

## Straight Talk About the Economics of This Bill

1. Really serious experts in econometrics know that the future is **highly uncertain**. It is a “game of probabilities.” Thus, for example, bills like HR 2454 claim exact certainty in the 83% reduction in US CO<sub>2</sub> emissions they will lead to in 2050, while the three-digit EPA forecasts say it will actually be reduced by 44% by that bill. Nuclear is predicted with great precision in those forecasts – but real experts know that those forecasts are highly sensitive to assumptions about possible rates of growth and cost, so uncertain that it might be natural gas (shale gas) which replaces coal rather than nuclear, if HR 2454 is passed. To understand what’s going on, we need a sense of the driving variables, their magnitudes, and the probability distributions.
  
2. In contemplating this bill, our economic situation is like unto a worker whose pay has been cut and now has to ask whether to pay for a scheduled oil change or maintenance for his car. If the car is running OK right now, it is tempting just to save the badly needed money. But in fact, without maintenance, the expected costs are a lot higher than the cost of maintenance. He can afford (with pain) to pay for the maintenance – but if the car blows up in his face, he risks real bankruptcy. In a similar way, the present \$3 per gallon price of gasoline is bearable. **If we could really be sure that gasoline will stay at \$3 per gallon forever, even without this new action, and if we could be sure that none of the money we send abroad will end up in the hands of Al Qaida or Hamas, then we should not pass this bill. But it’s high time that we face up to reality on this score. We simply cannot continue to consume imported oil at the quantity we are consuming it now forever, as other nations do the same and return to economic growth, and expect it to stay at \$3 per gallon forever!** Thus the intention of this bill is to improve the net state of the US economy, in the base case, and **to reduce substantial risks to it blowing up**, over the next few decades. The provisions have been tuned so that, together, they get us to a stable, sustainable situation of zero risk (zero import dependency) **as soon as possible**.
  
3. A major part of the ‘game’ here (the implicit strategy underlying this bill) is to ACT NOW as if oil were already back to \$150 per barrel. Why is this economically rational and profitable? If we do not take special action now, and let oil return to its previous trends, there is good reason to believe it will return to \$150 per barrel in a few years, and stay there. The basic facts are clear: (1) nonOPEC oil has been steadily declining, despite strong actions and incentives the world over to shore it up; (2) OPEC has basically been able to hold down its output to a constant level for many years, and has little reason to stop short of \$150 per barrel; (3) when you add inelastic markets to world economic growth, the supply and demand curves look more like \$10-\$20 per gallon (and a \$2 trillion/year import bill) than going back to just gas at \$4.50. **THROUGH STRONG ACTION LIKE THIS**, we might well “buy” a world oil price less than \$150 per barrel forever; if we do, it’s a big net profit for us (and a huge reduction in risk). If this action is not strong enough to achieve that goal, and oil does go over \$150/barrel, then at least we can be sure that all investments of private and public money under this bill were good investments, and profitable so far as they go. More concretely – oil is not likely to stay under \$150 per barrel, in the world market as it is, without a huge infusion of alternate fuels like natural gas, electricity, and alternate liquid fuels; if those fuels are the economic future, we will not regret a bill like this which creates a level playing field to encourage more of them in total.

3b. technical comment: Many have said that the \$150 per barrel price in 2008 was half a matter of high marginal costs, due to supply and demand pressures at that time, and have due to “speculation about the future.” Financial and regulatory changes have largely wiped out that “speculative” part in 2009 so far. **However**, in a rational market, the “speculative” part should not be wiped out. It represents “Hotelling rent,” a totally legitimate kind of foresight regarding future values and trends. If the US suppresses Hotelling rent in our valuations, this does not stop other nations from including it in theirs – by buying up all kinds of resources, so that the price does rise back up in the end, and they reap all the arbitrage profits. If we do not pass this bill, that is what to expect. They have already begun those kinds of investments.

4. The most controversial part of this bill may well be the support prices for coal-based fuel for cars and renewable liquid fuels, and the Open Fuel Standard. Yet the economics is most clear in favor of those two. The support prices are especially beneficial – stimulating **private-sector** investment at a time of underemployment, when private sector stimulus is badly needed, based on providing a kind of guarantee that probably will not cost the taxpayer a penny in the end! The worst risk is that some part of our fuel demand will cost us \$100 per barrel – but that’s less than what we paid per barrel for all of our oil just a year ago! Likewise, the Open Fuel Standard will eventually cost us something under \$100 per car for 15 million cars per year -- \$1.5 billion per year (not from government funds in this section) – but is likely to have much larger annual benefits to car drivers within a short time. The Methanol Institute estimates that there will be slack methanol production out there in 3-5 years enough to meet 10% of US car fuel needs, at a price more than \$1 per gallon of gasoline equivalent cheaper than gasoline; that’s worth about \$10 billion per year of benefit to consumers, as soon as we get up to 10% flexible cars, **in addition to** the benefits in being able to use more biofuels, etc. Not everyone will get those benefits in the first few years as the new cars trickle in – but the folks who pay the <\$100 extra by having flexible cars will be the ones who get to save more on fuel costs.
5. The Low-Carbon Fuels section aims at providing a “push” as well as a pull to the alternative fuels. Because it guarantees a level playing field between the three big alternatives – gaseous fuel, alternative liquid fuel and electricity – we do not need to debate which of the three will work out. We are letting the market decide that, in this provision. We can be sure that this is the direction we have to go in anyway, to have any hope of oil staying under \$150 per barrel.

Some critics of LCFS and RFS argued that we could not possibly ramp up biofuels production fast enough to meet this very ambitious schedule. But they have used obsolete numbers on biofuel capacity expansion and technology in those arguments. In the past few years, biofuel production has ramped up very quickly ([http://www.ethanolrfa.org/objects/pdf/outlook/RFA\\_Outlook\\_2009.pdf](http://www.ethanolrfa.org/objects/pdf/outlook/RFA_Outlook_2009.pdf)), and could clearly ramp up even faster now that new catalyst plants are coming online. In addition, this provision also allows fuels other than biofuels to meet the requirements. The critics have also asked whether the fuel production will actually make it to fuel refueling stations; the tax incentives for fuel refueling stations should have substantial impact (at relatively low cost) on that key issue.
6. The tax incentives for vehicle mainly just extend incentives in present law, and tighten up the requirements for them. The outyear incentives for plug-in hybrids are less than in present law, but still sizeable, and enough to provide a level playing field across the major alternatives. We need these new cars on the road as soon as possible, and we have unused capacity to produce more of them. This is by far the most expensive part of this bill, but the US must pay for these cars to have any chance of getting off of oil imports, and the cost is still well under the \$700 billion/year the US will have to pay if oil goes back to \$150 per barrel and we do not reduce our imports. Unlike the existing large tax incentives for other forms of energy, these still have a sunset provision – to take effect when the job is close enough to being finished justify letting go.
7. In addition to the alternatives encouraged here (which do include shale gas), what about shale oil? That is a very controversial issue; this bill focuses on urgent matters which can hopefully get nonpartisan agreement. Many Senators believe that we need to accelerate shale oil in addition to what is proposed here. Others may believe that shale oil should be discouraged because of the high greenhouse emissions during the production of shale oil. Because there are major economic and technical debates about shale oil which are not yet fully resolved, and new action at this level is not needed now anyway, this bill basically defers action on shale to later Congresses and to other debates.