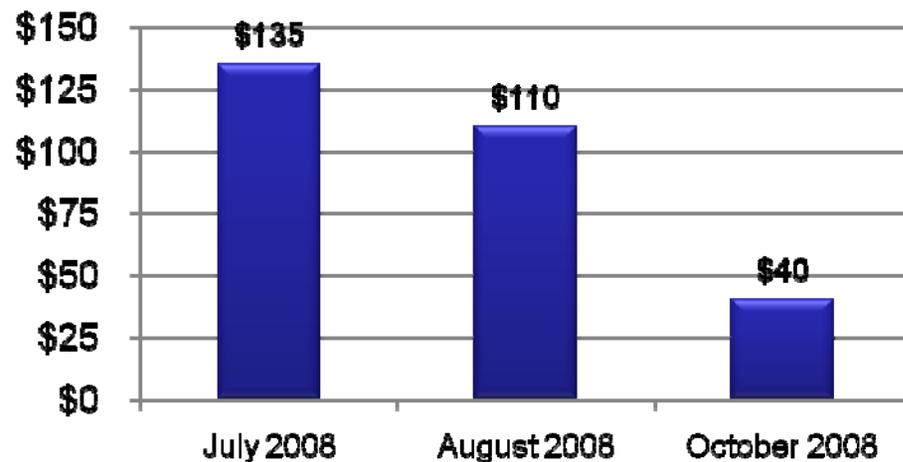
Ethanol Collective
www.ethanolcollective.com

Corn Futures



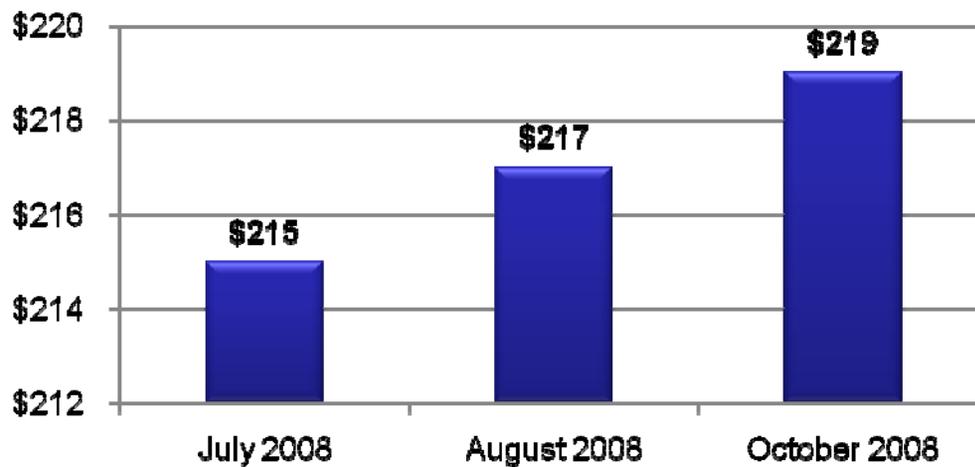
Source: CBOT

Crude Oil (bbl)



Source: NYMEX

Food at Home - Consumer Price Index



Source: Bureau of Labor Statistics CPI-U for Urban Consumers



Food makers being disingenuous



Steve Burd of Safeway, the 4th largest U.S. food retailer, accused food makers of being disingenuous with consumers by not dropping their prices to reflect declining input costs.

Source: Wall Street Journal, February 26, 2009



“Grain Costs Down, Groceries Not” *March 2009.*

**THE WALL STREET
JOURNAL.**

“One large grocery company operating in Southern California has seen the wholesale price for a carton of Kellogg’s Corn Pops rise about 17% since June 2008, despite a 52% plunge in corn prices from their peak that month.” *March 2, 2009.*

Los Angeles Times

