

# Russia Is Still Europe's Main Energy Supplier

**WASHINGTON** – Despite the economic sanctions caused by its military intervention in Ukraine and the horrible impact of collapsed oil prices on a weak Russian economy, Putin's Russia is still the largest energy supplier to Europe. This ability to affect the supply of a most basic commodity is Russia's major political advantage vis-a-vis Europe. Think about it, even the Kiev government, openly at war with Russia-funded rebels in the East, has to negotiate deals about gas supplies from Russia, its enemy.

## **No alternatives**

The problem is that at least in the short or medium term not much can be done to change this situation. And the Europeans are certainly not helping themselves very much.

Theoretically, some alternatives could be explored. There are glimmers of a possibility to create new natural gas supplies in some European countries that have deposits of shale gas. But a combination of bad policy choices and outright Russian meddling are preventing any further exploration of these opportunities.

The French government, in its wisdom, banned fracking, the technology necessary to exploit the shale gas deposits that France seems to have. Bulgaria, apparently because of political pressures from Moscow, also banned fracking. Therefore, no Bulgarian gas that may compete with Russian supplies.

## **The UK tries fracking**

Only the United Kingdom seems to be willing to go ahead and exploit what may be considerable domestic shale gas deposits.

But in Great Britain the problem is a vociferous environmental movement strongly opposed to carbon energy in general, and therefore also to shale gas exploration.



### **Some gas will come through Turkey**

Well, there is a bright note in this rather disappointing scenario. As reported last year by the Turkish newspaper *Hurriyet Daily News*, (*Turkey, Azerbaijan break ground for Trans-Anatolian Gas Pipeline*), at least Turkey is doing something to create alternative gas supplies to Europe. The Ankara government, working with its counterparts in Azerbaijan and Georgia, launched the South Caucasus pipeline, the first component of a longer pipeline that will carry natural gas from Azerbaijan on the Caspian Sea all the way to the Mediterranean, via Turkey. The Turkish component of this large project is called TANAP, or Trans-Anatolian Gas Pipeline.

### **Diversified energy supplies**

Along with the existing Baku-Tbilisi-Ceyhan (BTC) oil pipeline that carries Caspian oil to the Turkish southern port of Ceyhan via Georgia, this new project now underway will create some energy supplies diversification for Europe. It is something. But unfortunately not enough. Energy poor Europe still has to buy most of its oil and gas from Russia.

### **US gas to Europe?**

In the future, America may be able to export some of its abundant natural gas to Western Europe. But this will take a long time. And it will not be in quantities large enough to replace Russian gas supplies. In any event, at the moment there are not enough Liquefied Natural Gas (LNG) terminals in the US and in Europe that could handle large volumes. Building these terminals is quite expensive and it takes years to complete them.

## **Russia wins**

At the end of the day, as odd as this may seem, this beat up Russia, run by oligarchs and kleptocrats, with the ruble falling, and billions of dollars leaving the country, still wins.

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# **New Technologies Will Make Carbon-Based Energy Obsolete**

**WASHINGTON** – The NYT recently had a front page (scary) story on global warming, accompanied by a frightening map that shows a super heated planet. There we have it: 2014 is the hottest year on record. The world map published along with the story, in which blue areas represent cold spots while hot regions appear as bright red, is mostly red or very red. And yes, looking at a graph published below the map, it is obvious that world temperatures have gone up in the last few years. The uptick registered in 2014 is not incredible; but it is noticeable.

## **Global warming is here**

Well, there you have it. We do have global warming. It would

be foolish to deny the evidence. The next question is whether this is all about the increased amounts of greenhouse gases released into the atmosphere on account of our vastly increased consumption of carbon based fuels. The environmentalists of course claim that there is no other plausible explanation. Others dispute the cause and effect connection, or at the very least its significance.

### **It is all true**

Let us assume that the environmentalist are right. Let us assume that increased world temperatures, with all the disruptions that they provoke and will provoke, are entirely man-made. Let us stipulate that the cause of this phenomenon is the large-scale consumption of carbon-based energy: coal, natural gas and oil. Yes, it is indeed so.

Then what? Well, then nothing. Yes, of course, UN specialized agencies issue warnings and reports. There are world summits. There are proclamations, broad commitments to keep emissions within certain limits and to gradually reduce them.

But, guess what, after all that, nothing changes.

### **China and India are not on board**

And why not? It is very simple. The natural disasters that will be caused by a warmer atmosphere are still mostly in the future. But China and India's political leaders are committed to deliver economic development –today. It is as simple as that.

Call this attitude stupid, myopic, unenlightened, or whatever you want, but no emerging country is going to forego economic development today, (for which they require old-fashioned, dirty coal and oil), for the sake of a cooler planet tomorrow.

And we know very well that without the combined 3.5 billion Indians and Chinese on board (almost 50% of humanity) whatever Europe, North America and Japan will do to reduce their emissions would not make a lot of difference.

### **Changes in America make no difference**

This is the reality. The notion that, upon reading the NYT scary story, we Americans decide to pitch in by commuting to work using bicycles and by installing solar panels on our roofs, so that we will counter this ominous global warming trend, is ridiculous. Sure, we can do all of this. And may be there is some good in doing it. But forget about our fossil fuels consumption reductions having any measurable impact on global temperatures.

As I said, most emerging countries are committed to economic development for which they require conventional energy sources. They consider everything else a distraction.

### **How do we get out of this?**

Given all this, how do we get out of this worrisome predicament? As I said, the idea of limiting carbon energy consumption may sound nice, but it is unworkable.

Therefore, our best bet is the development of new, cost-effective, scalable non carbon energy. Of course we already have some of this, (wind farms, solar panels, and electric cars). But the problem is that for the moment what we have is not really better and cheaper than the old-fashioned, dirty stuff.

### **Invest in R&D**

***Instead of imposing the large-scale adoption of these still imperfect alternatives, governments should lead the way by investing more and more in new research. We should see a proliferation of prizes, challenges and competitions that will***

***stimulate scientists and inventors across the globe to refine existing renewable energy technologies, or to come up with something totally new and different. We really do not know what may be possible.***

However, in principle it must be possible to invent something more efficient, cheaper and cleaner than a coal-fired, electric power generation plant. Likewise, It must be possible to come up with something that will effectively replace the internal combustion engine –a really old technology– to power cars and trucks.

### **There is no better alternative**

Quite frankly, I see no better alternatives. The idea that politicians are going to guide future economic development by mandating which and how much energy we shall use is grotesque. This will never work.

China and India, the really big present and future carbon energy users, will never accept mandates. And you can bet that all those who will sign up for any voluntary reductions will figure out creative ways for cheating.

As I noted above, there is a way out of this. Coal, natural gas and oil will become instantly obsolete the minute in which we invent something better. Therefore, as we recognize the urgency, let's focus on this goal.

### **Fund smart people**

***And the best way to advance in our quest for clean, affordable energy is to give large incentives to gifted people and credible research institutions, public and private, so that they will come up with real innovation, sooner rather than later.***

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# Solar Panels On Every American Roof?

**WASHINGTON** – Solar panels producing photovoltaic electricity are finally going mainstream, according to an interesting [WSJ](#) story, (*Home Builders Tap the Sun*, December 2, 2014). Until now the installation of still expensive solar panels has been mostly about retrofits: placing panels on existing buildings.

## **Solar panel comes with the house**

But now we have a new trend. As the [WSJ](#) explains, Lennar Corporation, America's second largest home builder, now offers installed solar panels on its new homes as a standard feature. This is big. And this approach may soon be adopted by other builders.

Of course, for the time being at least, this added feature works well only in specific markets. You need a lot of sunshine, (think California, Arizona or Nevada), and a favorable tax regime that gives credits for renewable energy installations.

## **California, Colorado and Nevada**

For these reasons, for the moment Lennar offers this package –house and installed solar panels– only in California, Colorado and Nevada. And this is because these states meet the basic criteria: plenty of sunshine that translates into lots of electricity, and a favorable tax regime that make the investment cost-effective.

This is how it works. Lennar gives home buyers a choice: either buy the panels and pay more for the house,

(about \$ 10,000 extra), or lease them from Lennar, with an upfront guarantee of a 20% saving on future utility bills.

## **A breakthrough**

My sense is that this *“house and solar panel package”* is a real breakthrough. Granted, this is only a beginning. However, we know that solar panels are getting better and cheaper. Right now it makes sense to offer the house and panels package only in regions with a lot of sunshine. In those markets the solar panels are more cost-effective. But, in the future, assuming lower panels and installation costs, it will make sense to place them on roofs even in regions with less sunshine.

As a result of this transformation, years from now most consumers will be either totally independent from the grid (California) or at least less reliant on it, (Michigan).

## **No more power plants?**

This will be a dramatic change. Assuming more and more installations, over time electric utilities will be less relevant. In fact some may disappear altogether.

Imagine that. No more large coal-fired or gas-fired plants. No more transformers, no more power distribution networks. No more need to regulate rates, no more need to create a special tax regime for utilities, and so on.

## **Disconnected from the grid**

If you and millions of other people will be able to generate in your own home all the electricity you need, you will not need to be connected to the grid. In the regions in which consumers will be able to “make” at home only some of the power they need, this will still mean lower demand, and therefore the scaling down of any plans to build new power plants.



This means huge cascading consequences on the coal and natural gas generation industries, all the way to hydro-power and nuclear power plants equipment manufacturers. Not to mention the vast industrial sectors that make turbines and other machinery necessary for power generation and distribution. I guess there will be a point in which we shall look at out of commission, old transmission lines as relics of a bygone era.

### **A new world?**

So, a brave new world? Well, we are not quite there, yet. Still, if other major US builders follow Lennar's example, at the very least we can anticipate that in the South West there will be very few new power plants built, because many consumers will make their own electricity, right at home. This is a big change.

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## **No More News From Ukraine – Putin Won, Poroshenko Lost**

**WASHINGTON** – We hear nothing about Ukraine these days. And for a very simple reason. The war is over. Russia won, Ukraine lost and the West looks the other way. President Petro Poroshenko finally realized (amazing that it took him so long) that he was and is on his own in this most unequal fight.

### **Putin won**

In just a few days, Putin took over Crimea; and he got away with it. And now the Moscow-funded rebels who took control of portions of the East cannot be dislodged. Ukraine cannot win against rebels resupplied by Russia. At the same time, Ukraine

found itself in the very uncomfortable position of having to reach an agreement with its very Russian enemies on the critical issue of natural gas deliveries from Russia. They are essential for Ukraine's very survival.

### **Give up**

Taking all this into account, Poroshenko came to the most obvious conclusion. *"Whatever we may say in public, Russia won this war. We lost."* The hope that this fight in Eastern Ukraine could become a Western fight in which pro-democracy Good Guys would battle authoritarian Bad Guys proved to be just that: a hope.

### **The West will do nothing**

Europe and the US are willing to say a few nice things. Up to a point, they will help out Kiev with loans and credits. But there will be no military engagement. None whatsoever. And not even indirect support, via arms or anything else that would improve Ukraine's hopeless military inferiority vis-a-vis Russia.

The US and NATO may be counted upon to defend NATO countries under threat, at least we think so. Anything else is a non starter.

### **Waste of money**

This was obvious months ago. It is really too bad that it took so long for Poroshenko to realize that his country would receive no military or any other assistance that would turn the tide of the conflict in the East. He could have come to the conclusion that it was time to give up and allow Russia to win many months ago. This could have saved lives, property and probably hundreds of millions of dollars totally wasted in a really hopeless, unwinnable war.

### **Clever Putin**

Very shrewdly, Putin understood that he had essentially a free hand in Ukraine and took advantage of the opportunity to unilaterally modify the post-Soviet era borders that he and so many other Russians believe to be unfair to Russia.

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## **Flex Fuel Engines Allow Trucks To Use Natural Gas – No Downside**

**WASHINGTON** – While American energy firms have made major progress in exploiting new “unconventional” (mostly shale) oil, this way vastly increasing domestic production, we still import almost half of the 18 million barrels of oil that we consume every day. This means “exporting” billions of US dollars, every day, in order to pay for this precious fuel. It is a well-known fact that most of our oil is refined into transportation fuel necessary to power a gigantic US fleet of automobiles and trucks.

### **US produced natural gas**

Beyond increased domestic production, can America find other ways to import less oil? Yes it can, by taking advantage of abundant, cheap (and much cleaner) US produced natural gas. Using hydraulic fracturing and horizontal drilling, US energy companies managed to vastly increase the production of American natural gas.

Increased supply means lower prices. As most of our natural gas is used for electric power generation and for heating, this new supply is great news for both industry and individual consumers who see stable or lower electricity prices.

## **CNG/LNG as transportation fuels**

While this is wonderful, we can do much better. Natural gas, compressed or liquefied (CNG/LNG) can also be used as transportation fuel, this way replacing diesel or gasoline, much of it derived from expensive imported oil. The reason for switching is lower prices. LNG/CNG cost only about \$ 1.70 per “gasoline-gallon equivalent”. And do keep in mind that this is not a new, experimental technology. This is old stuff.

The reason why America never adopted natural gas engines to power vehicles is that traditionally we used to have relatively cheap gasoline. Well, now all this has changed.

Gasoline and diesel are no longer cheap; while (thanks to hydraulic fracturing) now we have enormous amounts of domestic and really inexpensive natural gas. Hence the price difference between gasoline/diesel and natural gas.

### **How can we switch?**

The problem in shifting from gasoline/diesel to CNG/LNG is that the US automotive industry has been slow in offering new products that run on natural gas. At the same time, America still lacks a reliable network of refueling stations offering LNG or CNG.

And here we have the classic “chicken or egg” dilemma. LNG/CNG refueling stations are quite expensive. Very few entrepreneurs are willing to build them without the assurance that there will be plenty of customers. By the same token, consumers will be reluctant to make the switch to LNG/CNG powered vehicles unless they believe that they can be easily refueled anywhere.

### **Flex-fuel engines**

Well, there is a solution to the “chicken or egg” dilemma and challenge. As Bob Lukefahr and Balu Balagopal explain in a [WSJ](#) op-ed piece, (*Forget Electric Cars. Natural Gas Is Powering*

*Vehicles in Texas*, September 27, 2014), major US auto manufacturers such as Ford are introducing new trucks with flex-fuel engines, meaning engines that can work with both, natural gas and diesel. Other types of engines now being offered work with a blend of the two fuels.

This should take care of the refueling problem until more stations will be built. If you run out of LNG and the next refueling station is still too far, you switch your engine to diesel. No problem.

### **Cheaper fuel**

As the two authors explain, it is clear that companies that operate medium-sized or heavy trucks will get the most out of this fuel conversion. They work with heavy commercial vehicles that are on the road most of the time and therefore consume a lot of fuel. Considering the price advantage of CNG/LNG over diesel, the upfront costs of any conversion/retrofit of an existing fleet of trucks will easily be recovered because of the significant savings due to lower fuel costs.

### **Converting heavy trucks**

Of course, down the line the real targets are bigger and more expensive 18 wheelers. However, the cost of converting really heavy trucks to LNG/CNG is much higher. And there are other issues, such as training mechanics on how to maintain these different types of engines.

Given the lack of familiarity with natural gas-powered vehicles, in many instances the cost of maintaining them is higher than the cost of maintaining the old but well known diesel powered trucks.

Overtime, as more and more people master the still unfamiliar technology, this will change. But higher maintenance costs may induce fleet operators to wait a bit longer before embracing

LNG/CNG.

### **Complicated transition**

In other words, the transition to LNG/CNG is still complicated. But, in the end, as industry adjusts its offerings to the new fuel reality, and as more companies will invest in LNG/CNG refueling stations, simple economics should favor a switch from diesel to natural gas to power heavy vehicles.

### **With flex-fuel vehicles there is no down side**

All this of course assumes that the substantial price differential between natural gas and diesel will stay. If we can imagine a future in which oil prices will go down (and stay down) significantly, this way driving down the cost of diesel, then there will be no longer any advantage in powering your trucks with LNG/CNG.

However, if you purchased a flex-fuel vehicle, you are still OK. If diesel will become cheaper than natural gas, (this is possible, although unlikely), then you switch back to diesel, at no extra cost, because your vehicle works with both fuels.

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## **Germany's Green Energy Revolution Based On Belief, Not Economics**

**WASHINGTON** – An interesting [WSJ](#) story, (*Germany's Expensive Energy Gamble*, August 27, 2014), provides a good illustration

of top-down economic policies motivated mostly by ideological, as opposed to economic, reasons. The German government, presiding over the world's fourth largest economy and number one within the European Union, years ago decided that the country had to embrace renewable green energy not because it is cost-effective; but because it is "good" for mankind.

## **Mandates**

In order to achieve this gigantic power generation and distribution shift, the Berlin government imposed mandates on the use of electricity produced from renewable sources, (mostly wind and solar), while subsidizing the cost of green energy production. The goal was and is to discourage the use of fossil fuels. The government also decided to phase out all nuclear power plants.

This was a political move. There is a very well-organized anti-nuclear movement in Germany. The government felt that after the Fukushima nuclear power plant disaster in Japan it had to act in order to prevent additional public demonstrations against nuclear energy. This decision had little or nothing to do with any assessment of the safety of German nuclear power plants.

Overall, the public policy objective is to have soon a truly "Green Germany" that uses zero nuclear power, while relying less and less on fossil fuels. Germany's energy will be cleaner, and soon enough truly clean. Because of this epochal transformation, Germany will no longer contribute much to global greenhouse gases emissions.

## **Tech Leader?**

Beyond the green goals, policy-makers assume that, by virtue of establishing itself as a global renewable energy leader, Germany will ensure that its technologies will be adopted world-wide.

Once it will be clear to all that renewable energy is really the way to go, most countries around the world would turn to Germany, the technology leader.

If successful, this major energy turnaround would prove that you can be green, innovative and profitable.

### **High cost**

***All this sounds really good. Except for one fact. For the time being, renewable technologies, while improving all the time, are still rather expensive.***

***Therefore the German government must subsidize them in order to make them economically viable. The cost of these subsidies is passed on to consumers.***

***As a result, on average, the Germans pay more than double for electricity than the average US consumer. That is a lot of money.***

German energy intensive industries like chemicals, smelters and steel mills have already seen their operating costs rise and their global competitiveness reduced. Some of them are planning relocations and/or expansions in countries where electricity is cheaper, including the US.

Besides, as most of the wind energy is produced in the North of the country, Germany now needs to build new and very expensive transmission lines that will carry all this power to the energy hungry industrial South.

### **Why do all this?**

***Given all this, here is the question. Why on earth would the government in Berlin impose on the German economy –via expensive mandates and subsidies– the high cost of still immature green energy technologies?***

Wouldn't it be wiser to allow the market place to decide on



what are at any given time the most cost-effective electric power generation technologies? Wouldn't it be better for the government to limit its role to financing more R&D in renewable energy, this way helping its development, without picking winners today? Indeed, what if you pick the wrong winners?

### **There are other technologies**

It fact, there is much progress in other (more conventional) energy technologies. We know from the recent US experience that an unexpected leap forward in new and cost-effective ways to develop immense shale gas reserves (hydraulic fracturing and horizontal drilling) led to large-scale production of really inexpensive natural gas for power generation.

This shale gas revolution completely transformed the entire US domestic energy supply picture in just a few years. Very important to point out that this happened while most of the leading energy experts where looking the other way. Key Washington policy-makers and their advisors did not see any of this coming. And yet it came. The real point here is that the market decided; and not policy wonks who believe they know what works and what does not.

### **Private sector in the lead**

It is important to stress that the US shale gas development revolution has been entirely a private sector-led effort.

Energy companies did not pursue shale gas development because of tax exemptions, mandates or subsidies. Companies invested in shale gas because they were hoping to make money. And they did.

The net effect of these massive private sector investments is that (thanks to cheap shale gas) millions of Americans now enjoy comparatively lower electricity costs.

## **“Good” and “bad” energy**

*Back to Germany, the only explanation for the top-down, forced investments in renewable energy is that this momentous “green choice” is based mostly on politics and ideology, and not on economics.*

For a variety of reasons, most Germans now believe that green energy is “good”, while nuclear and fossil energy is “bad”.

Therefore, going green is a moral and ethical choice. It has very little to do with economics.

## **Ideological argument**

Indeed, the basis of this costly energy policy is not cost-effective technology choices, but a mix of arguments grounded on (what most Germans believe are) final and definitive assessments about the damage to the environment and to public health caused by “bad” energy.

And, of course, there is also the argument that all responsible people must act –now– to stop and hopefully reverse the emission of greenhouse gases, the byproduct of burning fossil fuels, responsible (this is the undisputed consensus) for global warming.

## **Environmental protection is important**

Now, having said that, I certainly do not want to dismiss the fact that the unrestricted use of “dirty” fossil fuels does indeed cause environmental and public health damages.

Therefore, all governments have an obligation to regulate any kind of power generation, with the goal of minimizing its environmental and public health impact.

For instance, ancient coal-burning power plants may indeed produce cheap electricity; but their harmful emissions also damage, (in some cases destroy), the health of communities

living nearby. Therefore, either the plants can be retrofitted so that their emissions are within safe public health parameters, or they should be closed down.

No reasonable person would argue that, since obtaining cheap energy is our primary goal, we do not really care at all about the way it is produced, or about the consequences.

### **“Expensive Energy Gamble”**

That said, the German government decision to progressively phase out all fossil fuels, while mandating the use of costly and still imperfect green technologies is indeed a very *“Expensive Gamble”*, as the [WSJ](#) story tells us, based on the sweeping assumption that all fossil and nuclear energy is bad.

Of course, we do not know how all this will play out, 10 or 20 years from now.

Maybe the German government will be praised for its incredible foresight and ability to anticipate future trends. Maybe the decision to gamble on renewables will turn out to be extremely smart.

### **What if they are wrong?**

But what if things turn out differently? What if still expensive renewable energy will be unable to compete with, for instance, abundant and even cheaper shale gas?

Yes, in case you did not know, beyond the vast reserves we have in the US, there are incredibly vast amounts of shale gas all over the world, in countries such as China, Russia, Argentina, the United Kingdom and more.

If wind and solar became really inexpensive, it would make no sense to invest massive amount of fresh capital to develop non competitive fossil fuels. But if the cost of renewables remains relatively high, while the cost of producing shale gas stays the same or goes down, then fossil

fuels will win, at least for a while.

In capitalistic economies, it is not unusual for private sector companies to make huge bets on still unproven products. Sometimes the bet pays off, sometimes it does not. In either case, corporate managers put at risk investors' money.

### **The government chooses**

But here we have the government of Germany, a large modern country, betting huge amounts (hundreds of billions) of other people's money on something that it believes to be right not because of persuasive economic reasons; but purely because of beliefs that amount to a "green ideology".

Is this really a sound foundation for public policy?

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## **US Should Use Abundant Domestic Natural Gas As Transportation Fuel**

**WASHINGTON** – In an otherwise thoughtful review of Obama's energy policies, ([WSJ](#), *Obama's Second-Term Energy Policy is Working*, August 19, 2014), MIT Professor John Deutch, (who has

also held many high level government positions), does not even mention the real low hanging fruit represented by the use of US produced natural gas as transportation fuel.

### **Gas for power generation**

Yes, the US shale gas bonanza is the proverbial game changer, when it comes to energy resources. But so far its beneficial effects have been felt almost exclusively in power generation.

Indeed, thanks to abundant and inexpensive shale gas, America's electricity prices are now 1/3 of Germany's rates. In a hypercompetitive world, low electricity prices do matter, a lot. They affect the final cost of many manufactured goods; and they have a particularly high impact on energy intensive sectors, like steel.

### **LNG as transportation fuel**

That said, it has been pointed out by T. Boone Pickens and others that US produced compressed or liquified natural gas, (CNG and LNG) could and should replace diesel as the primary transportation fuel for heavy trucks. There are compelling economic reasons for doing this. Simply stated, LNG made out US produced natural gas is considerably cheaper than diesel, a lot of it refined from imported oil. Heavy trucks are on the road all the time, and they use a lot of fuel. Therefore, it is indeed cost-effective to switch.

### **Energy security**

From a larger energy security stand point, the impact of such a switch would be very significant. We have about 9 million heavy trucks in America. They consume about 3 million barrels of oil a day. If we could imagine a future in which all of them will run on US produced LNG, this would translate into huge savings. We would not need to buy a lot of the oil we are importing now. These are billions of US dollars that will stay at home. Besides, we would be less reliant on far away

suppliers for our basic energy needs.

### **The switch to LNG**

That said, the problem is that it takes a while for large fleet operators to fully understand the economic benefits of LNG, while weighing them against the substantial capital investments needed to switch.

To start with, fleet operators need to buy expensive new trucks. Secondly, they need to be reassured that there is already in place a reasonably extensive networks of LNG refueling stations. This is complicated, because these facilities are large and very expensive.

And so, in some cases we may have the classic "*chicken or the egg*" situation. Operators will not buy new trucks unless the refueling stations are built, and companies will not build expensive stations unless they are confident that there will be sufficient demand for their product.

### **A signal from Washington?**

In this context, it would be very helpful if the Federal Government would give a signal to the market. Washington could help this energy-saving and energy efficiency transformation by committing to buy new trucks fueled by LNG. This would boost production of LNG powered trucks, this way creating a new incentive for private companies to follow suit. At the same time, companies that make and install LNG refueling stations would be convinced that they will have a substantial market.

This would be a way in which the Federal Government could invest tax payers dollars in energy-saving technologies –this is good for America– while boosting the production of domestic energy sources, something that benefits the American economy.

### **Why is Obama not acting on this?**

While this switching process will take time and money, the concept is not complicated. The incentives are clear. LNG is cheaper than diesel. Besides, LNG is produced from domestic natural gas. This change would cut our energy imports bill, while boosting domestic producers who generate and support many jobs.

This being the case, I wonder why the Obama administration does not move –decisively– in this direction. I also wonder why Professor Deutch does not even mention the issue –let alone endorse the idea– in his op-ed piece.

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## American Exports Cannot Replace Russian Gas To Europe

**WASHINGTON** – America’s ability to exploit and use abundant domestic energy –shale oil and gas– has to be celebrated. Energy self sufficiency –now a fact in natural gas and a reachable goal (when combined with imports from Canada and Mexico) in oil– is the best economic news we have had in at least a decade.

### **America exporting natural gas?**

That said, at least in the short-term, America’s ability to alter energy flows to Europe through the export of our own natural gas is negligible. The notion that US exports would be able to replace all or most of the natural gas that Europe imports from Russia is a mere fantasy.

Therefore it is really surprising to read in a WSJ op-ed by Senators John Hoeven and John McCain, (*Putting America’s Energy Leverage to Use*, July 29, 2014), that: “Today the US

has the leverage to liberate our allies [in Europe] from Russia's stranglehold on the European natural-gas market".

### **American exports cannot replace Russian gas**

To put it mildly, this is really a stretch. In fact, it is a fantasy. The US has no such capabilities. Sure enough, as the two Senators argue, the US could produce even more shale oil and gas. Through new legislation they are co-sponsoring, it could be possible to streamline regulations in order to drill more wells in a shorter period of time. It could be possible to expedite the vetting process necessary to authorize the construction of additional Liquefied Natural Gas (LNG) terminals, so that US produced natural gas could be exported. All this is possible.

And there is no doubt that, in the long run, the addition of US natural gas exports to total energy supplies would alter global supply and demand dynamics, therefore improving Europe's prospects by creating additional sources that could be tapped, as opposed to being forced to buy Russian gas, simply because this is the only game in town.

### **Europe's needs**

However, the fact is that Europe's energy needs are colossal. Even if we did –in record time– all the things that the two Senators recommend, a few years down the line America would be able to supply only a modest percentage of what Europe needs. In other words, we have no way to create –today, or in the near term– an alternative to Russian gas.

### **Energy policy coordination**

Sure enough, if we had a solid transatlantic energy plan (the two Senators support this) that would include new supplies from America, a vigorous European push (aided by US know how) to develop the Old Continent's substantial shale gas reserves, plus additional imports from Africa, Azerbaijan and other



sources, then it would be possible, may be in a decade or more, to create a viable alternative to Russian gas for Europe.

But to say that if America would quickly build a few LNG terminals, then we could ship to Europe all the gas it needs is just not true.

### **Best export markets in Asia, not Europe**

Besides, we have to consider that the most lucrative markets for future US gas exports are in Asia, (where natural gas is much more expensive), and not in Europe. Once the LNG terminals are built, unless McCain and Hoeven plan to have a legal mandate that will force companies to sell to Europe, US LNG exports would go where prices are higher, and that is to Asia.

Therefore, this whole idea that we should push for additional US production so that we can sell to Europe all the gas it needs just does not make a lot of sense.

### **Use LNG as transportation fuel**

There may be other good reasons for streamlining permits and regulations so that it will be easier to bring to market abundant US shale gas supplies.

I for one strongly support the idea pushed by T. Boone Pickens ([www.pickensplan.com](http://www.pickensplan.com)) of using domestic and relatively cheap US natural gas as transportation fuel, especially for heavy trucks. LNG for trucks is a cost-effective alternative to much more expensive diesel made with imported oil.

However, the idea of boosting US natural gas production so that we can supply Europe all the energy it needs is a dream.

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# A United Front To Punish Russia For The Destruction Of The Malaysia Airlines Plane?

**WASHINGTON** – US Secretary of State John Kerry, now in Ukraine, finally said publicly that America has conclusive evidence that the missile used by the Ukrainian rebels to shoot down the Malaysia Airlines Boeing 777, (with or without the assistance of Russian military personnel), came from Russia.

## **Putin is responsible**

Now, as we all know that the destructive conflict underway in Eastern Ukraine has been created and sustained by Russia, it is easy to draw the only possible conclusion. No matter who was in charge of that surface-to-air, (SAM), missile launcher, and no matter who gave the order to shoot down the airplane, (that turned out to be a passenger jet on its way to Kuala Lumpur), it is obvious that Russian President Vladimir Putin is morally responsible for this immense tragedy.

Putin started this conflict. He sent Russian operatives to lead and assist the ethnic Russian Ukrainian rebel forces. Last but not least, he gave the rebels arms, armoured vehicles and –yes– surface-to-air missiles.

## **Western reactions?**

Now, as we have got this far in establishing the facts –and this is good– what next?

*Here, I am afraid, the picture gets really murky.*

First of all, do not expect Vladimir Putin “to do the right

thing” and admit Russian implication/responsibility for this tragedy in which the Netherlands lost almost two hundred citizens, with additional losses spread among Malaysia, Australia and Indonesia.

This being the case, the only way to punish Russia for its criminal behavior would be to get really serious about tough economic sanctions. Hit Russia where it really hurts. Deny all Russian banks, financial institutions and individuals the possibility to conduct any and all international financial transactions. Freeze all the foreign assets that wealthy Russians have in London, Paris and elsewhere.

### **No united front**

But I do not see any of this happening. Sure, The Netherlands is in mourning. The rest of Europe is outraged. ***However, the fact is that most of Europe needs Russian natural gas, now and for years to come, for its very economic survival. So, how do you engage in economic warfare with your major energy supplier? Simple answer: you don't. Therefore, forget about the “let's get tough on Russia” scenario.***

Sure enough, in theory, there are alternatives to European perennial dependence on Russian energy. Europe could begin today a vigorous program to develop its own shale gas resources, while expediting any plans to obtain additional liquefied natural gas, (LNG), from other sources, including the United States.

But, even with the best energy policies in place and the best of luck, this gigantic supply shift would take years. And, in the meantime, without Russian natural gas, how will the Germans keep warm in winter? How will they power their industries?

### **We need Russian gas**

As you can see, “getting tough on Russia” would entail a

heavy price –a price that most Europeans are unwilling to pay.

Given all this, do not expect any courageous moves originating from Berlin or Rome. In fact, expect the opposite: a humiliating retreat, rationalized as wise “realism”.

### **Explaining tragedy away**

Here is how the Europeans will explain doing nothing serious about this sad affair.

*“Yes, it is really terrible that the Malaysia Airlines aircraft was shot down while flying over Eastern Ukraine. So many innocent people dead. What a shame! But, look, there is a war over there. It was really unwise for the Malaysians to allow their planes to fly over a conflict area. And so, this is what happened. Obviously, some rebels on the ground believed that this was a Ukrainian military plane. And they destroyed it, clearly by mistake. This is terrible, but it is to be expected that something like this may happen in a war zone. In the meantime, while we recognize that Russia is partly to blame, we still have got to get along with our most significant natural gas supplier. It is sad. But we have no choice”.*

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## **Electric Vehicle Technology Advances May Destroy The Global Oil Industry**

**WASHINGTON** – Joseph Schumpeter famously called it “*creative destruction*”. This was and still is the best way to describe

how in a free market, capitalistic economy technological advances, (this is the “creative” part), inevitably cause the death of pre-existing technologies, systems and modalities (and here you have the “destruction” part). The problem with truly disruptive innovation (the outcome of very good creation) is that incredibly positive technological developments in many cases spell disaster for established industries, especially capital-intensive industries.

### **Oil sector, always a winner?**

Take energy, for instance. I applaud American ingenuity that pushed the development of technologies –hydraulic fracturing and horizontal drilling– that now allow the successful economic exploitation of domestic shale oil and shale gas. Considering America’s (seemingly) never-ending need for oil in order to produce the rivers of gasoline needed to power our hundreds of millions of vehicles, more oil discovered and produced here at home is good news.

Indeed, the more oil we get at home, the less we need to buy from other producers, some of them troubled Middle Eastern OPEC countries. Therefore, investing in additional domestic oil production should be looked at as a very smart move. It is good for our balance of payments, (more of our money stays at home), and definitely good for our energy security. Finally, it is very good business for the oil industry.

### **EVs, Electric Vehicles, may change everything**

All true –until yesterday. Today, we do not know for sure anymore, on account of possible technological advances that can make most, if not all, of the oil industry obsolete. What? Oil obsolete?

Yes, this seemingly outrageous prediction may be true. The fact is that right now –and even more so going forward– the oil industry has to deal with the potentially catastrophic consequences of disruptive breakthroughs occurring in the

relatively new electric vehicles, EV, sector. Indeed, if and when technologically viable and truly cost competitive EVs come to market, this will be the end of the oil industry as we know it. This will be capitalism's "*creative destruction*" on a gigantic scale.

Let's look at this in perspective. Until a few years ago, the world knew only the internal combustion engine. And this engine required oil-derived gasoline. There were no alternatives.

### **Technological breakthroughs?**

But now it is different. Now we know that there can be alternatives. Granted, EV technology is still in its infancy. However, looking at the global offerings of electric vehicles (totally electric, as well as hybrids) I see well over 20 models. In other words, we begin to see a real effort, on the part of newcomers as well as established auto manufacturers, in the USA, Europe and Asia to make and sell more advanced electric cars.

We all know that the still unsolved technological challenge faced by this new industry is to create cheap batteries that will allow you to drive your vehicle for longer distances before you have to stop and recharge.

This is still a real problem holding back EVs. But we also know that lots of smart people across the globe, from Japan, to China, to Germany, France and the US are busy working on it.

### **Invest in oil?**

Now, if I were in the shoes of a major oil company CEO, knowing all this would make me nervous, very nervous. I know that, in order to stay in business, I need to identify, secure the drilling rights and then put into production more and more oil fields. This requires committing a huge percentage of my

profits, billions and billions of dollars for the likes of Exxon and Chevron, into developing new resources. All this will be done on the basis of some key assumption about demand for oil products and therefore prices.

### **Cheap EVs coming tomorrow?**

However, how do I prepare for an announcement coming, say, a year from now in which Tesla Motors declares that it has come up with a brand new battery that costs 1/3 of its cheapest model, while it allows you to drive 400 miles before recharging? This is unlikely; but not impossible.

If and when electric vehicles become affordable and viable, given the lower cost of electric power, gasoline demand will dwindle and then vanish. Indeed. And this will spell the end of the oil industry as we know it today. (We shall still need oil for jet fuel and other uses. But they would amount to a small fraction of today's demand).

Given all this, and the rather uncertain future created by R&D in EVs, is it really smart to invest massive amounts of capital in oil?

Who knows really. Real breakthroughs in EV technology may be around the corner, or they may happen 20 years from now. It is impossible to make believable predictions when it comes to rapidly evolving technologies.

### **Risk**

Capitalism is about taking risks. Sometimes huge risks. And this is difficult, as so many predictions (based on incorrect assumptions, we find out later) turn out to be wrong. It is really hard to be in a capital-intensive, mature industry threatened by potentially viable newcomers.