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# The Big Story

## The secret environmental cost of US ethanol policy

By [DINA CAPPIELLO](#) and [MATT APUZZO](#)

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In this July 20, 2013, photo, a plant that produces ethanol is next to a cornfield near Coon Rapids, Iowa. Government mandates to increase ethanol production have helped drive up corn prices leading to marginal land being farmed to produce the crop. In 2012, 44 percent of the nation's corn crop was used for fuel, about twice the rate seen in 2006, according to the Department of Agriculture. (AP Photo/Charlie Riedel)

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CORYDON, Iowa (AP) — The hills of southern Iowa bear the scars of America's push for green energy: The brown gashes where rain has washed away the soil. The polluted streams that dump fertilizer into the water supply.

Even the cemetery that disappeared like an apparition into a cornfield.

It wasn't supposed to be this way.

With the Iowa political caucuses on the horizon in 2007, presidential candidate Barack Obama made homegrown corn a centerpiece of his plan to slow global warming. And when President George W. Bush signed a law that year requiring oil companies to add billions of gallons of ethanol to their gasoline each year, Bush predicted it would make the country "stronger, cleaner and more secure."

But the ethanol era has proven far more damaging to the environment than politicians promised and much worse than the government admits today.

As farmers rushed to find new places to plant corn, they wiped out millions of acres of conservation land, destroyed habitat and polluted water supplies, an Associated Press investigation found.

Five million acres of land set aside for conservation — more than Yellowstone, Everglades and Yosemite National Parks combined — have vanished on Obama's watch.

Landowners filled in wetlands. They plowed into pristine prairies, releasing carbon dioxide that had been locked in the soil.

Sprayers pumped out billions of pounds of fertilizer, some of which seeped into drinking water, contaminated rivers and worsened the huge dead zone in the Gulf of Mexico where marine life can't survive.

The consequences are so severe that environmentalists and many scientists have now rejected corn-based ethanol as bad environmental policy. But the Obama administration stands by it, highlighting its benefits to the farming industry rather than any negative impact.

Farmers planted 15 million more acres of corn last year than before the ethanol boom, and the effects are visible in places like south central Iowa.

The hilly, once-grassy landscape is made up of fragile soil that, unlike the earth in the rest of the state, is poorly suited for corn. Nevertheless, it has yielded to America's demand for it.

"They're raping the land," said Bill Alley, a member of the board of supervisors in Wayne County, which now bears little resemblance to the rolling cow pastures shown in postcards sold at a Corydon pharmacy.

All energy comes at a cost. The environmental consequences of drilling for oil and natural gas are well documented and severe. But in the president's push to reduce greenhouse gases and curtail global warming, his administration has allowed

so-called green energy to do not-so-green things.

In some cases, such as its decision to allow wind farms to kill eagles, the administration accepts environmental costs because they pale in comparison to the havoc it believes global warming could ultimately cause.

Ethanol is different.

The government's predictions of the benefits have proven so inaccurate that independent scientists question whether it will ever achieve its central environmental goal: reducing greenhouse gases. That makes the hidden costs even more significant.

"This is an ecological disaster," said Craig Cox with the Environmental Working Group, a natural ally of the president that, like others, now finds itself at odds with the White House.

But it's a cost the administration is willing to accept. It believes supporting corn ethanol is the best way to encourage the development of biofuels that will someday be cleaner and greener than today's. Pulling the plug on corn ethanol, officials fear, might mean killing any hope of these next-generation fuels.

"That is what you give up if you don't recognize that renewable fuels have some place here," EPA administrator Gina McCarthy said in a recent interview with AP. "All renewable fuels are not corn ethanol."

Still, corn supplies the overwhelming majority of ethanol in the United States, and the administration is loath to discuss the environmental consequences.

"It just caught us completely off guard," said Doug Davenport, a Department of Agriculture official who encourages southern Iowa farmers to use conservation practices on their land. Despite those efforts, Davenport said he was surprised at how much fragile, erodible land was turned into corn fields.

Shortly after Davenport spoke to The Associated Press, he got an email ordering him to stop talking.

"We just want to have a consistent message on the topic," an Agriculture Department spokesman in Iowa said.

That consistent message was laid out by Agriculture Secretary Tom Vilsack, who spoke to ethanol lobbyists on Capitol Hill recently and said ethanol was good for business.

"We are committed to this industry because we understand its benefits," he said. "We understand it's about farm income. It's about stabilizing and maintaining farm income which is at record levels."

The numbers behind the ethanol mandate have become so unworkable that, for the first time, the EPA is soon expected to reduce the amount of ethanol required to be added to the gasoline supply. An unusual coalition of big oil companies, environmental groups and food companies is pushing the government to go even further and reconsider the entire ethanol program.

The ethanol industry is fighting hard against that effort. Industry spokesman Brooke Coleman dismissed this story as "propaganda on a page." An industry blog in Minnesota said the AP had succumbed "to Big Oil's deep pockets and powerful influence."

To understand how America got to an environmental policy with such harmful environmental consequences, it's helpful to start in a field in Iowa.

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Leroy Perkins, a white-haired, 66-year-old farmer in denim overalls, stands surrounded by waist-high grass and clover. He owns 91 acres like this, all hilly and erodible, that he set aside for conservation years ago.

Soon, he will have a decision to make: keep the land as it is or, like many of his neighbors, plow it down and plant corn or soybeans, the major sources of biofuel in the United States.

"I'd like to keep it in," he said. "This is what southern Iowa's for: raising grass."

For decades, the government's Conservation Reserve Program has paid farmers to stop farming environmentally sensitive land. Grassy fields naturally convert carbon dioxide into oxygen, which helps combat global warming. Plus, their deep root systems prevent topsoil from washing away.

For Perkins and his farmer neighbors in Wayne County, keeping farmland in conservation wasn't just good stewardship. It made financial sense.

A decade ago, Washington paid them about \$70 an acre each year to leave their farmland idle. With corn selling for about \$2 per bushel (56 pounds) back then, farming the hilly, inferior soil was bad business.

Many opted into the conservation program. Others kept their grasslands for cow pastures.

Lately, though, the math has changed.

"I'm coming to the point where financially, it's not feasible," Perkins said.

The change began in 2007, when Congress passed a law requiring oil companies to blend billions of gallons of ethanol into gasoline.

Oil prices were high. Oil imports were rising quickly. The legislation had the strong backing of the presidential candidate who was the junior senator from neighboring Illinois, the nation's second-largest corn producer.

"If we're going to get serious about investing in our energy future, we must give our family farmers and local ethanol producers a fair shot at success," Obama said then.

The Democratic primary field was crowded, and if he didn't win the Iowa caucuses the road to the nomination would be difficult. His strong support for ethanol set him apart.

"Any time we could talk about support for ethanol, we did," said Mitch Stewart, the battleground states director for Obama's 2008 campaign. "It's how we would lead a lot of discussions."

President Bush signed the bill that December.

It would fall on the next president to figure out how to make it work.

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President Obama's team at the EPA was sour on the ethanol mandate from the start.

As a way to reduce global warming, they knew corn ethanol was a dubious proposition. Corn demands fertilizer, which is made using natural gas. What's worse, ethanol factories typically burn coal or gas, both of which release carbon dioxide.

Then there was the land conversion, the most controversial and difficult-to-predict outcome.

Digging up grassland releases greenhouse gases, so environmentalists are skeptical of any program that encourages planting more corn.

"I don't remember anybody having great passion for this," said Bob Sussman, who served on Obama's transition team and recently retired as EPA's senior policy counsel. "I don't have a lot of personal enthusiasm for the program."

At the White House and the Department of Agriculture, though, there was plenty of enthusiasm.

One of Obama's senior advisers, Pete Rouse, had worked on ethanol issues as chief of staff to Sen. Tom Daschle of South Dakota, a major ethanol booster and now chair of the DuPont Advisory Committee on Agriculture Innovation and Productivity.

Another Obama adviser at the time, Heather Zichal, grew up in northeast Iowa — as a child, she was crowned "sweet corn princess" — and was one of the Obama campaign's leading voices on ethanol in her home state.

The administration had no greater corn ethanol advocate than Vilsack, the former Iowa governor.

"Tom understands that the solution to our energy crisis will be found not in oil fields abroad but in our farm fields here at home," Obama said in 2008. "That is the kind of leader I want in my Cabinet."

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Writing the regulations to implement the ethanol mandate was among the administration's first major environmental undertakings. Industry and environmental groups watched closely.

The EPA's experts determined that the mandate would increase demand for corn and encourage farmers to plow more land. Considering those factors, they said, corn ethanol was only slightly better than gasoline when it came to carbon dioxide emissions.

Sixteen percent better, to be exact. And not in the short term. Only by 2022.

By law, though, biofuels were supposed to be at least 20 percent greener than gasoline.

From a legal standpoint, the results didn't matter. Congress exempted existing coal- and gas-burning ethanol plants from

meeting this standard.

But as a policy and public relations issue, it was a real problem. The biofuel-friendly Obama administration was undermining the industry's major selling point: that it was much greener than gasoline.

So the ethanol industry was livid. Lobbyists flooded the EPA with criticism, challenging the government's methods and conclusions.

The EPA's conclusion was based on a model. Plug in some assumed figures — the price of corn, the number of acres planted, how much corn would grow per acre — and the model would spit out a number.

To get past 20 percent, the EPA needed to change its assumptions.

The most important of those assumptions was called the yield, a measure of how much corn could be produced on an acre of land. The higher the yield, the easier it would be for farmers to meet the growing demand without plowing new farmland, which counted against ethanol in the greenhouse gas equation.

Corn yields have inched steadily upward over the years as farms have become more efficient. The government's first ethanol model assumed that trend would continue, rising from 150 bushels per acre to about 180 by the year 2022.

Agriculture companies like Monsanto Co. and DuPont Pioneer, which stood to make millions off an ethanol boom, told the government those numbers were too low.

They predicted that genetically modified seeds — which they produce — would send yields skyrocketing. With higher yields, farmers could produce more corn on less land, reducing the environmental effects.

Documents show the White House budget office also suggested the EPA raise its yield assumptions.

When the final rule came out, the EPA and Agriculture officials added a new "high yield case scenario" that assumed 230 bushels per acre.

The flaw in those assumptions, independent scientists knew, was that a big increase in corn prices would encourage people to farm in less hospitable areas like Wayne County, which could never produce such large yields.

But the EPA's model assumed only a tiny increase in corn prices.

"You adjust a few numbers to get it where you want it, and then you call it good," said Adam Liska, assistant professor of biological systems engineering at the University of Nebraska. He supports ethanol, even with its environmental trade-offs.

When the Obama administration finalized its first major green-energy policy, corn ethanol barely crossed the key threshold. The final score: 21 percent.

"If you corrected any of a number of things, it would be on the other side of 20 percent," said Richard Plevin of the Transportation Sustainability Research Center at the University of California, Berkeley. "Is it a coincidence this is what happened? It certainly makes me wonder."

It didn't take long for reality to prove the Obama administration's predictions wrong.

The regulations took effect in July 2010. The following month, corn prices already had surpassed the EPA's long-term estimate of \$3.22 a bushel. That September, corn passed \$4, on its way to about \$7, where it has been most of this year.

Yields, meanwhile, have held fairly steady.

But the ethanol boom was underway.

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It's impossible to precisely calculate how much ethanol is responsible for the spike in corn prices and how much those prices led to the land changes in the Midwest.

Supporters of corn ethanol say extreme weather — dry one year, very wet the next — hurt farmers and raised prices.

But diminishing supply wasn't the only factor. More corn than ever was being distilled into ethanol.

Historically, the overwhelmingly majority of corn in the United States has been turned into livestock feed. But in 2010, for the first time, fuel was the No. 1 use for corn in America. That was true in 2011 and 2012. Newly released Department of Agriculture data show that, this year, 43 percent of corn went to fuel and 45 percent went to livestock feed.

The more corn that goes to ethanol, the more that needs to be planted to meet other demands.

Scientists predicted that a major ethanol push would raise prices and, in turn, encourage farmers like Leroy Perkins to plow into conservation land. But the government insisted otherwise.

In 2008, the journal *Science* published a study with a dire conclusion: Plowing over conservation land releases so much greenhouse gas that it takes 48 years before new plants can break even and start reducing carbon dioxide.

For an ethanol policy to work, the study said, farmers could not plow into conservation land.

The EPA, in a report to Congress on the environmental effects of ethanol, said it was "uncertain" whether farmers would plant on farmland that had been set aside for conservation.

The Department of Energy was more certain. Most conservation land, the government said in its response to the study, "is unsuitable for use for annual row crop production."

America could meet its ethanol demand without losing a single acre of conservation land, Energy officials said.

They would soon be proven wrong.

Before the government ethanol mandate, the Conservation Reserve Program grew every year for nearly a decade. Almost overnight, farmers began leaving the program, which simultaneously fell victim to budget cuts that reduced the amount of farmland that could be set aside for conservation.

In the first year after the ethanol mandate, more than 2 million acres disappeared.

Since Obama took office, 5 million more acres have vanished.

Agriculture officials acknowledge that conservation land has been lost, but they say the trend is reversing. When the 2013 data comes out, they say it will show that as corn prices stabilized, farmers once again began setting aside land for conservation.

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Losing conservation land was bad. But something even worse was happening.

Farmers broke ground on virgin land, the untouched terrain that represents, from an environmental standpoint, the country's most important asset.

The farm industry assured the government that wouldn't happen. And it would have been an easy thing for Washington to check.

But rather than insisting that farmers report whenever they plow into virgin land, the government decided on a much murkier oversight method: Washington instead monitors the total number of acres of cropland nationwide. Local trends wash away when viewed at such a distance.

"They could not have designed a better approach to not detect land conversion," said Ben Larson, an agricultural expert for the National Wildlife Federation.

Look closely at the corn boom in the northern Great Plains, however, and it's clear. Farmers are converting untouched prairie into farmland.

The Department of Agriculture began keeping figures on virgin land only in 2012 and determined that about 38,000 acres vanished that year.

But using government satellite data — the best tool available — the AP identified a conservative estimate of 1.2 million acres of virgin land in Nebraska and the Dakotas alone that have been converted to fields of corn and soybeans since 2006, the last year before the ethanol mandate was passed.

"The last five years, we've become financially solvent," said Robert Malsam, a farmer in Edmunds County, S.D., who like others in the central and eastern Dakotas has plowed into wild grassland to expand his corn crop.

The price of corn is reshaping the land across the Midwest. In Wayne County, Iowa, for example, only the dead can stop the corn.

A gravel road once cut through a grassy field leading to a hilltop cemetery. But about two years ago, the landowners plowed over the road. Now, visiting gravesites means walking a narrow path through the corn.

People have complained. It's too narrow for a hearse, too rutted for a wheelchair, too steep for the elderly. But it's legal, said

Bill Alley from the board of supervisors.

"This is what the price of corn does," he said. "This is what happens, right here."

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When Congress passed the ethanol mandate, it required the EPA to thoroughly study the effects on water and air pollution. In his recent speech to ethanol lobbyists, Vilsack was unequivocal about those effects:

"There is no question air quality, water quality is benefiting from this industry," he said.

But the administration never actually conducted the required air and water studies to determine whether that's true.

In an interview with the AP after his speech, Vilsack said he didn't mean that ethanol production was good for the air and water. He simply meant that gasoline mixed with ethanol is cleaner than gasoline alone.

In the Midwest, meanwhile, scientists and conservationists are sounding alarms.

Nitrogen fertilizer, when it seeps into the water, is toxic. Children are especially susceptible to nitrate poisoning, which causes "blue baby" syndrome and can be deadly.

Between 2005 and 2010, corn farmers increased their use of nitrogen fertilizer by more than one billion pounds. More recent data isn't available from the Agriculture Department, but because of the huge increase in corn planting, even conservative projections by the AP suggest another billion-pound fertilizer increase on corn farms since then.

Department of Agriculture officials note that the amount of fertilizer used for all crops has remained steady for a decade, suggesting the ethanol mandate hasn't caused a fertilizer boom across the board.

But in the Midwest, corn is the dominant crop, and officials say the increase in fertilizer use — driven by the increase in corn planting — is having an effect.

The Des Moines Water Works, for instance, has faced high nitrate levels for many years in the Des Moines and Raccoon Rivers, which supply drinking water to 500,000 people. Typically, when pollution is too high in one river, workers draw from the other.

"This year, unfortunately the nitrate levels in both rivers were so high that it created an impossibility for us," said Bill Stowe, the water service's general manager.

For three months this summer, workers kept huge machines running around the clock to clean the water. Officials asked customers to use less water so the utility had a chance to keep up.

Part of the problem was that last year's dry weather meant fertilizer sat atop the soil. This spring's rains flushed that nitrogen into the water along with the remnants of the fertilizer from the most recent crop.

At the same time the ethanol mandate has encouraged farmers to plant more corn, Stowe said, the government hasn't done

enough to limit fertilizer use or regulate the industrial drainage systems that flush nitrates and water into rivers and streams.

With the Water Works on the brink of capacity, Stowe said he's considering suing the government to demand a solution.

In neighboring Minnesota, a government report this year found that significantly reducing the high levels of nitrates from the state's water would require huge changes in farming practices at a cost of roughly \$1 billion a year.

"We're doing more to address water quality, but we are being overwhelmed by the increase in production pressure to plant more crops," said Steve Morse, executive director of the Minnesota Environmental Partnership.

The nitrates travel down rivers and into the Gulf of Mexico, where they boost the growth of enormous algae fields. When the algae die, the decomposition consumes oxygen, leaving behind a zone where aquatic life cannot survive.

This year, the dead zone covered 5,800 square miles of sea floor, about the size of Connecticut.

Larry McKinney, the executive director of the Harte Institute at Texas A&M University-Corpus Christi, says the ethanol mandate worsened the dead zone.

"On the one hand, the government is mandating ethanol use," he said, "and it is unfortunately coming at the expense of the Gulf of Mexico."

The dead zone is one example among many of a peculiar ethanol side effect: As one government program encourages farmers to plant more corn, other programs pay millions to clean up the mess.

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Obama administration officials know the ethanol mandate hasn't lived up to its billing.

The next-generation biofuels that were supposed to wean the country off corn haven't yet materialized. Every year, the EPA predicts millions of gallons of clean fuel will be made from agricultural waste. Every year, the government is wrong.

Every day without those cleaner-burning fuels, the ethanol industry stays reliant on corn and the environmental effects mount.

The EPA could revisit its model and see whether ethanol is actually as good for the environment as officials predicted. But the agency says it doesn't have the money or the manpower.

Even under the government's optimistic projections, the ethanol mandate wasn't going to reduce greenhouse gas right away. And with the model so far off from reality, independent scientists say it's hard to make an argument for ethanol as a global warming policy.

"I'd have to think really hard to come up with a scenario where it's a net positive," said Silvia Secchi, a Southern Illinois University agriculture economist.

She paused a few moments, then added, "I'm stumped."

In June, when Obama gave a major policy speech on reducing greenhouse gas, he didn't mention ethanol. Biofuels in general received a brief, passing reference.

What was once billed as an environmental boon has morphed into a government program to help rural America survive.

"I don't know whether I can make the environmental argument, or the economic argument," Vilsack said in an interview with the AP. "To me, it's an opportunity argument."

Congress and the administration could change the ethanol mandate, tweak its goals or demand more safeguards. Going to Congress and rewriting the law would mean picking a fight with agricultural lobbyists, a fight that would put the administration on the side of big oil companies, which despise the ethanol requirement.

So the ethanol policy cruises on autopilot.

Bob Dinneen, president of the Renewable Fuels Association, the ethanol lobbying group, said there's no reason to change the standards. Ethanol still looks good compared to the oil industry, which increasingly relies on environmentally risky tactics like hydraulic fracturing or pulls from carbon-heavy tar sands.

Leroy Perkins, the farmer agonizing about what to do with his 91 acres, says he likes ethanol as a product and an industry. But he knows it fuels the corn prices that are transforming his county.

"If they do change the fuel standard, you'll see the price of corn come down overnight," he said. "I like to see a good price for corn. But when it's too high, it hurts everybody."

Investors from as far away as Maryland and Pennsylvania have bought thousands of acres in Wayne County, sending prices skyrocketing from \$350 per acre a decade ago to \$5,000 today.

One in every four acres of in the county is now owned by an out-of-towner.

Those who still own land often rent it to farming companies offering \$300 or more per acre. Perkins could make perhaps \$27,000 a year if he let somebody plant corn on his land. That's nothing to dismiss in a county where typical household income is \$36,000.

But he knows what that means. He sees the black streaks in his neighbor's cornfields, knowing the topsoil washes away with every rain. He doesn't want that for his family's land.

"You have to decide, do you want to be the one to..."

He doesn't finish his sentence.

"We all have to look at our pocketbooks."

—

Associated Press writers Jack Gillum in Washington and Chet Brokaw in Roscoe, S.D., contributed to this report.

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56 Comments

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**Carson Berger** · 9 months ago

This article is mostly bogus facts backed by unstable non-peer reviewed sources..

Claim: “Five million acres of land set aside for conservation...have vanished on Obama's watch. Landowners filled in wetlands. They plowed into pristine prairies, releasing carbon dioxide that had been locked in the soil.”

Fact: According to USDA data, 33.7 million acres were enrolled in CRP in 2009, the year President Obama began his first term. As a consequence of the 2008 Farm Bill, the cap on CRP acreage was dropped from

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13 ^ | ▾ · Share >



**Seldon B. Graham, Jr.** → Carson Berger · 9 months ago

Ethanol is even worse than this article states. It is a NATIONAL SECURITY issue because it is impossible for ethanol to ever replace more than 10% of foreign oil imports, using ethanol emits more carbon dioxide into the air than using gasoline, ethanol's extremely poor mileage causes Americans to lose billions of free miles of travel annually, ethanol increases the price at the pump, ethanol can damage engines, ethanol attracts government corruption, to name a few reasons.

14 ^ | ▾ · Share >



**Tad** → Seldon B. Graham, Jr. · 9 months ago



Ethanol costs less....fewer mpgs (maybe) but its made up in the cost at the pump. Do the math, i have. Regular gas=\$0.19/mile and E30=\$0.16/mile. Thats less right? Even with mileage difference. With \$0.03/mile difference over a years worth of miles(15,000) and your savings are \$450/year at the pump. In other words, you drive for free for about 9 weeks out of the year. I'll take it! Christmas just got paid for.

4 ^ | v · Share ›



**BT Richards** → Tad · 9 months ago

It robs your vehicle of 30% mpg. It only cost less because of the federal subsidy (TAX DOLLARS). Unless you're a socialist, you don't want any industry supported, sustained and created by a Governement.

11 ^ | v · Share ›



**Alex Johnson** → BT Richards · 9 months ago

yeah E-85 can approach a large reduction in fuel mileage like that but not E10 or E20. The math just doesn't make sense to lose 30% of your mileage. As for it being supported by tax dollars those subsidies ran out at the end of 2011. Ethanol has less support from the government then big oil does, which still, 100 years later, receives subsidies and tax breaks. But if ethanol, a 30 year old business which really just got its footing about 15 years ago, can't stand on its own than its a failure. Also, have you factored in all our military support and lives lost to secure oil? I can't remember the last time my buddies had to go protect the corn fields of Iowa but I sure do remember when they went over to Iraq.

2 ^ | v · Share ›



**John Campbell** → Seldon B. Graham, Jr. · 9 months ago

You're not wrong on any account, ethanol is vastly inferior to gasoline and does damage engine components (seals, gaskets, and sensors). It does emit more CO2 during combustion, however that has been supposedly offset by the amount of CO2 absorbed in the growth of the plants. The real problem is that ethanol is net energy loss long term from its production and refinement given its impact on the performance. Humans are simply going to have to accept sooner or later that there is no such thing as a free lunch, and it's getting close to time to pay up.

2 ^ | v · Share ›



**Alex Johnson** → John Campbell · 9 months ago

Where did you source any of that information? Who says its inferior? By what metric? On pure BTU's yeah it has less BTU's per gallon equivalent. But gas has less BTU's than an equivalent unit of coal or wood. Should we go back to steam power? Fthanol has a higher octane rating which means if

go back to steam power. Ethanol has a higher octane rating which means if the engine is built correctly you can actually get more horsepower per gallon and see no mileage difference. Just ask NASCAR. They run E-15 and have more HP because of it. The CO2 comment is just completely false. There is no sound argument that would say otherwise. As for its net energy, several universities and the DOE have shown it produces 1.6 BTU's for each BTU used to create it. And that number keeps getting better as ethanol plants continue to improve efficiencies. No one is saying ethanol is a free lunch, its just a lot better than gas.

4 ^ | v · Share ›



**BT Richards** → Alex Johnson · 9 months ago

It has been proven inferior over and over again for 10 years.

- It gets 30% lower fuel economy
- It's excessive corrosiveness reduces vehicle life
- A gallon of ethanol requires more BTU's to create than it contains.
- Increased corn prices cost your more at the grocery store for everything corn touches (meat & dairy, anything sweetened)
- The program is artifically supported by billions of tax dollars

2 ^ | v · Share ›



**Alex Johnson** → BT Richards · 9 months ago

Inferior to what? Gas? Thats a joke. Oil companies are taking advantage of ethanol's higher octane and making lower octane blendstock. They're selling a mixture of junk hydrocarbons (around 300 or so different ones) that they can't sell into chemical markets as fuel. So you get junk fuel because of it. Again, the math of a 30% reduction in mileage is horrible math. The only way that works out is if you're replacing the fuel with water. Ethanol makes up 10% of your fuel, its combustibile, how it would lead to a 30% reduction in mileage is beyond me. I'm not sure how its corrosive. I've been told that time and again but as a chemist I have yet to see any metals get dissolved by ethanol. Its ph equivalent is about 7.9 which puts it right there with water and milk. I know, horribly corrosive liquids. The claim that it takes more energy to make than it puts out has been proven false by several universities and national labs. They put the energy return at 167% of the BTU's that are put into the system. The Food vs Fuel debate you're eluding to has also been proven wrong since only \$0.10 of every dollar is actually spent on feedstock (corn) for products in the store. And again, all subsidies for ethanol ended back in 2011. There are no more tax dollars going to ethanol.

4 ^ | v · Share ›



**Tad** → John Campbell · 9 months ago

NASCAR uses ethanol, their cockets, cools and sensors look to be working

 NASCAR uses ethanol, their gaskets seals and sensors look to be working fine. ALMS, CART, INDY, Australian V8 Supercar and many other motorsports entities use ethanol and tout its benefits. Stop shouting "fire" in a movie theatre guys.

4 ^ | v · Share ›

 **Tanks-a-lot** → Tad · 9 months ago

Racing teams use alcohol fuels because of the safety factor not for any other reason.

1 ^ | v · Share ›

 **Alex Johnson** → Tanks-a-lot · 9 months ago

Oh cause the invisible flame the pure ethanol burns with is safer when it catches on fire?

2 ^ | v · Share ›

 **Tanks-a-lot** → Alex Johnson · 9 months ago

Because alcohol is water soluble

lIn2science

2 ^ | v · Share ›

 **John Campbell** → Tanks-a-lot · 9 months ago

Wow I posted a response with factual information with a link to the fact that the alcohol blocks oil from lubricating seals and it was not posted after review. Pathetic. Block real science for your lies and disinformation. Look it up people! Ask a mechanic! Not that I believe now that this will be posted now.

2 ^ | v · Share ›

 **Tanks-a-lot** → John Campbell · 9 months ago

Some sites disallow posting of any links in their Disqus comments.

^ | v · Share ›

 **John Campbell** → Tad · 9 months ago

Oh does nascar use it? Tell me, how often do they replace their engines, seals etc? Unless you intend to do an overhaul before every race to work and back, don't consider using this example. Ethanol is an alcohol based fuel and as such repels oil. Oil lubricates all those gaskets and parts in an engine. Heat increases the rate at which alcohol burns off and ethanol is no different. Here's a little science experiment you can try at home get some gas and pour it on the street (with ethanol in it of course) then pour another puddle of alcohol fuel and see which evens first. Feel free to confront any

puddle of alcohol fuel and see which evaporates first. I see no reason to comment any mechanic on the issue as well. Don't forget to tell them nascar uses it. Here's some proof: (gasp) <http://www.burkert.com/media/C...>

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**BT Richards** · 9 months ago

Ethanol is nothing more than a huge farm subsidy. It takes more energy to create a gallon of ethanol than is contained in the ethanol.

Farmers are getting rich off this subsidy. Land prices have skyrocketed. As ethanol producers buy more and more corn, our prices as the store continue to rise for beef (feed by corn), beef products, milk, butter, anything sweetened by corn syrup – all way more expensive.

Ethanol is horribly corrosive. It can't be piped, so there's no pipe line. It must be shipped in stainless steel over the road tanks. It's corrosiveness adds to wear and tear on your engine all the while you're getting 30% less in fuel economy compared with pure gasoline.

As a hunter in South Dakota, I can personally say from experience that the fever to plant corn has seriously harmed game production. Where marshes and production land provided cover and breeding for game, that's all gone. Slashed, burned and drained to grow corn. South Dakota was once a haven for bird hunters. Last year was the worst season for hunters ever. Every hunter I spoke with reported the same results. No birds. Many hunters travel across the country to enjoy the sport, and many said they were never coming back.

Now that ethanol is being exported, it's time to end this subsidy. Prove this boondoggle can stand on it's own. All the ethanol plants continue to lose money because they can't support themselves without Federal tax dollars (that you and I directly paying for them). The ethanol plant in Jackson MN never went live after being built because it can't make money. The ethanol plant in Madison SD has never made a profit.

The reason gas prices for ethanol are lower than pure gasoline is because of a federal support per gallon. That's your and my tax dollars being syphoned away to support this boondoggle.

4 ^ | v · Share >



**Alex Johnson** → BT Richards · 9 months ago

If you want the CRP acres to stay as prairie grass you're going to have to ask Noem and Johnson to bulk up the funding for the program. Farmers aren't going to just keep land fallow if they're not making anything off of it. Its a business. That would be like asking Nike to buy a factory and then just leave it empty and not make any money on it. The wetland program and CRP program thrived in the late 80's and early 90's because corn was \$1.50 a bushel and it cost more to grow than you could make off of it. Now that prices are closer to where they rightfully should be (\$4-\$6/bushel) those acres are being farmed again. I'm

from SD too and its not just habitat loss. Its the drought last year, overly wet spring and cold winters with not snow cover that are taking a toll as well.

All of your other comments I've addressed in one way or another in replies to your fact less posts. Your information is extremely outdated and one sided. Look at any other source than the American Petroleum Institute and you'll find your facts are way off base.

As for the ethanol plants in Jackson and Madison, they're performing the way they are due to poor management and planning. The same reason the one in Lambertton is doing so poorly. But, even without the subsidies that ethanol no longer receives, companies like POET, ADM, Green Plains Renewables, Valero ethanol, and countless others show that it can be a successful stand alone business.

3 ^ | v · Share ›



**BT Richards** → Alex Johnson · 9 months ago

If it can be a successful stand alone business, it should not require billions in tax dollars. You make my point for me.

1 ^ | v · Share ›



**BT Richards** → Alex Johnson · 9 months ago

When I was hunting last October, corn was selling \$7.50 a bushel. In the area I was in, harvest was 130 Bushels/acre.... you do the math.. lots of shiny new cars and monstrous campers beached along side new prairie castles. Too bad tax payers had to flip the bill.

Noem is a brainless GOP moron puppet and Johnson suffered a brain hemorrhage a few years ago and is unable to perform his duties. Unfortunetly, the voters of SD put in people unable to think. The problem of ethanol

1 ^ | v · Share ›



**JohnnyZ77** · 9 months ago

Electric cars are the way to go, along with wind and solar, etc. This use of natural foods for fueling cars is not going to work. Nothing can be burned without causing some kind of pollution. Duh.

4 ^ | v · Share ›



**TokenSuthener** → JohnnyZ77 · 9 months ago

Johnny, dont do much traveling do ya? 50-80 miles on one charge. 300 for Tesla model S.

1 ^ | v · Share ›



**Alex Johnson** → JohnnyZ77 · 9 months ago

So where will you be getting all of that electricity? I don't disagree that wind and solar are great sources, I love the number of windmills going up in our area. But its not as if they're made of wood and straw. The resources for solar panels and windmills require mining

which required diesel. Nothing is perfect, some are just better than others. Duh.

2 ^ | v · Share ›



**BT Richards** → JohnnyZ77 · 9 months ago

There is plenty of electricity. What we lack is an electrical grid that can handle the additional amperage that would be required. Our grid is decades old, billions under repaired, and can not handle the load of wide spread electric vehicles.

^ | v · Share ›



**Xander** · 9 months ago

There appears to be a glaring contradiction in the article. First it says "Between 2005 and 2010, corn farmers increased their use of nitrogen fertilizer by more than one billion pounds." Then it says "Department of Agriculture officials note that the amount of fertilizer used for all crops has remained steady for a decade."

So has fertilizer use increased or stayed the same? This section of the article presents a muddled picture.

3 ^ | v · Share ›



**Joe** → Xander · 9 months ago

One is for corn only (increasing--due to acreage increases in corn planted), the other is aggregate for all crops (steady, because total crop area hasn't changed nearly as much as corn crop area--corn often replaces other crops on the same land).

^ | v · Share ›



**John Campbell** · 9 months ago

Green power has nothing to do with ethanol nor does the forcing of ethanol onto the people have anything to do with Obama.

A memorable title like that with Obama's name then in the (4th?) second paragraph point out "...when President George W. Bush signed a law that year requiring oil companies to add billions of gallons of ethanol to their gasoline each year, Bush predicted it would make the country "stronger, cleaner and more secure." Laws don't just get turned over by the magic wand wave of a new president, and you people in the news need to stop feeding the idiots out there that idea.

Not for your political views, not for your poor writing, but for your sheer inability to conceive of the fact that this would possibly go down as your worst attempt at a persuasive essay in your life. You ought to be fired.

Anyone willing to destroy their own credibility: DINA CAPPIELLO and MATT APUZZO, by shoddily slapping together loose conjecture, bulking up charges on global warming, and poorly hiding behind the safety net of political drama will bring no honor to their company.

Why not focus on all the money that pushed this crap through our government and use the names of the people who bought the change you are so condemning of?

PS. Some of those investors buying up all that land are Chinese nationals. As if the rich selling them all our jobs weren't enough, now we're too poor to hold on to our own food production.

5 ^ | v · Share ›



**Realitista** · 9 months ago

US Ethanol policy was never about green energy. Ethanol is a terrible form of green energy. It's always been about farm handouts- that's the reason it exists.

4 ^ | v · Share ›



**TokenSuthener** → **Realitista** · 9 months ago

I am assuming thing you must be driving a Model-T?

^ | v · Share ›



**Realitista** → **TokenSuthener** · 9 months ago

I'd drive a Tesla if I could afford one. It's a hell of a lot better of a solution to global warming than destroying tons of valuable cropland to produce a miniscule amount of gasoline.

^ | v · Share ›



**Sparten1** · 9 months ago

I once read where burning ethanol resulted in formaldehyde emissions. That can't be good. Also, the resulting lower mileage per gallon causes us to use more gasoline. How's that working for us?

2 ^ | v · Share ›



**Tad** → **Sparten1** · 9 months ago

really???? What do you think comes from burning gasoline?

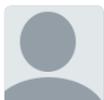
1 ^ | v · Share ›



**David Bluefeather** · 9 months ago

Does anyone at AP understand that CORN >><< GREEN POWER PUSH, ... wtf is the matter with you people?

4 ^ | v · Share ›



**matt** · 9 months ago

Farmers only use an economical amount of fertilizer. They are not going to use any more than is absolutely necessary for the return on the investment of the products. Many city dwellers fertilize and spray their lawns just so they can have a greener lawn than their neighbors. They are not making any profit from their lawns. So any amount used on lawns goes directly to the plume in the

gulf. It is time to stop blaming farmers for every incident that happens. The metropolitan areas would not survive if it were not for farmers putting food on your tables. There is a lot of misinformation in this article. Our journalists must not do any investigation any more.

2 ^ | v · Share ›



**Alex Johnson** → matt · 9 months ago

Exactly, its a business. And most of the time its filtered through the soil before it makes it to a water way. Not like lawns and golf courses where it all goes directly into the gutter or gets oversprayed into the water hazard.

1 ^ | v · Share ›



**Ike\_Kiefer** → Alex Johnson · 9 months ago

What is economical for a farmer without crop subsidies is totally different from what is economical with crop subsidies. It is because of massive market-distorting subsidies that farmers are cultivating land that, without intensive application of pure anhydrous ammonia fertilizer made from natural gas, would only be suitable for hay. We need to end all subsidies. We can't afford them and are hurting more than helping.

^ | v · Share ›



**Brandon Spruill** · 9 months ago

I say we focus on all electric cars anyhow. Also, invest in nuclear and renewable resources: solar, hydro-electric, geothermal, etc.

2 ^ | v · Share ›



**Alex Johnson** → Brandon Spruill · 9 months ago

I don't think anyone is saying we shouldn't be looking for better sources. Even the ethanol industry doesn't claim to be the only answer, just a step in the right direction. The issue with electric cars is how long its going to take to transition to that model. Its not as easy as flipping a switch. We need transitional technologies. Hybrids and range extended electric vehicles are a step in the right direction but its going to take decades for those models, which are new now, to trickle into the used markets. I believe I heard it takes 17 year for the car fleet in America to turn over.

^ | v · Share ›



**TokenSuthener** → Alex Johnson · 9 months ago

Large Metropolitan areas, absolutely. New York, LA, Chicago, Houston, Dallas, Etc...where driving distances range in the tens, to low 100's on a bad day. Not suprisingly is the correlation of geographic preference to Japanaese auto makers who far more advanced in their technology. Rephrased, if I lived in Tokyo, most likely not driving +100 miles a day. Broad assumption and equally bad comparison, but in the USofOil, where people drive land barges out of want, not necessity,

comparable to commercial vehicles in Europe of equal or less size, our culture, not to mention the GEOGRAPHIC disparities in travel time (arguably attributable to the presence of cheap fuel, i.e. who cares if its +30 each way to work).

Agreed, electric vehicles. But with big oil, in bed with large auto, producing illegitimate children that any intelligent consumer would leave at the dealership (why invest in R&D if we don't have too?!?!). 99% of Brazil's auto fleet can run 100% of ethanol. Europe has also established themselves as a leader in understanding the importance of alternate "powering" of vehicles. Amazing, is how only do we see domestic offerings of similar standard, post gov't bailout...

Ultimately its not the answer, but the fact that no one is questioning the base that we currently stand on.

^ | v · Share ›



**Tad** → Alex Johnson · 9 months ago

Yeah.

^ | v · Share ›



**Grant Ingle** · 9 months ago

Excellent investigative reporting, AP! I'd suggest you look into two other serious environmental problems caused by the GMO corn grown for ethanol production. First, there are well-documented problems with genetic pollution of non-GMO corn crops grown in the same areas. And second, most of this GMO corn has a Roundup Ready trait, meaning it can be sprayed with Roundup to kill surrounding weeds and not be affected. That one reason why those weedless fields wash out so easily. The other problem is that Roundup (Glyphosate) residues wash out as well, along with the nitrates and phosphates, also contaminating rivers used by many cities for their drinking supplies. Ironically, the federal government's US Geological Service (USGS) has documented this contamination in the Midwest: <http://toxics.usgs.gov/highlig...> I'd suggest looking into the levels of Roundup contamination in rivers and municipal water supplies downstream of areas where ethanol corn is grown... I'm guessing they will often exceed the safe contamination levels set by the EPA for Glyphosate at [www.epa.gov/safewater/pdfs/fac...](http://www.epa.gov/safewater/pdfs/fac...)

1 ^ | v · Share ›



**KLH6** · 9 months ago

I watched the 4 hour special on the dustbowl & read the book. Everyone should get from their library. It lasted for over 10 years & was devastating to almost all of USA. It was due to plowing up all the prairie, not rotating crops & a long drought lasting years. Fast forward to today. Plowing up our precious prairies & grassland, planting mostly corn for ethanol. If we have another long drought, we'll have a repeat disaster. Not to mention that grocery prices keep climbing. We can't afford beef anymore. I've been opposed to ethanol from the beginning. Never made sense to burn food in our cars when so many people are starving in the world!

1 ^ | v · Share ›



**Alex Johnson** → KLH6 · 9 months ago

I'll ship you some field corn. You can eat all you want. Its not very tasty.

3 ^ | v · Share ›



**George** · 9 months ago

Are we still taxing ethanol made from sugar beets in Brazil while subsidizing ethanol made from corn in the US? That's idiotic anyway, but especially so in light of these secondary effects reported here.

1 ^ | v · Share ›



**Alex Johnson** → George · 9 months ago

No, those programs ended back in 2011. And Brazilian ethanol is made from sugar cane.

^ | v · Share ›



**Ike\_Kiefer** → Alex Johnson · 9 months ago

Alex,

You mean the sugar cane that is a tasty food crop that is traded on the international markets as #11 Sugar and yet is somehow called an "advanced biofuel" by the US EPA so it can receive huge subsidies for import into the United States, completely undermining the argument for achieving energy security through domestic fuel production?

2 ^ | v · Share ›



**TokenSuthener** → Ike\_Kiefer · 9 months ago

Brazil or the Middle East? Futbol or Radicalism?

^ | v · Share ›



**Ike\_Kiefer** → TokenSuthener · 9 months ago

False dichotomy. It's not Brazil v. ME, it's Brazil v. USA. Why are we subsidizing foreign fuels that compete with food when we can produce plenty of fossil and nuclear energy here? Answer: for the same reason as three guys in San Francisco can throw together a website in a week that blows healthcaredotgov out of the water -- a federal government that operates on ideology instead of reality and whose goal is to buy votes instead of serve voters (see thehealthsherpapadotcom).

^ | v · Share ›



**Ike\_Kiefer** · 9 months ago

The US Federal government has known the impossibility of crop-based biofuels and their devastating environmental consequences since the Energy Research Advisory Board on Gasohol reported its findings in April of 1980. Experts in physics and biology know that there are hard limits as to how much solar energy can be converted into biomass by photosynthesis. that these

limits as to how much solar energy can be converted into biomass by photosynthesis, that these limits are too low to make enough fuel per acre to be economical or to make a dent in the demand, and that the only way to make more biomass per acre is to artificially pump energy directly into the ground from fossil fuel natural gas converted into ammonia fertilizer. The whole cultivated crop biofuels industry -- whether first generation corn ethanol or advanced microalgae biodiesel -- ultimately breaks down to the hidden conversion of fossil fuel energy into liquid fuels. The fact that there is biomass in the middle actually makes the biofuels processes less efficient than inorganic natural gas-to-liquid (NGTL) processes such as Fischer-Tropsch synthesis.

^ | v · Share ›



Clarke Pauley · 9 months ago

Let's remember that it was the Energy Policy Act of 2005, signed into law by George W. Bush, that put ethanol at the core of our renewable fuels energy strategy. Fortunately, ethanol (and to a certain extent its shortcomings) sparked additional R&D into other advanced biofuels which are just now becoming viable at commercial scale.

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