Mass Produced Electric Cars? Sooner Than You Think

WASHINGTON – The still unresolved issue that will determine if and when there will be real mass demand for Electric Vehicles, EVs, is how to design and manufacture cheaper, lighter batteries for EVs with a higher energy reservoir, and therefore capable of traveling longer distances with one electric charge.

Getting there

The optimists tell us that we are getting there. They cite significant technological innovations and dramatic cost reductions already achieved in the past few years. All true. Batteries are cheaper. EVs now can travel farther. And the optimists also tell us that new collaborative efforts now underway may help expedite additional progress in battery design and effectiveness.

Cheaper batteries, coming soon

Here is a good example. "*Cheaper, more powerful electric car batteries are on the horizon*." This headline appeared on ScienceDaily, 9 August 2016. The story is about a new joint effort linking the U.S. Department of Energy, several U.S. academic institutions and the private sector, under the leadership of a Binghamton University expert.

"The White House –Science Daily wrote– *recently announced the creation of the Battery500 Consortium, a multidisciplinary group led by the U.S. Department of Energy (DOE), Pacific Northwest National Laboratory (PNNL) working to reduce the cost of vehicle battery technologies. The Battery500 Consortium will receive an award of up to $10 million per year for five years to drive progress on DOE's goal of reducing the cost of vehicle battery technologies."*

“[Assuming success, this effort] will result in a significantly smaller, lighter weight, less expensive battery pack (below $100/kWh) and more affordable electric vehicles.

M. Stanley Whittingham, distinguished professor of chemistry at Binghamton University, will lead his Energy Storage team in the charge.”

“We hope to extract as much energy as possible while, at the same time, producing a battery that is smaller and cheaper to produce,” said Whittingham. “This consortium includes some of the brightest minds in the field, and I look forward to working with them to create lithium batteries that will power future electric vehicles more affordably.”

According to the Science Daily story, other Battery500 Consortium members include:

- *Pacific Northwest National Laboratory*
- *Brookhaven National Laboratory*
- *Idaho National Laboratory*
- *SLAC National Accelerator Laboratory*
- *Stanford University*
- *University of California, San Diego*
- *University of Texas at Austin*
- *University of Washington*
- *IBM (advisory board member)*
- *Tesla Motors, Inc. (advisory board member)*

Breakthrough?

Well, is this an indication that we are on the verge of a major breakthrough when it comes to the most critical

component of future generation EVs? Who knows, really.

Still, if I were the CEO of a major oil company, I would feel very nervous.

Never mind OPEC and its mixed signals regarding its willingness and ability to freeze/cut production in order to stabilize global oil prices. Never mind the ongoing tensions between political rivals Saudi Arabia and Iran and their potential impact on oil markets.

Oil will become obsolete

The real scary thought is that oil may soon become obsolete. Yes, you got it right: *"Oil may soon become obsolete".*

Of course this will not happen suddenly. And of course there will still be a significant need for many oil derived products other than gasoline for automobiles. (Think jet fuel, diesel for heavy trucks, oil for plastics and other petrochemical products, and a lot more).

Still, the fact is that on a global scale crude is used mostly to produce the gigantic rivers of oil-derived gasoline that end up in the tanks of hundreds of millions of cars powered by internal combustion engines. Tanks that need to be refilled very often with more and more gasoline.

End of the conventional car

If and when cheaper EVs powered by cost-effective new generation batteries hit the road, there will be a fairly rapid revolution. This will be the end of the conventional car powered by an internal combustion engine.

Indeed, an electric charge is much cheaper than filling your tank with gasoline. Much cheaper batteries, assuming some companies will manage to manufacture them relatively soon, will lower the price of future electric vehicles, while increasing the distance EVs can cover with one charge.

As soon as this happens, there will be a consumers-led revolution. Millions of drivers across the world will quickly switch to EVs because they will be finally affordable, dependable, and much cheaper to operate, not to mention far cleaner than their gasoline powered counterparts. (By the way: not entirely clean. EVs run on electricity, a zero emission fuel. However, a significant percentage of electricity in the U.S. and elsewhere is produced by burning coal and natural gas. Which is to say that if you consider the source of their fuel, although emissions free, EVs are still not entirely “clean”).

How soon?

That said, the big, open question for any oil executive is: *“How much time do we have left before the whole oil sector will collapse, due to lack of demand”?*

It is very clear that this revolutionary transformation brought about by mass-produced EVs will happen. But nobody knows when: 5 years? 10 Years? 15 Years?

And here is the big problem for the oil industry. In order to properly run their businesses, oil executives must plan ahead. And these plans entail major capital investments needed now in order to reap significant gains to be realized several years down the road in terms of new oil production coming on line.

Indeed, for oil companies to stay profitable, mature wells close to exhaustion need to be replaced by fresh production. And this means investing now, sometimes on a massive scale, in order to secure continuity of future oil production. This is how the industry works. Except that now this traditional approach is no longer a sure bet.

Given developments in EV battery technologies, today oil executives know that this cycle of investments-exploitation-new investments-future exploitation will no longer work indefinitely.

The end of oil companies as giant players

If and when EVs will become dominant because of technological and cost breakthroughs in batteries technology, this will signal the beginning of the end for major oil companies.

In the not so distant future, many of them will run the risk of being caught with new expensive projects half completed that all of a sudden are no longer economically viable on account of collapsing demand for their product –oil– once coveted, and now out of fashion.

Beyond these contingencies, because of EVs almost all oil companies will have to cut production, concentrating on the cheapest crude, in order to survive in a new energy era characterized by drastically diminished demand for oil and oil products. The weakest players will not be able to make it. They will go under, or they will be bought by bigger companies.

Oil will still be needed

Having said all this, will EVs amount to a final catastrophe for the oil sector? Not entirely. Let’s keep all this in perspective. Even assuming state of the art, cost-effective EVs quickly replacing an enormous global fleet of gasoline powered vehicles, there will still be demand for oil.

Heavy trucks and ships will continue to run on oil derived diesel fuel for many, many years. Likewise, thousands upon thousands of civilian and military airplanes will still rely on jet fuel made from crude oil. Petrochemical and plastics industries across the globe will continue to need oil derived products.

All this is true. However, assuming a fairly rapid switch to EVs, the global demand for oil, now driven largely by demand for oil derived gasoline, will collapse. All of a sudden, the global oil industry will face gigantic over capacity: too much

oil and too little demand. Only the ultra lean, low-cost operators with a solid financial base will survive.

Good bye Exxon?

Hard to think of a world in which Exxon Mobil will be a mid-sized company confined to producing oil for jet fuel and diesel trucks only, since millions of cars will run on electricity, and no longer on gasoline. But we are getting there. And this may happen sooner than we think. Call it the next “oil shock”.

Obama Is The Big Loser In This Election

WASHINGTON – Outgoing President Barack Obama and his wife Michelle actively campaigned for Democratic Party nominee Hillary Clinton. In fact Obama spent more time campaigning for Clinton than any other sitting president ever did on behalf of the presidential nominee of his party. And why such a big effort? Because it was all about his legacy.

Indeed, a Clinton victory, especially if it had taken place with a significant margin, would have amounted to a final and lasting endorsement of Obama’s eight year presidency. Hillary Clinton would have been portrayed as the rightful and competent heir to his (great?) legacy. She would have moved America towards even higher achievements, by building on Obama’s record of success and the solid foundations they created for future accomplishments.

It did not work

Well, it did not turn out this way, as we know. It is not just that Clinton lost. She lost badly. The numbers look pretty awful for Clinton, if we compare them with how well Obama did when he ran for office.

In 2012, Obama won a convincing re-election campaign against Republican Mitt Romney. In that election, Obama got 65,915,795 votes, or 51.1%. Romney got 60,933,504, or 47%.

Well, guess what. On November 8 Hillary Clinton got only 60,839,922 votes, or 48% of total votes cast. Which is to say that she got almost 5 million fewer votes than Obama in 2012 –and in fact even fewer votes than losing contender Mitt Romney.

Democrats did not vote

Which is to say that a large number of Democrats or Independents leaning Democrat simply did not bother to get out and vote. I doubt that former Obama supporters voted for Trump in large numbers, although a small number probably did. The unpleasant truth –for both Clinton and Obama– is that millions of Obama Democrats stayed at home. They did not show up. They did not vote.

Well, so much for the legacy of the great transformational presidency of Barack Obama, the man who had promised in 2008 that we would re-engineer America, by bringing everybody together. The sad truth is that millions of people who belong to his own Democratic Party did not bother to show up and vote for his officially anointed successor, Hillary Clinton, this way paving the way for Trump's victory.

Trump's victory

As for Donald Trump, it is clear that he won. But he won with a small margin against Hillary Clinton, a very weak candidate

deserted by many in her own Democratic Party.

Yes, Trump the total outsider achieved something quite remarkable. He gained traditionally Democratic states like Pennsylvania and Wisconsin –and this is almost unprecedented. But his overall numbers, while more than enough to get him into the White House, are not overwhelming, and this should induce careful reflection among his key advisers.

Enough votes

Donald Trump won enough states to become president. But he lost the popular vote, even though by a small margin. And all this happened in a year in which a lower number of Americans voted. Trump got only 60,265,858 votes. A good number; but not impressive. Barack Obama won 5 million more votes than he did in 2012. And do keep in mind that millions more were entitled to vote in 2016 as compared to 2012.

So, here is the thing. Trump won because he managed to energize millions of Americans who felt betrayed by the traditional political establishment run by Washington insiders, this is true; while Clinton failed to fire up her own Democratic Party base. And so he won and she lost. But do keep in mind that this is not "a wave election". Trump won in some measure by default, because many on the opposite side simply did not show up.

Ronald Reagan in 1980

In contrast, Ronald Reagan's victory in 1980 was a real "wave election". In a three candidates contest in which Independent John Anderson got a respectable 6% of the total vote, Reagan got 50.75% of the votes. He carried 44 states and 489 electoral votes. Democratic incumbent Jimmy Carter did not just lose, he got crushed. He got 41% of the vote. He carried just 6 states and only 49 electoral votes.

A mandate

After his 1980 electoral triumph Ronald Reagan could reasonably claim “a mandate” from the American people. Donald Trump is the clear winner in 2016. But I do not see the same mandate. His numbers are good enough to get him into the White House; but they are not overwhelming.

His political and policy advisers should ponder on these results and decide how far can this new president push into uncharted territory when it comes to bold new policies. Based on these numbers, there is some political margin for him, but not a very big one. And, please, do keep in mind that history shows how quickly American voters can turn love into resentment towards their elected leaders.

Barack Obama is the real loser

The interpretation of the significance of this vote in this unusual 2016 presidential election has just begun. How strong and, most importantly, how resilient is Trump’s political base? Can it be expanded? How seriously wounded is the Democratic Party after this surprising (for the party elites anyway) defeat?

While all this is still being discussed, as I indicated at the beginning, a clear result of this election is that Barack Obama has been rejected by most Americans. Based on these elections numbers, it is clear that he left no strong legacy.

Therefore, he is the real loser in these elections.

The American people –among them millions of Democrats– who voted for him twice, in 2008 and in 2012, at this most critical juncture chose not to go out and vote for his chosen successor –a successor on whose behalf he strongly campaigned. American voters implicitly rejected Hillary Clinton, the candidate of his Democratic Party, and therefore the candidate who would have inherited Obama’s great policy achievements, while moving America to even greater heights.

Rejection across the board

And the rejection does not stop with the presidential race. The American voters also rejected almost all the Democrats who tried to unseat Republicans in the Senate, even though all prognostications indicated that they had a great chance to succeed in becoming the majority party in the Senate after this vote.

So, here is the score. Republican Donald Trump is now president. The Republicans keep the House and the Senate, while advancing across the country at the state level. Indeed, on November 8 the GOP gained 3 Governors, for a total of 33 republicans versus 17 Democrats.

As I said, no Obama legacy. Sad, but true.

How The US Fed Damaged The American Economy

WASHINGTON – I indicated a while back that whoever would be elected President of the United States on November 8 –Clinton or Trump– it was unlikely that she or he would have the fortitude and the political backing enabling her/him to seriously focus on the real, yet silent systemic crisis affecting the U.S. economy: ***artificially depressed interest rates***. I still hold this opinion.

Financial and economic distortions

Let’s look at the issue. We are now dealing with the consequences of several years of Fed-mandated zero interest rates policies, or ZIRP. These policies have created enormous distortions affecting now the entire fabric of the American economy, its economic policy making process, and financial markets. What started as extraordinary monetary easing in order to mitigate the risks of a post-2008 financial meltdown, morphed into a real monster.

Unprecedented predicament

No, we are not necessarily on the proverbial edge of the abyss. The world is not coming to an end. At least not today. Nonetheless, a sad combination of wild (and prolonged) experimentation on the part of the Federal Reserve –way beyond the limits of reason– and a mixture of political cowardice, ideological infighting, and intellectual void on the part of the Congress and the Obama White House created this truly unprecedented hazard.

Fed policies now drive markets

After years of zero interest rate policies, the US Federal Reserve managed to accomplish something quite unique. Its policies on interest rates –and not economic fundamentals– now determine in large measure investment decisions, and therefore assets valuations.

Disconnect between the economy and markets

Put it differently, prices of major assets, stocks first and foremost, no longer depend mainly on how the U.S. economy and the world economy are actually performing. They are largely dictated by Fed’s policies and its perceived future moves on interest rates. Which is to say that Fed moves now determine asset prices. And so we have had and are still having today an almost total disconnect between the actual conditions of the

economy and the valuations of basic economic assets. Investors follow Fed mandated interest rates. They base their investment decisions on Fed moves, and not on corporate performance. This is most unhealthy.

This obvious divorce between market valuations and underlying economic realities this time is not about market speculators. This is not yet another bubble created by crazy investors. This is a Fed-engineered disconnect between the real economy and financial markets. The Fed did this. yes, the Fed, the once revered custodian of national financial integrity.

Markets follow the Fed

Simply stated, several years of interest rates repression induced (forced?) most investors seeking a return on their capital to migrate to stocks, whose valuations are now inflated, because that's what everybody is buying, since there are no other realistic investment choices.

As a result of this unprecedented distortion, stock prices now are not affected –as they should be– by expectations on future corporate performance and sector strength. No, they are affected mostly by speculations on what the Fed may do next. It is now accepted as a "normal" phenomenon that US stocks respond with sudden swings to any hint of significant changes in interest rates policy by the Fed.

In other words, these days stock valuations respond mostly to developments that have nothing to do with the real economy.

How did all this begin?

Well, and why did the U.S. Fed get into this crazy game? At the beginning, in the immediate aftermath of the Great Recession of 2008, it was all done with good intentions. Fed officials were hoping that by pushing interest rates down to zero, and keeping them at zero for a while, both corporations and individuals would gain confidence and have an extra

incentive to borrow more and therefore kick-start into higher gear the wounded US economy struggling to come back after the horrible 2008 financial debacle.

Strong medicine

It was hoped that this strong monetary medicine would help, giving time to the slow-moving US Government to concoct market-friendly reforms, (such as lower corporate taxes, streamlined regulations), aimed at creating a more pro-investment, pro-growth policy environment.

And here is where everything went wrong. The U.S. Government, torn apart by bitter partisan politics, has done practically nothing. Since the end of the Great Recession nothing, absolutely nothing, has been done to reform federal spending, this way "bending' the curve. Likewise, nothing to reform and simplify the horrendously complicated U.S. tax code, with the goal of making it more business friendly. Nothing to improve the fundamentals of the U.S. "economic eco-system" in order to encourage new enterprise creation.

Sure enough, after massive stimulus ordered by Washington financed mostly by issuing bonds, (read: more debt creation), the U.S. economy rebounded. But it has been a feeble recovery, with unimpressive growth.

Weak economy, strong markets

And yet, despite all this, the stock market shot up. While this year Wall Street growth has been modest, it is clear to most observers that current valuations are not justified by the performance of the real economy.

While consumer spending is relatively healthy, the fundamentals of the U.S. economy are not good. There is very little new investment, while increased amounts of regulations affecting practically every economic sector suffocate existing small businesses, at the same time creating disincentives to

new business formation.

Here is the monster

And so, here is the monster. America has at best a mediocre "doing business" environment. Our public finances are in a dreadful state, with more debt added to already historically high debt. There is little new investment, while more small businesses close down than new ones are established. In other words, the real economy is either stagnating or slowly declining, (at least in some sectors). And yet, the stock market has done great, mostly because of Fed policies.

What we got, after years of ZIRP, is a horrible distortion, whose ramifications we do not even begin to appreciate.

Gradual adjustment?

The rosy scenario is that the Fed finally would see the danger of the effects of its policies. Therefore it will slowly jack up interest rates, this way allowing time for investors to devise and implement a gradual and orderly reallocation of capital. While this readjustment takes places, the stock market will experience some corrections. But nothing terrible will happen, as investors will have time to make the appropriate portfolio diversification.

But what if it all happens in a sudden big burst? What if the hoped for incremental correction turns into a stampede? What if trillions of dollars now invested in obviously inflated stocks are vaporized in a matter of hours?

"Rewired markets"

So, here is the thing. Just like a sorcerer apprentice, after 2008 the Fed went into uncharted territory, hoping that zero interests would work like the magic trick that would revive the moribund U.S. economy. Worse yet, even though the magic did not happen, The Fed kept on this ZIRP course for many

years. This prolonged intervention "rewired markets". It created new, and truly unhealthy, incentives for financial markets. They now respond mostly to Fed signals, as opposed to economic fundamentals.

And there is more. Corporations now respond to short term financial incentives. Many of them do not make long term investments. Indeed, it is a lot easier to support your market valuations through stock buy backs funded by money borrowed at practically zero interest than to plan growth strategies that require real capital investments.

How do we get out of this?

And now, to make a bad situation really treacherous, the Fed does not know how to extricate itself from the trap it created for itself and the entire U.S. financial system. Leaving interest rates near zero for much longer is a really bad idea. However, the danger now is that any action that may be read by the market as a quick return to historic interest rates may give the signal to a chaotic exit from artificially priced shares.

No help from policy-makers

As for getting any real help from policy-makers, forget about it. On November 8 we had the end one of the most acrimonious and divisive presidential campaigns in recent American history. President-elect Donald Trump, the uncontested winner, should realize that almost half the country is still against him.

This is not an auspicious beginning for a new President who should instead have the political flexibility deriving from a strong mandate. Trump needs to engage both the Nation and the Congress in order to put in place, as soon as possible, a new fiscal, economic and tax policy environment finally conducive to real investments and real growth.

What is the end game?

While few policy-makers will say this in public, it is clear that the U.S. economy looks reasonably healthy mostly because it is on Fed-administered monetary drugs. The current high stock market valuations are illusions. At some point this whole thing will fall apart. How fast and how dramatically, is anybody's guess.