ARTICLES

The Truth About Tire Pressure

Motorists could save more than 1 billion gallons of fuel a year, right now. But expanded offshore drilling would eventually produce even more.

By Brooks Jackson Posted on August 14, 2008

Summary

We are issuing a split decision in the Obama vs. McCain dispute over whether proper tire inflation could save as much oil as expanded offshore drilling is likely to produce.

We find that proper tire inflation could save more than a billion gallons of fuel per year and do it several years sooner than expanded drilling could produce a single drop. McCain has exaggerated by representing Obama's suggestion as a silly notion or implying that it constitutes his entire energy policy.

But we also figure that expanded offshore drilling is projected to produce far more oil eventually than can be saved by proper tire inflation – nearly three times as much even by the conservative estimate of government experts, and more than 10 times as much if an industry-endorsed estimate is correct. And even taking into account additional fuel savings from tune-ups, which Obama also mentioned, he greatly exaggerated.

Analysis

We've been receiving a steady flow of inquiries about this matter ever since it was touched off by a remark that Sen. Barack Obama made on July 30:

> ***Obama:*** *Making sure your tires are properly inflated, simple thing, but we could save all the oil that they're talking about getting off drilling, if everybody was just inflating their tires and getting regular tune-ups. You could actually save just as much.*

Sen. John McCain ridiculed Obama for that remark. His campaign launched a fundraising effort offering tire gauges with the words "Obama's Energy Plan" emblazoned on them. McCain said at a motorcycle rally in Sturgis, S.D., on Aug. 5:

> ***McCain:*** *My opponent doesn't want to drill, he doesn't want nuclear power, he wants you to inflate your tires.*

McCain exaggerates. Obama's energy plan calls for much more than conservation measures (and, in fact, doesn't contain any language about tire inflation). It includes a proposal to spend

$150 billion over the next decade to, among other things, improve fuel efficiency and develop new fuels and vehicles.

But was Obama exaggerating as well? Others have come up with conflicting answers.

ABCNews.com tossed off a quick piece quoting a single expert as saying that proper tire inflation could produce savings equal to "a tidy sum and a worthwhile target" but still "not equal" to the added production to be expected from expanded drilling. TIME magazine concluded "Obama is right" after quoting a couple of general estimates about fuel savings.

- PolitiFact.com drilled more deeply than either of those and concluded that Obama's statement is "true" even accepting the McCain campaign's preferred estimate for savings attributable to proper tire pressure.

We've continued to explore this subject. We conclude that Obama's statement is by no means as silly as McCain tried to make it sound, but it is a rather large exaggeration nonetheless.

Tire Pressure: Wasting 1.2 Billion Gallons

Let's start with tire pressure. Even McCain finally admitted Aug. 5 that keeping tires properly inflated is a good idea and can save fuel:

> ***McCain:*** *Obama said a couple of days ago says we all should inflate our tires. I don't disagree with that. The American Automobile Association strongly recommends it.*

He's right; they do. And government experts agree: According to FuelEconomy.gov, a Web site jointly administered by the Department of Energy and the Environmental Protection Agency, "You can improve your gas mileage by around 3.3 percent by keeping your tires inflated to the proper pressure."

But how many Americans are driving around on soft tires? According to a National Highway Traffic and Safety Administration 2001 survey, 26 percent of passenger cars and 29 percent of light trucks were found to have at least one tire that was 25 percent below the manufacturer's required level. That's more than a quarter of all motorists running on one or more soft tires. So the savings could certainly add up. But add up to what?

Some have used an estimate of 2.8 billion gallons per year, but we think that's too high. That comes from a release issued last April by the Rubber Manufacturers Association and others in connection with an event in California. One tire executive was quoted as saying that "tire experts speculate" that U.S. drivers waste 2.8 billion gallons of gasoline per year because of under-inflated tires. But we could not find support for that figure, and a spokeswoman for the Rubber Manufacturers Association told us that the estimate was "not scientific."

A far more authoritative estimate comes from the U.S. Government Accountability Office, which puts the figure at 1.2 billion gallons of fuel per year. In a report dated Feb. 9, 2007, GAO says:

> ***GAO:*** *The Department of Energy's designated economist on this issue indicated that, of the 130 billion gallons of fuel that the Transportation Research Board (TRB) estimated were used in passenger cars and light trucks in 2005, about 1.2 billion gallons were wasted as a result of driving on underinflated tires.*

That figures out to be just under 1 percent of all fuel consumed by autos and light trucks. But would saving 1.2 billion gallons of fuel per year equal the expected increase in oil production from opening up offshore areas to drilling? For the next several years, yes. But after that, probably not, according to the best estimates we can find.

How Much Oil?

Nobody can say for sure how much oil lies under the sea in the areas currently off-limits to drilling, and estimates of potential production from these areas over the next 15 to 20 years vary widely. The Energy Information Administration of the U.S. Department of Energy – which we've quoted a number of times in the past – is conservative compared with estimates that appeared in a 2007 report from the National Petroleum Council, a group which exists "to represent the views of the oil and natural gas industries" before the federal government. The estimates in the NPC report were taken from a 2006 report done for the Department of Energy by a private research firm called Advanced Resources International.

Offshore Oil Predictions
Estimated results from expanded drilling in Outer Continental Shelf

	EIA	NPC/ARI
Added barrels per day, 2025	220,000	990,000
% of total U.S. crude-oil consumption	1.4%	6.1%
Years to start first production	4-6	3

According to EIA's official projection, allowing drilling in Outer Continental Shelf areas that currently are off-limits in the Gulf of Mexico and off the Atlantic and Pacific coasts of the lower 48 states would produce an additional 220,000 barrels per day by the year 2025. The more optimistic ARI assessment predicts an increase of 990,000 barrels per day by 2025.

ARI's prediction is more than four times larger than the official government prediction. The DOE expects only enough oil to equal about 1.4 percent of total U.S. demand, while ARI's prediction would amount to more than 6 percent.

ARI also predicts that oil could start flowing as quickly as three years after offshore areas are opened up, at least in those areas where leasing could begin immediately. But Phyllis Martin, an EIA senior energy analyst, projects a longer lead time. She predicts it would take two to three years for the Interior Department's Minerals Management Service to put a leasing program into

place, and another two to three years for oil companies to explore and drill the first producing wells, for a total delay of four to six years.

We're in no position to judge which estimate is closer to the truth. We can say that government experts aren't convinced by ARI's arguments. The EIA's Martin says the size of the oil fields expected to be found are "in general smaller" than those currently producing in the Gulf of Mexico, for one thing. Another factor is that most of what would be opened are "deep-water" areas, which the EIA defines as being more than 200 meters (656 feet) below the surface. "The high cost of deep-water exploratory drilling and deep-water production platforms is an additional factor that could initially hold back production," Martin says. "A lot of these areas may not be economically attractive to produce at this time." Indeed, it's reported that the cost of renting a high-end deep-water drilling rig now runs between $500,000 and $550,000 a day. Other reports put the going rate at $600,000 a day.

As for ARI's prediction that leasing could start immediately in some places, Martin predicts that it would take two or three years just to put a leasing program into place. And while the government might be able to speed up the start of leasing, another two to three years is required for exploring and drilling after a lease is approved. ARI's projection, too, assumes about a three-year lead time to find any new oil after a lease has been granted. "This is going to require time and personnel," Martin says, "and the industry is really constrained right now in terms of available personnel. And all of the [drilling] rigs right now are currently operating." Indeed, the New York Times reported June 19 that a global shortage of deep-water drilling rigs is causing a "critical bottleneck" in drilling where oil is known to exist or exploring for new offshore fields.

Was Obama Right?

Tires can be inflated quickly, so it's clear that paying proper attention to tire pressure could save more fuel than expanded drilling for several years, until drilling begins to produce significant additional amounts of oil. But what then?

By the year 2025, if even the lower of the two offshore drilling estimates proved to be correct, it would exceed the estimated 1.2 billion gallons of fuel per year that could be saved through proper tire inflation alone. Since each 42-gallon barrel of oil produces 19.15 gallons of gasoline

(using 2007 figures), the peak output of oil that EIA expects from expanded offshore drilling would work out to be more than 1.5 billion gallons of gasoline per year. That's significantly more than the 1.2 billion gallons that GAO estimates can be saved from proper tire inflation, and it doesn't even take into account the possibility that actual production could be closer to ARI's much higher expectations. If those projections turn out to be correct, the added offshore production would yield nearly 7 billion gallons per year of additional gasoline.

Yet even these figures don't tell us everything. Each barrel of oil also produces more than 9 gallons of diesel fuel, 3 gallons of jet fuel and additional amounts of home heating oil and heavy "residual" fuel oil, among other products. Just saving gasoline can't possibly compensate for everything that would come from each added barrel of oil, at least not directly.

We note here that Obama didn't say we could "save all the gasoline" expected from expanded offshore drilling; he said "we could save all the oil' (our emphasis). So it's not enough to estimate only how much gasoline would result, we must somehow figure how much gasoline must be saved to offset, indirectly, everything that comes from a barrel of oil. We make the simple assumption that saving a gallon of gasoline offsets a gallon of diesel, jet fuel or any other product that comes from the added oil, and go on from there. And that makes the numbers much bigger.

Oddly, each 42-gallon barrel of oil actually yields between 44 and 45 gallons of refined product, according to the Energy Information Administration. This is due to something called "processing gain," which happens when crude oil is made into products which, in total, have a lower specific gravity than the oil itself – like gasoline. So ending the ban on offshore drilling would result in 3.5 billion gallons of petroleum product per year under the government's estimate, and nearly 16 billion gallons if ARI's prediction turns out to be accurate. Both those figures are far beyond the 1.2 billion gallon savings to be expected from proper tire pressure.

The Ethanol Factor

And that 1.2 billion estimate refers to "fuel," not gasoline. Many motorists today are burning fuel that is blended with ethanol. As a national average, EIA says that what motorists put in their tanks now is between 4 percent and 5 percent ethanol. That means for every gallon of fuel saved by proper tire pressure, about 95 percent to 96 percent is gasoline. So the 1.2 billion gallons of "fuel" that the GAO says could be saved would work out to be as little as 1.14 billion gallons of gasoline at the current rate of ethanol use. And that rate is due to rise. A law passed in 2007 requires ever-increasing amounts of ethanol to be blended into auto fuel. The EPA's Renewable Fuel Standard program will require that 36 billion gallons per year of ethanol be blended in by 2022, quadruple the current 9 billion gallons.

But even without factoring in a correction for ethanol, it is clear that the GAO's estimate of savings from proper tire inflation is only a little better than one-third of the amount needed to offset the EIA's conservative estimate of increased offshore production, and less than a tenth of what would be needed to offset the increase in oil ARI says it expects.

The Truth About Tune-ups

Although the public discussion has centered mostly on tire pressure, Obama also included "regular tune-ups" in his equation. The total savings that could be expected here, we judge, are modest compared with what might be saved through proper tire inflation.

It's true that any individual motorist might be wasting a lot of fuel because of improper auto maintenance. Driving with a badly clogged air filter, for example, can cut mileage by as much as 10 percent, according to the government's Web site FuelEconomy.gov. And correcting a "serious" maintenance problem such as a faulty oxygen sensor can save as much as 40 percent in fuel, according to the site. It says the average fuel savings from tuning up a car that is "noticeably out of tune or has failed an emissions test" is 4 percent.

But we've found no data on how many motorists are operating cars that are "noticeably out of tune" or have serious maintenance problems or clogged air filters, so it's not possible for us to estimate from those figures how many gallons of fuel could be saved each year if all such problems were corrected. But we doubt very much that the possible savings is anything close to what could be achieved through proper tire pressure. The reason is that modern autos seldom, if ever, need tune-ups.

In the past, regular tune-ups were needed because cars used mechanical ignition systems that relied on points, rotors and distributor caps that wore and needed frequent adjustment. Today's cars have electronic ignition systems that seldom need attention. Older cars mainly used carburetors to mix fuel, and they also tended to get out of adjustment and require frequent tweaking. Today's cars mainly rely on fuel injection. Modern autos also come with platinum-tipped spark plugs that can last 100,000 miles, and air filters that typically don't need replacement for 30,000 miles. So the old-fashioned tune-up is pretty much a thing of the past.

We tend to agree with author-mechanic Theodore Olson, who writes: "Unless your vehicle is misfiring (i.e., not running on all cylinders), your gas mileage is likely fine." We're not saying that motorists should skip factory-recommended maintenance, such as regular oil changes. That's a good way to shorten the useful life of the vehicle. We just see no evidence that much fuel would be saved even if everybody followed their owner's manual.

But for the sake of argument, even if one assumed that another 1 billion gallons of fuel could be saved each year from proper tune-ups – and again, we've seen no evidence to support that idea – the combination of tire pressure and tune-ups wouldn't equal in savings what the government expects from increased offshore production once it reaches a peak. And it would be only a small fraction of what ARI and the NPC expects.

— by Brooks Jackson and Emi Kolawole

Technical Notes:

- ARI's report also predicts an increase of 20,000 barrels per day from opening up the Northern Aleutian Basin to offshore drilling, and the summary of the NPC's report speaks of "more than 1 million" barrels of increased production. But the Aleutian basin had already been opened by Congress and President Bush by the time the NPC paper with the ARI

predictions was published. We have counted here only the 990,000 barrels per day that ARI expects from opening areas in the Gulf of Mexico and off the Pacific and Atlantic seaboards, the same offshore areas covered by the EIA's estimate.

- EIA's published tables show no increase in production until the year 2016, but Martin states that these are based on an assumption that the current ban will remain in place until it is set to expire in 2012. For our analysis, we assume that the ban would be lifted immediately as proposed by McCain and others.

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