

MEDIAMATTERS FOR AMERICA

Myths And Facts About Electric Cars

February 08, 2012 4:11 pm ET

As automakers are starting to bring electric vehicle (EV) technology into the mainstream, conservative media outlets have repeatedly misled consumers about electric cars by trying to paint them as environmentally harmful and unsafe, among other false claims.

CONSERVATIVE MEDIA OUTLETS ARE CAMPAIGNING AGAINST THE ELECTRIC CAR BY:

[Denying That EVs Reduce Carbon Dioxide Emissions](#)

[Downplaying EV Sales](#)

[Misleading About EV Distance Range](#)

[Distorting Volt Safety](#)

[Feigning Concern About Battery Disposal](#)

[Spinning Consumer Tax Credits](#)

[Fearmongering About The Electric Grid](#)

[Overstating Subsidies For Volt](#)

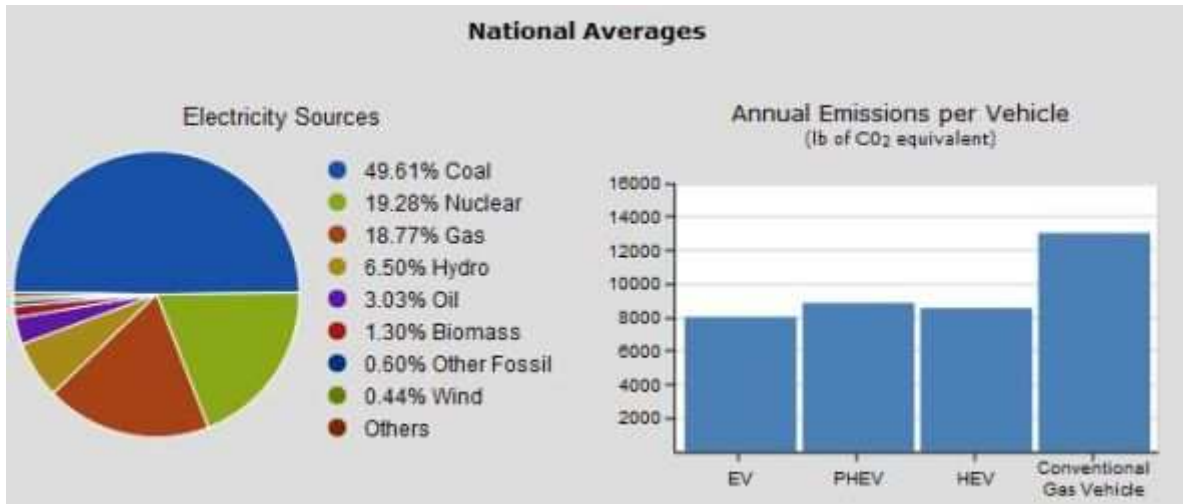
Conservative Media Pummel Emerging Industry With Misleading Claims

MYTH: ELECTRIC CARS DO NOT REDUCE CO2 EMISSIONS

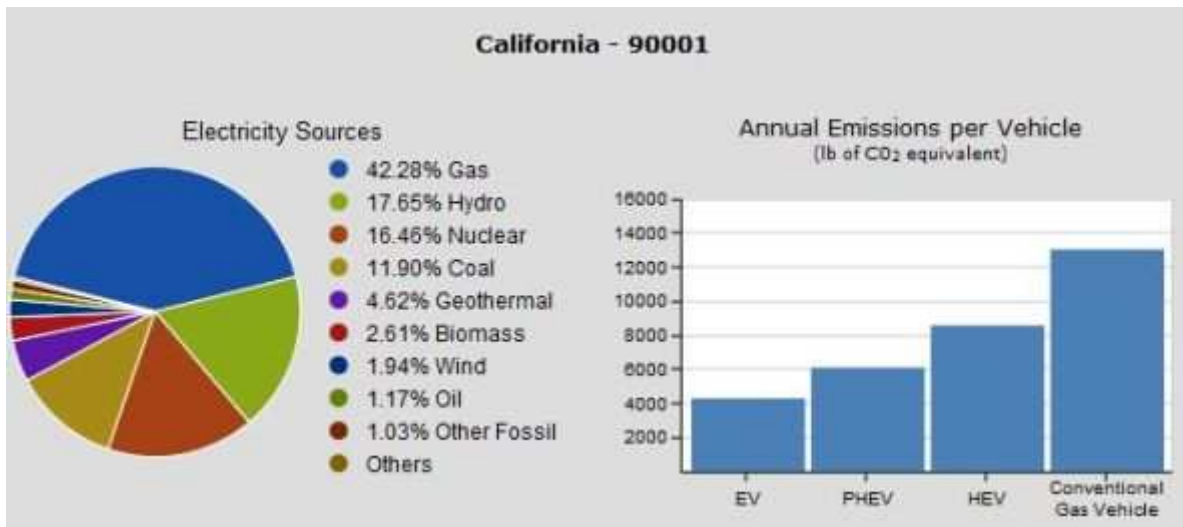
- Fox News' Greg Gutfeld said that "the entire reason for doing these stupid little cars is a lie" because electricity "comes from coal. In some cases, some studies show that these can produce more pollution than internal combustion engines." [Fox News, *The Five*, 1/27/12, via Nexis]
- Jonah Goldberg wrote in a *Chicago Tribune* op-ed: "The point is to reduce CO2 emissions, right? But in some regions, we get our electricity from CO2-spewing coal. The more electricity pulled from the grid, the more coal is burned, essentially replacing dirty oil with dirtier coal." [*Chicago Tribune*, 8/10/10]
- A *Washington Times* editorial said that when a person uses an electric car, "instead of coming out the tailpipe, the unwanted carbon-dioxide molecules are instead released at the power plant, which is generally coal-fired well outside their view." [*Washington Times*, 1/17/12]

FACT: ELECTRIC VEHICLES CAUSE SUBSTANTIALLY FEWER CO2 EMISSIONS

Electric Vehicles Emit Less CO2 Even If Coal Supplies The Power. This chart from the Department of Energy shows that, even though coal is the source of nearly half the nation's electricity, all-electric vehicles (EV) like the Nissan Leaf, and plug-in hybrid electric vehicles (PHEV) like the Chevy Volt cause on average substantially less carbon dioxide emissions than conventional gasoline-powered vehicles:



In states like Indiana that are heavily reliant on coal-fired power, hybrid cars cause fewer emissions than plug-in EVs, but EVs still cause fewer emissions than conventional gasoline powered cars. In areas where electric car sales are high, EVs are significantly more environmentally friendly than the national average. For example, the Los Angeles area is projected by Pike Research to have the second highest electric car sales in the nation over the next 5 years, and carbon emissions for all-electric cars there are nearly half that of the national average:



[Department of Energy, [9/22/11](#)] [Pike Research, [2011](#)]

Study: In Every Scenario, Plug-In Hybrid Electric Cars Reduce Greenhouse Gas Emissions "Significantly." A 2007 study by the Natural Resources Defense Council and the Electric Power Research Institute, which represents electric utilities, examined nine potential scenarios to determine the impact of plug-in hybrid electric vehicle use through 2050. The study found that in each scenario greenhouse gas emissions were "reduced significantly" -- even if the electric sector remained carbon intensive and PHEVs only accounted for 20% of the market in 2050. The study further found that each

region of country would yield reductions in greenhouse gas emissions if PHEVs were adopted. The study was a "well-to-wheels" analysis that accounted for emissions during production of both electricity and gasoline. [EPRI and NRDC, [July 2007](#), via CFR]

U.S. Coal Use Is On The Decline. A January 24 Reuters article shows that as electric car sales ramp up, coal use in the U.S. is decreasing:

U.S. energy-related CO2 emissions will be 7 percent lower than their 2005 level of nearly 6 billion metric tons in 2020 as coal's share of electricity production continues a steady descent over the next two decades, according to new government data.

[...]

"Over the next 25 years, the projected coal share of overall electricity generation falls to 39 percent, well below the 49-percent share seen as recently as 2007, because of slow growth in electricity demand, continued competition from natural gas and renewable plants, and the need to comply with new environmental regulations," it said.

The retirement of old, inefficient coal-fired power plants will outpace new construction, and the report added that gas-fired plants - which are cheaper to build - will generate 13 percent more power in 2012 than they did last year.

[Reuters, [1/24/12](#)]

MYTH: 2011 SALES SHOW AMERICANS WON'T BUY ELECTRIC CARS

- On *The O'Reilly Factor*, Fox News contributor Monica Crowley said: "You know how many Chevy Volts they've sold? Like three because nobody, a) wants to drive a toaster oven for a car. Secondly, we don't have the infrastructure in this country yet to support mass electric cars." [Fox News, *The O'Reilly Factor*, 11/22/11]
- Citing July sales numbers, Eric Bolling said on Fox News that "The only Volts sold are to the government." Co-host Greg Gutfled added that the federal tax credit for purchasing EVs is "like forcing Americans to buy broccoli flavored ice cream." [Fox News, *The Five*, 8/4/11]
- Erin Burnett stated on her CNN show, "Despite all the advertising and the celebrities saying it's cool to drive these cars, we looked at the numbers, and it just doesn't seem to be the truth. GM has sold 5,000 Volts. Nissan, 8,000 Leafs, less than one percent of those companies' total sales." [CNN, *Erin Burnett Out Front*, 11/11/11, via Nexis]

FACT: EV SALES TOPPED FIRST-YEAR HYBRID SALES DESPITE RECESSION

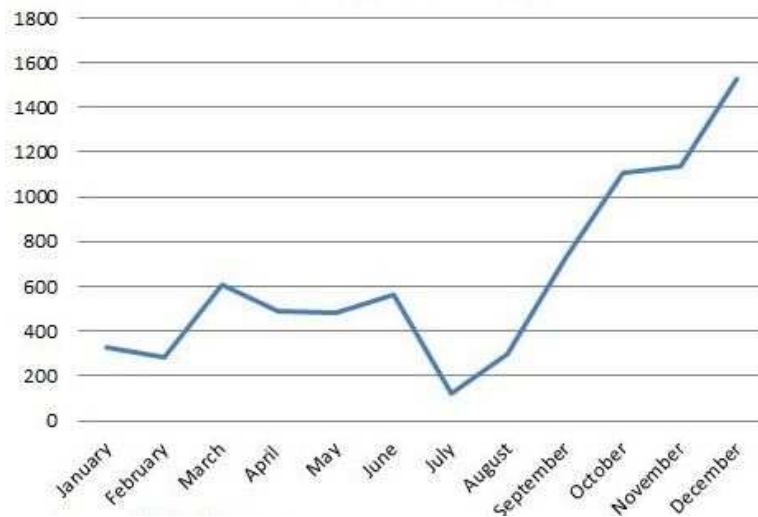
EV Sales In 2011 Were Significantly Higher Than The First Year Hybrid Sales. From a post by the Rocky Mountain Institute:

Figures this week showed that the first mass-produced electric cars in the United States, the Nissan Leaf and Chevrolet Volt, had total sales of 17,345 in 2011, the first year in which they were available. Compared with sales of 9,350 gas-electric hybrids in 2000, the first year the Honda Insight and Toyota Prius were offered in the U.S.--where total hybrid sales have now topped 2 million--17,000 might seem like a decent start for EVs. [Rocky Mountain Institute, [1/5/12](#)]

Media Cherry-Picked Sales Data To Paint Volt As A Failure. Yahoo! Finance ran a piece on December 27 titled "The Worst Product Flops of 2011." The article included the Volt on the list, stating "Only 124 models were sold in July 2011," without mentioning any other sales data. [Yahoo! Finance, [12/27/11](#)]

Gathered from news reports on GM's self-reported sales, the following chart shows that July was an outlier month, and that Volt sales significantly increased in the latter months of 2011:

Chevy Volt Sales



Volt Sales Affected By Lack Of Supply. CNNMoney reported:

GM executives said on the company's conference call that Volt sales have been constrained not by lack of demand, but by lack of supply.

Volt sales had slowed to a trickle during the summer months as GM temporarily shut down the Detroit factory where the car is built. The month-long shut-down allowed GM to revamp the factory in order to boost the car's production volume. [CNNMoney, [12/1/11](#)]

Volt And Leaf Were Not Available Nationwide In 2011. From a Yale Environment 360 report:

But much of the reporting on the subject, and the attacks, failed to tell the full story. Neither the Volt nor Leaf were available nationwide in 2011, and both were plagued by supply problems. Leaf customers on the East Coast, who put down early deposits, should be getting their cars in the coming months, and Nissan hopes to double production and delivery in 2012. The EV technology is still a novelty for prospective buyers, but the necessary charging networks, though still embryonic, **are growing rapidly**.

Yet while the big electric car launches of 2011 failed to find as many buyers as hoped, automakers and analysts still see increasing success for electric vehicles in the U.S. and in global markets, including China, which will soon be the world's largest. The future, they say, lies in new battery technologies that will lower the cost and increase the range of EVs. And tougher mileage standards for U.S. auto fleets, set to kick in over the next decade, will give the cars a big boost. [Yale Environment 360, [1/25/12](#)]

Pike Research: 40% Are "Extremely Or Very Interested" In Purchasing An EV. From the "Electric Vehicle Consumer Survey" by Pike Research:

The survey found that, based on Americans' driving and commute patterns, PEVs should be a strong fit for a large number of consumers. Likewise, survey respondents indicated strong fundamental interest in PEVs, with 40% of participants stating that they would be extremely or very interested in purchasing such a vehicle, assuming the price were right. [Pike Research, [1/5/2012](#)]

EVs Trying To Compete With Artificially Low Gasoline Prices. As *Washington Post* commentator Ezra Klein noted, "the price you pay" for gasoline "is less than the product's true cost. A lot less, actually":

Most of us would call the BP spill a tragedy. Ask an economist what it is, however, and you'll hear a different word: "externality." An externality is a cost that's not paid by the person, or people, using the good that creates the cost. The BP spill is going to cost fishermen, it's going to cost the gulf's ecosystem, and it's going to cost the region's tourism industry. But that cost won't be paid by the people who wanted that oil for their cars. It'll fall on taxpayers, on Gulf Coast residents who need new jobs, on the poisoned wildlife on the seafloor.

That means the gasoline you're buying at the pump is -- stick with me here -- too cheap. The price you pay is less than the product's true cost. A lot less, actually. And it's not just catastrophic spills and dramatic disruptions in the Middle East that add to the price. Gasoline has so many hidden costs that there's a cottage industry devoted to tallying them up. At least the ones that can be tallied up.

Topping that list is air pollution, which we breathe in whether or not we drive. Then there's climate change, which is difficult to slap a price tag on because it involves such esoteric calculations as how much your grandchild's climate is worth. There's traffic congestion and accidents, which harm drivers and non-drivers alike. There's the cost of basing our transportation economy on a resource that undergoes wild price swings.

Some of the best work on this subject has been done by Ian Parry, a senior fellow at Resources for the Future. His calculations -- plus some data from other sources and studies -- suggest that adding all the quantifiable costs into the price of oil would increase the cost of each gallon by about \$1.65. According to the Energy Information Administration, the average price of a gallon of gas was \$2.72 last week. It should really be as high as \$4.37.

That, however, is almost certainly an underestimation. [*The Washington Post*, [6/13/10](#)]

Electric Car Market Hampered By Lack Of Comprehensive Climate Policy. ClimateWire reported:

[MIT] Symposium participants generally agreed that a comprehensive federal policy to limit carbon emissions would be the most effective boost for electric vehicle development, stimulating steadily growing consumer purchases and moving the United States toward low-carbon or carbon-free generation of electricity to charge the cars.

But the summary pessimistically concludes: "The prospect for such a policy at the national level is remote. More likely, is a hodge-podge of state and federal regulation and targeted subsidies for favored technologies."

Leaving the matter to separate states "is sheer lunacy," but that is where the matter is headed, [Professor John] Deutch said.

"We need to continue aggressive R&D on these areas," he said. There was consensus on that point, as well, at the symposium, although the participants differed on how much government support should go to pure research versus manufacturing operations with current technologies. [*Scientific American*, [1/14/11](#)]

MYTH: CONSUMERS WON'T WANT ELECTRIC CARS BECAUSE OF REDUCED RANGE

- Writing for *Forbes*, Patrick J. Michaels of the Cato Institute claimed that "no one has figured out how to produce a comfortable electric car at an affordable (non-subsidized) price that has enough range to be practical for the most of us." [*Forbes*, [8/19/11](#)]
- Fox Business analyst Gary Kaltbaum said the public doesn't want to "buy an electric car where you've got to stop every 40 miles." [*Fox Business*, *Cavuto*, 12/19/11, via Nexis]
- Author and motivational speaker Larry Winget said on Fox Business that "we still can't make an electric car that can go more than 40 miles without a recharge." [*Fox Business*, *The Willis Report*, 12/7/11, via Nexis]

FACT: EV RANGE IS MORE THAN ENOUGH FOR MOST DRIVERS

AutoObserver: Studies Show 72% Of Drivers Travel Less Than 40 Miles A Day. Edmunds AutoObserver reported on October 21:

In a phone interview with AutoObserver last week, Perry said exhaustive data gleaned from the U.S. Department of Energy's [EV Project](#) and from the 7,500 [Nissan Leaf](#) EV (above) hatchbacks now on U.S. roads makes it abundantly clear that "there's no market need" for an EV that gets hundreds of miles between charges.

The data shows that the typical Leaf driver averages 37 miles a day in the car, and that the typical trip length (distance between power on and power off) is seven miles, Perry said. The findings are consistent with studies of conventional-vehicle driving patterns that found that 72 percent of American drivers travel less than 40 miles a day, and 95 percent drive less than 100 miles a day. [AutoObserver, [10/21/11](#)]

Survey: Average Driver Travels 29 Miles Per Day. According to the Federal Highway Administration's most recent National Household Travel Survey, the average driver travels 29 miles per day and the average vehicle trip length is 9.7 miles. [Department of Transportation, [2009](#)]

All-Electric Nissan Leaf Can Travel Over 70 Miles On A Charge. In 2010, the EPA gave the Nissan Leaf an official rating of 73 miles on a full charge. Tests by *Consumer Reports* yielded about 90 miles "in ideal conditions" and about 60 miles "on cold days, with the heater running." One test by Nick Chambers of PluginCars.com showed that the Leaf can travel up to 116 miles on a charge. [CNN Money, [11/24/10](#)] [*Consumer Reports*, [9/30/11](#)] [PluginCars.com, [10/21/10](#)]

Mitsubishi Electric Car Has Projected Range Of 62 Miles. According to the EPA, the 2012 Mitsubishi i-MiEV will travel 62 miles on a charge. The range increases to 98 miles under certain conditions. [GreenCarReports.com, [7/6/11](#)]

Plug-In Hybrids Offer Extended Range. Consumers who need to travel long distances have the option of purchasing plug-in hybrid electric cars like the Chevy Volt or the forthcoming Toyota Prius plug-in hybrid. From Hybridcars.com:

Plug-in hybrids provide the benefits of an electric car, while maintaining the same driving range as conventional vehicles. Plug-in hybrid drivers travel in an all-electric mode for the vast majority of common local driving. When the battery's electric charge is depleted, a downsized gas engine is used to either recharge the batteries (as the car moves), or as the primary source of propulsion until recharging the batteries via a plug.

Plug-in hybrid cars are also known as plug-in hybrid electric vehicles or PHEVs. Plug-in hybrid cars that use a gas engine exclusively for recharging batteries--rather than directly powering the wheels--are also called Extended-Range Electric Vehicles or E-REVs. [Hybridcars.com, accessed [2/2/12](#)]

There Are Over 5,500 Electric Charging Stations. According to the Department of Energy, there are over 5,500 electric charging stations in the country. DOE provides a map of public charging stations on its [website](#). The Department of Energy is investing \$8.5 million to further expand charging infrastructure. [Department of Energy, accessed [2/2/12](#)] [Department of Energy, [9/8/11](#)]

MYTH: VOLT BATTERIES ARE UNSAFE

- In a recent editorial, *The Washington Post* said that "the Volt brand is suffering from news that some of its batteries burst into flames after government road tests." [*Media Matters*, [1/5/12](#)]
- On *The O'Reilly Factor*, Lou Dobbs said the Volt "doesn't work" because "it doesn't go fast and go far on electricity. What happens is it catches fire ... This is considered a negative when we're trying to move an automobile." O'Reilly then repeatedly said that the Volts "catch fire" without mentioning that the fire only happened during a crash test. [*Media Matters*, [1/27/12](#)]
- Neil Cavuto said on his Fox Business show that the Volt is "a plug-in that blows up. The battery heats up. It's killing people. It's maiming them." [*Media Matters*, [1/27/12](#)]

FACT: INVESTIGATORS CONCLUDED VOLTS ARE JUST AS SAFE AS CONVENTIONAL CARS

Battery Fire Happened Weeks After Pole Crash Test And Rollover Test. From the National Highway Traffic Safety Administration's description of the test:

During an NCAP [New Car Assessment Program] oblique side pole impact test conducted by NHTSA in May 2011, the pole struck and deformed the sill plate under the driver's door at a location where there is a structural member. The lateral member displaced inward, pierced the HV battery enclosure and battery, and caused a battery coolant leak. Thereafter, the Agency conducted a rollover test (the rollover test consists of four 90-degree rotate-and-hold movements about the vehicle's longitudinal axis). In that test, the HV battery and electronics were exposed to coolant that leaked as a result of the crash. The vehicle fire that occurred three weeks later and the additional testing NHTSA conducted are discussed in a report titled "2011 Chevrolet Volt Battery Fire Incident Report" a copy of which is available in the public file. The report indicates that intrusion induced coolant leakage, and subsequent rollover that saturates electronic components, were the only test conditions which resulted in a subject vehicle HV battery fire. [NHTSA, [1/26/12](#)]

CNN: "No Fires Were Reported In Cars That People Were Actually Driving." CNN's Erin Burnett made clear that fires had only occurred in crash tests, not real-life scenarios:

ERIN BURNETT: Investigators did not find a safety defect. They also supported GM's fix, which reinforces the structure surrounding the battery. No fires were reported in cars that people were actually driving. This came from crash tests. [CNN, *Out Front with Erin Burnett*, [1/20/12](#)]

NHTSA Did Not Drain Battery After Crash, As GM Protocols Require. From an Associated Press report:

General Motors spokesman Greg Martin said the test did not follow procedures developed by GM engineers for handling the Volt after a crash. The engineers tested the Volt's battery pack for more than 300,000 hours to come up with the procedures, which include discharge and disposal of the battery pack, he said.

"Had those protocols been followed after this test, this incident would not have occurred," he said.

[...]

After the crash test, NHTSA found a coolant leak and moved the damaged Volt to a back lot, where it was exposed to the elements, said Rob Peterson, a GM spokesman who specializes in electric cars. Exposure to the weather caused the coolant to crystalize, and that, combined with the remaining charge in the battery, were factors, he said.

NHTSA did not drain the battery of energy as called for under GM's crash procedures. But at the time, GM had not told the agency of its protocols, Peterson said. NHTSA normally drains fuel from gasoline-powered cars after crash tests, he said. [Associated Press, [11/11/11](#), via MSNBC.com]

GM Knows Via OnStar About Any Crash Significant Enough To Compromise The Battery. *The Detroit Free Press* reported:

Chevrolet dealers have sold about 6,000 Volts, all of which are equipped with the OnStar emergency notification system, said GM spokesman Greg Martin.

"There have been no reports of comparable incidences in the field," GM said in a statement. "With Onstar, GM knows in real time about any crash significant enough to potentially compromise battery integrity."

Since July, GM has implemented a process with first responders that includes depowering of the battery after a severe crash. [*Detroit Free Press*, [11/26/11](#)]

GM Provided A Fix To Volt Owners. Automotive News reported:

The agency [NHTSA] said that modifications intended to reinforce the Volt's 435-pound lithium-ion battery pack that General Motors announced on Jan. 5 should "reduce the potential" of the pack catching fire in the days or weeks following a crash.

[...]

Company executives [at GM] say the voluntary fix will make the car "safer" by reinforcing the steel surrounding the battery pack to prevent it from being punctured during a crash. It also will add a sensor to the battery pack to monitor coolant leaks.

GM is asking its 8,000 Volt customers to visit their Chevy dealership to have the work done. Dealers will be ready to perform the work starting in February, GM said. [Automotive News, [1/20/12](#)]

NHTSA Concluded Investigation After Finding "No Discernible Defect Trend." *Wired's* Autopia blog reported:

Federal regulators have closed their investigation into the Chevrolet Volt, saying they are satisfied with the steps General Motors has taken to protect the car's lithium-ion battery and minimize the risk of a fire in the days and weeks after a severe crash.

The National Highway Traffic Safety Administration posted an [explanation and summary of its inquiry](#) on Friday and announced the conclusion of the [investigation it launched Nov. 25](#).

"The agency's investigation has concluded that no discernible defect trend exists and that the vehicle modifications recently developed by General Motors reduce the potential for battery intrusion resulting from side impacts," the feds said in a statement.

The statement adds, "Based on the available data, NHTSA does not believe that Chevy Volts or other electric vehicles pose a greater risk of fire than gasoline-powered vehicles."

The findings vindicate General Motors, which always argued the **Chevrolet Volt** is safe, and electric vehicle advocates who argued that the inquiry was much ado about very little. [*Wired*, Autopia, [1/20/12](#)]

Around 250,000 Conventional Cars Catch Fire In Real-Life Every Year. Brad Plumer wrote on *The Washington Post's* WonkBlog:

[E]lectric cars have recently had to endure panicky headlines over safety, after three separate Volt batteries caught fire in crash tests. On the technical merits, this wasn't a huge worry: The batteries caught fire days or weeks after extreme crash testing in the laboratory, and even then the fires only broke out because post-crash procedures weren't followed. As MSNBC's Dan Carney [snarks](#), "The lesson here is to get out of a crashed car within a few days, and be sure to turn off the lights when exiting." There was also the little-noted fact that, as government statistics [show](#) (PDF), some 250,000 gas-powered vehicles catch fire in real-life settings every year. [*Washington Post's* WonkBlog, [1/9/12](#)]

MYTH: BATTERIES IN ELECTRIC CARS ARE AN ENVIRONMENTAL HAZARD

- A FoxNews.com article about the Chevy Volt claimed "the industry has not figured out how to dispose of 500 plus pounds of highly hazardous lithium [sic] batteries per car." [FoxNews.com, [1/9/12](#)]
- Columnist Rick Martinez wrote that "lithium and other toxic elements and chemicals are needed to make electric car batteries, which don't last forever. Sooner or later, car batteries will surpass computers and televisions as the Earth's most pressing environmental disposal challenge." [*News & Observer*, [3/9/11](#)]
- National Legal and Policy Center's Mark Modica said on Fox Business that "the lithium ion battery production and disposal is a problem itself. There's been studies that show that the Volt is not even as green as an internal combustion engine because of the battery - the lithium battery issue." [Fox Business, *Cavuto*, 10/12/11, via Nexis]

FACT: BATTERY RECYCLING EFFORTS ARE UNDERWAY

EV Batteries Are Not Toxic Like Conventional Lead-Acid Car Batteries. CNNMoney reported:

We've all had to get rid of spent lithium-ion batteries from laptops and cell phones so it's natural to worry about the ones in electric cars.

Won't those eventually have to be disposed of, too? Are they just going to sit rotting in landfills fouling the environment?

Probably not. First, the lithium-ion batteries used in electric cars are less dangerous to the environment than most other batteries to begin with. That's because they don't contain large amounts of toxic rare earth metals. Second, all kinds of batteries, large and small, are routinely recycled and electric car batteries can be, too. [CNNMoney, [12/20/10](#)]

Recycling Firms, Automakers Already Building Infrastructure To Handle EV Batteries. The *New York Times* reported that companies involved in recycling electronics "have already begun spending money to build an infrastructure to handle the flood of partly depleted battery packs" from electric cars. The article further stated:

Toyota Motor, whose experience goes back to 1998, shortly after the introduction of the RAV4 all-electric vehicle, has established partnerships in Europe and the United States to recycle batteries, including from the hybrid Prius. This year, it began shipping some batteries from Prius models sold in the United States to Japan to take advantage of a more-efficient recycling process at home.

Honda Motor recycled nearly 500 batteries during 2009 from the electric hybrid models it began selling in Japan more than a decade ago. But it still is exploring ways to structure that part of its business as it rolls out models like the Insight and the CR-Z.

General Motors and Nissan Motor, whose [Chevrolet Volt](#) and Nissan Leaf are newer to the market, are taking a different tack. They have agreements with power companies to develop ways of reusing old batteries, perhaps for storing wind or [solar energy](#) during peak generating times for later use.

[...]

In the United States, the Department of Energy has granted \$9.5 million to Toxco to build a specialized recycling plant in Ohio for electric vehicle batteries. It is expected to begin operations next year, handling batteries from a variety of makes and models. [*New York Times*, [8/30/11](#)]

Greenwire: Certain Battery Components "Far Too Valuable To Send To The Landfill." Greenwire reported in September 2009 that "though lithium currently fetches very little on the open market, other components in lithium-ion batteries, such as nickel and cobalt, will make the batteries far too valuable to send to the landfill." The report also quoted Linda Gaines of the Argonne National Laboratory, who is studying global lithium supply:

Currently, lithium is mined by only one company in the United States from a brine operation in the Nevada desert, and USGS data show that more than 85 percent of the world's lithium reserves is in Bolivia, Chile and China.

Gaines' research found that the amount of lithium needed for some types of lithium-ion batteries could be cut in half if those batteries are effectively recycled.

"If we had a careful recycling program in the U.S., we could conceivably be self-sufficient," Gaines said. "The ideal would be to take the whole battery apart, clean up the material and recycle them back to battery-grade." [Greenwire, [9/14/09](#), via *Scientific American*]

EV Batteries Could Be Used For Stationary Energy Storage. *Wired's* Autopia blog reported in November 2010:

Energy storage is a growing industry, and automakers see a demand for used packs, which could help make the grid more efficient. Nissan expects demand in Japan to be so great by 2020 that it would need 50,000 EV batteries to meet it. Automakers are confident they'll find buyers because the lithium-ion packs used in electric vehicles are expected to retain

around 70 percent of their storage capacity after 10 years. Although that may not be enough for a commuter who needs **maximum range**, it's fine for stationary applications like backup power in a hospital or load-leveling at a substation.

"We expect to see an entirely new industry arise to use these batteries," said Paul Gustavsson, vice president for business development at Volvo. The company expects to sell its **first electric cars in 2013**. "Every hospital has a huge battery backup in the basement. So do power plants, military installations, some skyscrapers. There's some fascinating business opportunities there that are just now being discovered." [*Wired*, Autopia, [11/24/10](#)]

MYTH: ELECTRIC CAR SUBSIDIES ONLY BENEFIT THE RICH

- In a recent editorial, *The Washington Post* argued against tax credits for EV consumers, in part because "only upper-income consumers can afford to buy an electric vehicle." [*Media Matters*, [1/5/12](#)]
- In an article at FoxNews.com titled "Electric Car Subsidies Transferring Wealth From Poor To The Rich?", William La Jeunesse wrote that "billions in federal subsidies for electric vehicles are going those [sic] who need them the least: the 1 percent." [FoxNews.com, [1/9/12](#)]
- Neil Monroe of The Daily Caller said on Fox Business: "President Obama wants to give \$10,000 per car to wealthy blue state voters that should make Americans see red," adding, "It is redistribution towards the wealthy." [Fox Business, *Cavuto*, 11/3/11, via Nexis]
- Fox Business' Liz MacDonald said: "one percenters, are the only ones who effectively can afford these cars, so why not support, you know, tax breaks for the upper brackets who can buy these cars?" [Fox Business, *Cavuto*, 12/27/11, via Nexis]

FACT: TAX INCENTIVES MAKE ADVANCED TECHNOLOGY ACCESSIBLE TO MIDDLE CLASS

Mitsubishi Electric Car Will Cost \$21,625 After Tax Credit. The all-electric car from Mitsubishi, the i-MiEV, will cost \$29,125 -- or \$21,625 after the \$7,500 federal tax credit. The tax credit makes the price of the i-MiEV comparable to the Toyota Camry, the top selling car in the U.S. in 2011. [Mitsubishi, accessed [1/24/12](#)]

Nissan Leaf Costs \$27,700 After Tax Credit. The 2011 Nissan Leaf, an all-electric vehicle, costs \$27,700 after the federal tax credit. [AutoGuide, [1/3/12](#)]

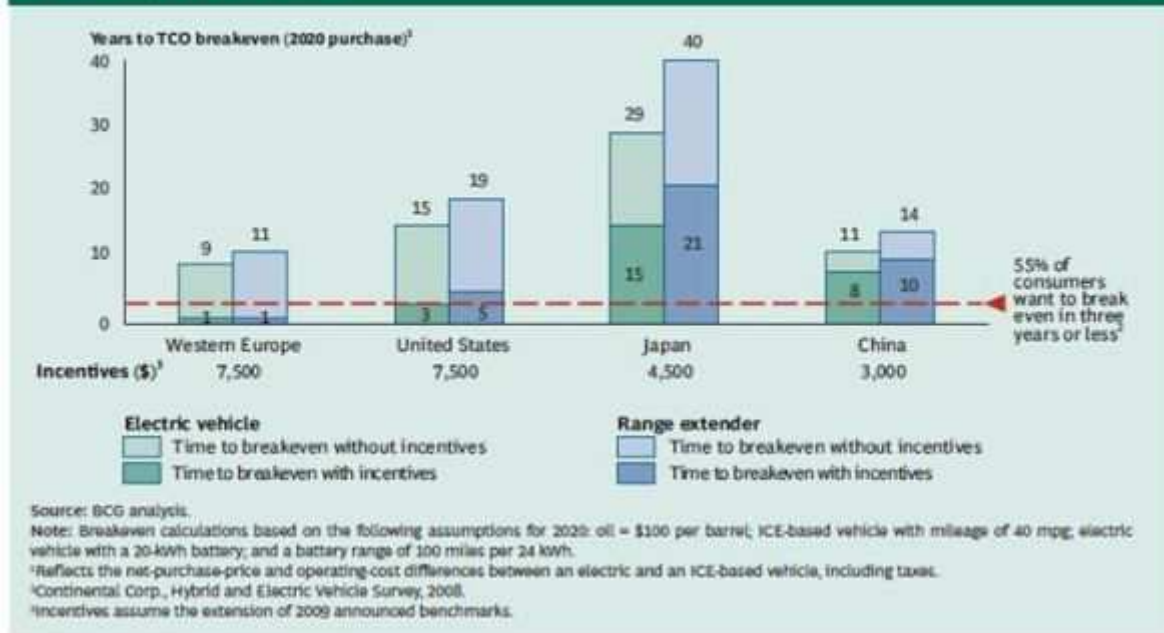
Electric Cars Cost About Five Times Less Than Conventional Vehicles To Operate. According to the Department of Energy, a conventional vehicle costs 10 to 15 cents per mile in fuel to run, while an electric vehicle costs 2 to 4 cents per mile for fuel, based on the average U.S. electricity price. A plug-in hybrid electric vehicle costs 2 to 4 cents per mile when running on electricity, and 5 to 7 cents per mile when running on gasoline. [Department of Energy, [10/3/11](#)]

Study: Battery Costs Will "Decline Steeply As Production Volumes Increase." From an analysis of the electric car battery market by the Boston Consulting Group, a leading consulting firm:

Battery costs will decline steeply as production volumes increase. Individual parts will become less expensive thanks to experience and scale effects. Equipment costs will also drop, lowering depreciation. Higher levels of automation will further trim costs by increasing quality, reducing scrap levels, and cutting labor costs. However, some 25 percent of current battery costs - primarily the cost of raw materials and standard, commoditized parts - are likely to remain relatively independent of production volumes and to change over time.

The analysis also showed how continued government purchase incentives would "directly influence" the total cost of ownership (TCO) of EVs. According to the study, if the incentive programs continue to 2020, consumers in Western nations could recoup the added upfront cost of electric cars in 1-5 years, rather than 9-15 years:

Exhibit 5. With Incentives, Purchasers of Electric Cars in Western Markets Could Break Even in One to Five Years



[Boston Consulting Group, 1/7/10]

Tax Credits For Electric Vehicles Have Bipartisan History. As the following summary from the Congressional Research Service shows, Presidents George H.W. Bush and George W. Bush signed legislation providing tax incentives for the purchase of electric vehicles and other cars that reduce reliance on oil:

EPAct 1992 established tax incentives for the purchase of electric vehicles and "clean-fuel vehicles," including alternative fuel and hybrid vehicles. The Energy Policy Act of 2005 (Section 1341) significantly expanded and extended the vehicle purchase incentives, establishing tax credits for the purchase of fuel cell, hybrid, alternative fuel, and advanced diesel vehicles.

[...]

The Emergency Economic Stabilization Act of 2008 established a tax credit for the purchase of plug-in vehicles, both pure electric vehicles and plug-in hybrids (i.e., gasoline/electric hybrid vehicles that can fuel on gasoline or be recharged from the electric grid.) For passenger vehicles, the credit is a maximum of \$7,500, depending on the vehicle's battery capacity. After sales of vehicles eligible for the credit exceed a total of 250,000 for all manufacturers, the credit is phased out.

[Congressional Research Service, 2/4/10]

Tax Credits Contribute To Development Of American Advanced Battery Industry And Jobs. A Duke University analysis of the U.S. value chain for lithium-ion vehicle batteries stated: "Largely as a result of financial support by federal and state governments, the U.S. domestic lithium-ion battery supply chain is developing very quickly." The report also said "U.S. production capacity has indeed grown very quickly, from just two relevant plants before the ARRA [American Recovery and Reinvestment Act] funding, to 30 planned sites aiming to achieve a projected 20% of world capacity by 2012, and 40% by 2015." [Duke University Center on Globalization, Governance & Competitiveness, 10/5/10]

MYTH: ELECTRIC CARS ARE A THREAT TO THE GRID

- On his Fox Business show, Cavuto stated that electric car owners are "compromising our grid." [Fox Business, *Cavuto*, 12/8/11, via Nexis]
- Fox's Eric Bolling suggested that if a "million" or two million electric cars were on the road, we would have "no ability to charge these cars. The electric -- the power grid right now is on its ear already." [Fox Business, *Happy Hour*, 7/19/09]
- The National Legal and Policy Center's Mark Modica suggested on Fox Business that the "electric grid isn't ready for" the amount of electric cars that advocates want on the road. [Fox Business, *Cavuto*, 10/12/11, via Nexis]

FACT: STUDIES SHOW EVS ARE UNLIKELY TO STRAIN GRID, PARTICULARLY WITH GOOD PLANNING

Studies Indicate That Plug-In Cars Won't Strain The Grid. GreenCarReports noted:

A comprehensive and wide-ranging two-volume study from 2007, Environmental Assessment of Plug-In **Hybrid Vehicles**, looked at the impact of plug-in vehicles on the U.S. electrical grid. It also analyzed the "**wells-to-wheels**" **carbon emissions** of plug-ins versus gasoline cars.

The study is well regarded, in part because of its authors. It was a joint effort by two somewhat unlikely partners: the Electric Power Research Institute (EPRI), which is the utility industry's research arm, and the Natural Resources Defense Council (NRDC).

It looks at the consequences of drivers charging plug-in vehicles at different times during the day. And it assumes a gradual rollout of electric vehicles into the current U.S. fleet of 300 million vehicles. GM, for example, will only sell **10,000 Chevy Volts during all of 2011**.

In practice, this means electric cars will only impose marginal increases on the electric grid. The load of one plug-in recharging (about 2 kilowatts) is roughly the same as that of four or five plasma television sets. Plasma TVs hardly brought worries about grid crashes.

[...]

Knowing all this, the EPRI-NRDC study concluded -- not surprisingly -- that plug-in vehicles won't strain the grid. Two earlier, more limited studies from the Pacific Northwest National Laboratory and Oak Ridge National Laboratory concluded essentially the same thing. [GreenCarReports, **7/13/10**, via Discovery News]

Utilities And Regulators Can Institute Policies To Smooth Demand. A 2011 MIT study on "The Future of the Electric Grid" stated:

The degree to which EVs pose a stress to the power grid depends on their local penetration rate, as well as the power and time at which they charge. If regulators and utilities appropriately influence charging so that it mostly does not coincide with the system peak demand, EVs will improve system load factor and will not cause unmanageable disruption to the bulk generation and transmission system. Otherwise, integrating these loads will require more investment in equipment. [Massachusetts Institute of Technology, **2011**]

Engineers Are Developing New Software To Address Added Demand. *Good* reported:

As I explained in a previous column, some **automakers** with EVs in the pipeline are already working on the issue. Ford, for example, recently joined up with Microsoft Hohm for an in-vehicle charging system in the 2011 electric Ford Focus. The system will allow drivers to schedule vehicle charging during off-peak hours, or times when the grid has capacity to spare.

Microsoft and Ford aren't the only companies working on EV charging software. Google is also working on a platform that will use something called a [vehicle dispatch algorithm](#) to smooth out the electricity load on the grid. And the U.S. Department of Energy's Pacific Northwest National Laboratory is developing a Smart Charger Controller to automatically juice up vehicles when electricity is cheapest and the demand for power is lowest. [[Good,11/11/10](#)]

Electric Cars Could Provide Backup Power For The Electric Grid. Miller-McCune reported in October:

For 15 years, [Willett] Kempton, who directs the University of Delaware's [Center for Carbon-Free Power Integration](#), has pushed the idea that fleets of electric vehicles -- rather than being another big draw on the electric grid -- could provide valuable backup power on demand to utilities. This would reduce the need for costly new generating plants, and help ensure a reliable supply of electricity.

Utilities pay each other billions of dollars a year for such backup power through wholesale electricity markets, and Kempton believes that a hefty slice of that pie could be paid to electric-vehicle owners instead.

Some industry analysts agree that the approach, known as "vehicle-to-grid," could take off; a December 2010 report from the business research firm Global Data conservatively projected a global market for vehicle-to-grid that would pay \$2.3 billion to electric vehicle owners by 2012 -- and \$40 billion by 2020. [Miller-McCune, [10/31/11](#)]

MYTH: EACH VOLT COST TAXPAYERS MORE THAN \$250,000 IN SUBSIDIES

- In a CBS news brief, Ashley Morrison stated: "According to a new report, every car sold so far has cost taxpayers as much as two hundred and fifty thousand dollars." [CBS, *CBS Morning News*, 12/22/11, via Nexis]
- Fox News promoted the figure on *Fox & Friends*, *Special Report*, and *The Five* (twice). Fox Business covered the figure in at least 9 segments. [*Media Matters*, [12/22/11](#)] [Nexis search, 1/20/12]
- Rush Limbaugh and numerous conservative blogs repeated the figure. [RushLimbaugh.com, [1/11/12](#)] [HumanEvents.com, [1/7/12](#)] [*Washington Examiner*, [1/23/12](#)] [National Review Online, [12/21/11](#)] [MichelleMalkin.com, [12/21/11](#)] [Hot Air, [12/21/11](#)]

FACT: SUBSIDY ESTIMATE WAS BASED ON FUZZY MATH

Estimate Includes Subsidies For Supplier Companies And Subsidies That Haven't Actually Been Distributed. The source of the claim that each Volt costs taxpayers \$250,000 in subsidies is James Hohman of the Mackinac Center for Public Policy, a conservative think tank that has received money from fossil fuel interests. The estimate, which Hohman conceded was "simple math," included state and federal subsidies "via tax credits and direct funding for not only General Motors, but other companies supplying parts for the vehicle." It also included subsidies that the companies haven't yet received. Hohman divided that total by 6,000 - the number of Volts sold at the time. [*Media Matters*, [12/22/11](#)]

Finance Writer: "Fundamental Flaw" In The Estimate "Discredits The Entire Report." Writing for TheStreet.com, Anton Wahlman - who said he is "totally opposed to government subsidies" -- stated that "there is a fundamental flaw behind the math in this 'report' that discredits the entire report straight down to zero, in my view." From his post:

Here is the point: Why divide whatever amount -- \$1.5 billion or otherwise -- by the number of Chevrolet Volts sold to date? If he had done this study one year from now, when we could be looking at 60,000 Volts made, as GM repeatedly has promised, the headline number would be \$25,000 per car-- not \$250,000. You would divide the \$1.5 billion by 60,000 instead of 6,000.

But why stop at a year from now? This investment in automotive propulsion technology is meant to be refined and influence generations of cars for decades. Some part of GM's Voltec architecture and techniques will drive sales of approximately 60 million cars over the next 25 years or so, in any reasonable estimation.

[...]

The absurdity of the math used can be further shown by asking what the study would have yielded if it had been done six months ago or a year ago. Six months ago, 3,000 Volts had been sold and therefore the implied subsidy was \$500,000 per car -- half as many cars, twice the subsidy per car. One year ago, the first Volt was sold and therefore this one car must have cost \$1.5 billion, according to the reasoning by the people who wrote the headlines around this study.

This is the way it works in almost every industry. The first iPad manufactured probably cost Apple \$100 million or whatever. Does that mean Apple lost \$100 million minus \$500 on this iPad? Of course not. The development cost for any product is written off across large volumes, typically multiple generations, where both hardware and software accumulate constantly. [TheStreet.com, [12/22/11](#)]

— J.K.F. & S.T.