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Electric Avenue

By SETH FLETCHER

THE American response to rising gas prices has been depressingly predictable. We're shocked to see prices top \$4 a gallon, as if it's never happened before. We demand that something be done — not to reduce our dependence on oil, but to cut the cost of a fill-up. Fortunately the White House is standing behind a goal [that could genuinely transform the nation's automotive fleet](#): putting one million electric vehicles on the road by 2015.

The plan is ambitious, but it's more realistic than its critics maintain. Some argue that because batteries can't yet propel a full-size car 500 miles on the highway and recharge in a few minutes, we should give up and focus on squeezing better mileage out of existing technology.

But many of the electric vehicles that will count toward President Obama's goal won't run on electricity alone. They will combine batteries, electric motors and internal-combustion engines to use as little gasoline as possible while still doing everything Americans expect their cars to do. Electrification is not an all-or-nothing proposition — it's a process, the gradual replacement of gas-burning engines with batteries and electric motors.

The process has already begun. Last December, the first mass-produced electric vehicles of the 21st century — the Chevrolet Volt, which runs on battery power for up to 50 miles before a backup gasoline

engine kicks in, and the Nissan Leaf, a purely battery-powered five-passenger hatchback — began shipping to customers. Tesla Motors has been selling small numbers of expensive electric sports cars since 2008. Ford will soon come out with a plug-in model of its own, and Toyota will release a plug-in version of the Prius hybrid. (The current Prius can only run gas-free for short stretches and at low speeds.)

Purely electric cars like the Leaf never consume gasoline; plug-in hybrids like the Volt can run primarily on electricity. Department of Transportation statistics show that 78 percent of Americans commute 40 miles or fewer a day, so most people who drive a Volt won't need to burn any gas on a normal day.

When cars like these are being driven on a large scale, the benefits will be substantial. The Electrification Coalition, an electric-vehicle advocacy group, estimates that if, by 2040, 75 percent of all miles driven in the United States are powered by electricity, oil consumption by light-duty vehicles will drop from the current level of nearly nine million barrels a day to two million. But getting there will require a mass rollout of these cars, and it will take government assistance to make that happen.

The Obama administration already supports incentives to encourage drivers to buy electric cars, and it has devoted \$2.4 billion in stimulus money to the development of a domestic electric-car industry. The president's 2012 budget request increases financing for battery research and proposes good ideas for accelerating the spread of electric vehicles, including the transformation of the existing \$7,500 tax credit for the purchase of a plug-in vehicle into a point-of-sale rebate, which would give buyers their refund immediately rather than at tax time.

These investments may be too much to expect from a Congress that can barely keep the government running. At the very least, however, President Obama and the Senate must resist pressure to gut renewable energy programs in the name of reducing the deficit — an urge expressed most clearly in Representative Paul D. Ryan's budget plan, which proposes a sizable and profoundly shortsighted cut in financing for energy research and development.

We've been here before. In the mid 1990s, compelled by California air-quality regulations, automakers began leasing small numbers of electric cars, most famously General Motors's EV1. But after the industry succeeded in weakening the regulations, G.M. recalled the EV1s and crushed them in the desert — a process chronicled in the 2006 documentary "Who Killed the Electric Car?"

And that wasn't the first aborted American electric-vehicle effort. In the 1970s, the government responded to the crisis in the oil markets with a surge in financing for alternative energy projects. Scores of chemists turned their attention to battery science and transformed the previously lifeless field.

Then oil became cheap again, and money for battery research dried up. Western battery science languished while the Japanese, looking for better batteries for portable electronics, followed up on the existing research and, in 1991, commercialized the lithium-ion battery. Now the vast majority of the world's lithium-ion batteries, the most valuable and essential component in an electric vehicle, are manufactured in Asia. The United States is scrambling to catch up.

Today, at universities like Stanford and the Massachusetts Institute of Technology and in national laboratories like Argonne and Lawrence Berkeley, scientists are developing technologies that could power a post-oil age — batteries nearly as rich in usable energy as gasoline, which would make cars like the Volt, with their gas-burning backup engines, historical artifacts.

If we gut domestic clean-energy research, scientists in China or Germany or Japan will finish this work. But it would be far better to stick with the program we've begun — financing research into better batteries while deploying vehicles that replace gasoline with electricity as much as possible — and prove that when it comes to energy, America can, in fact, learn from its mistakes.

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