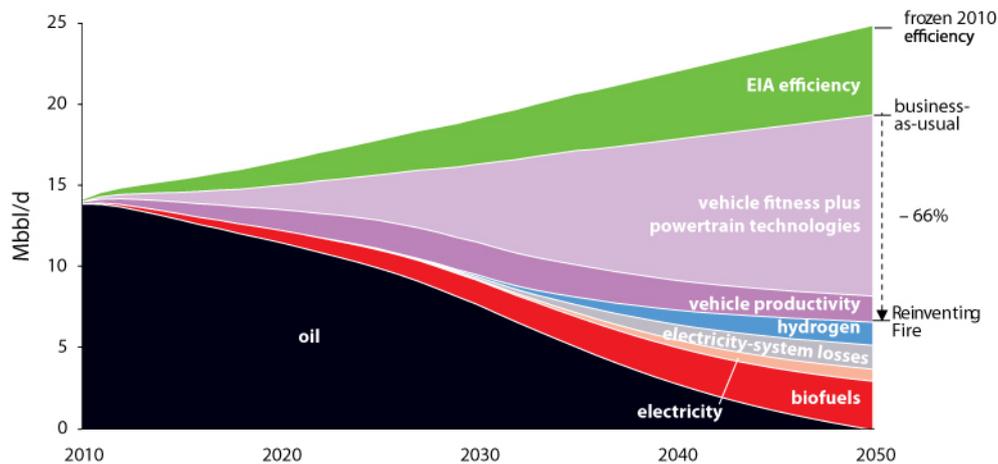


## Houston, You've Got a Problem

Projected decline in U.S. transportation sector fuel use, 2010–2050



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This graphic represents what Amory Lovins and the Rocky Mountain Institute think is a viable pathway to 0% oil use in the [transportation sector](#). It is part of the brilliant [Reinventing Fire](#) scheme "...for running a 158%-bigger U.S. economy in 2050 but needing no oil, no coal, and no nuclear energy." (I use *Reinventing Fire* as a textbook for my graduate class on clean tech.)

How do we get to zero oil use for transportation by 2050? The main component of that compelling future is vehicle electrification. What really fired me up this morning was reading the blockbuster review that the NY Times has just given the new Tesla Model S: [One Big Step for Tesla. One Giant Leap for E.V.'s](#).

Also, in reading a paper by Lovins yesterday - [Proliferation, Oil, and Climate: Solving for Pattern](#) - I was happy to learn that Deutsche Bank thinks that we are coming to "the end of the oil age." The [DB paper](#), from three years ago, reports on a number of felicitous factors that point to the rapid uptake of electric vehicles throughout the world and says "...people tend to underestimate the tempo of change over the long-term, due to a bias towards perceiving and projecting linear rather than exponential growth/adoption functions, and frustration with the recent slow rate of progress. The dovetailing of circumstances enumerated above have given the transportation electrification dynamic a helpful shove, and we now seek the tipping point that will destroy gasoline demand and mark the end of the age of oil."

One of the key steps in getting to the electrification of our surface transportation is perfecting the use of lighter-weight materials. Lovins and Co. discuss [this](#) at length, noting the many felicitous properties of carbon composites, the same materials on which Boeing is relying to produce its revolutionary [Dreamliner](#).

EV's not only avoid the use of oil - a consummation devoutly to be wished for dozens of reasons (like price, war, [pollution](#), etc, etc.) - but they are more efficient in every way than internal combustion engines. As I wrote [here](#) last spring, the inherent gross [inefficiency of the internal combustion engine](#) surpasses even that of [conventional thermal power plants](#). About 5% of the energy in the fuel actually moves a typical automobile. That's a big incentive right there for prospective buyers of electric hybrids and pure electric vehicles.

The sober and smart folks at [Pike Research](#) predict that we'll be selling nearly two million EV's globally by 2020. The Deutsche Bank folks predict that hybrids and electrics will compromise 20% of total world sales by 2020 and a whopping two thirds by 2030!

I had the pleasure of telling the folks at a "[dialogue](#)" sponsored by the Canadian Association of Petroleum Producers last year that I thought their investments might get stranded owing to demand destruction for oil. As I wrote at DeSmogBlog a while back, there is [a glaring paradox](#) in the pursuit of tar sands oil and America's drive to decarbonize energy. Why use this noxious stuff at all when we're trying to get off our addiction to oil? Defense establishments in the US and the UK know [the several threats](#) that oil use imposes and are working to wean their operations from their dependence.

So, as I note above, Houston has got a problem. Or, as the NY Times puts it in their review of the new Tesla: "INSIDE TRACK: Step back, OPEC."