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This newsletter will focus on explaining my preoccupation with oil, and a key measure, Energy Return of Energy Input, EROEI. Then onto some important geopolitical factors.

We all read the main stream media (MSM), but some say that is where the blind are just trying to lead the clueless. Perhaps not completely fair, but...

http://www.internationalman.com/articles/the-blind-leading-the-clueless

For about five years I have been aware of the substance behind the theory that our global economy is failing due to falling EROEI of oil. So I have been researching the validity that this may be primary causation for looming global economic collapse. I now accept that hypothesis although others may not. However, I have never summarised for others, how falling EROEI is so important to us.

I have analysed a few industries in depth over the last ten years or so. The oil, gas, coal, uranium, rare earths, gold, silver, hydrogen and renewable energy industries have been my focus and oil at the centre. The reason for looking at oil is that it comprises 92% of all transport fuels and 34% of all energy we employ to do our daily work and live our busy lives. Oil products are energy dense and nothing else will ever come close to energy density...as a storage medium. It is impossible to overstate the importance of oil to humanity and it is clear that our modern way of life would not be possible without it.

Yet oil will soon be lost due to the rapidly increasing ratio of cost to benefit.

My in-depth analysis of the oil industry has shown me how the net energy surplus provided by oil has been seriously eroded and it is that erosion that has been totally ignored by the world's economists and politicians. This oversight is due to the industry's misdirection of the facts away from measuring the energy the industry produces to instead measuring the number of barrels produced. In fact, every oil company will one day consume its reserves and investors must be persuaded to stay loyal. Now it looks like far more oil is being produced than ever before, while what they refer to as a barrel of oil now may bear little relationship to the kind of oil produced during the 1960s, or to the net benefit of an extra barrel over what was produced before.

Humanity was able to diversify away from manual food production, so that instead of 94% of the population working on food production, the current portion is about 6-8% doing so. Productivity gains in manufacturing have always been about smarter uses of fossil fuels and electrical energy. Remember a large proportion of global electrical generating capacity is oil and gas driven.

The industrial age of oil is fragile. It was built on an EROI of between 200:1 and 100:1 for the first 100 years - depending on the oil field. The net energy surplus has fallen every year since. Now it is arguably only supported by an average EROI of 11:1. The true cost of extracting and processing oil increases exponentially every year. All known resources are being depleted.

We could cope with that if we had not already wasted that one-time endowment and taken all the easiest and cheapest and best quality stuff. Unfortunately we used our surplus energy for drag races and making our society complex and brittle, while we live “the high life”.

Not just oil, but all the mineral resources used by humanity are being depleted at an ever faster rate. As with oil, everything we take from the ground is now harder to dig down to, and of lower assay, as we have spent the last 150 years taking everything that is easy. There is both a monetary and energy cost to this deteriorating trend. Oil users have tried to improve the efficiency of oil use...yet we still produce 60 million new cars a year with reliance on the internal combustion engine. The various producers of all minerals have focused on technological gains such as in situ mining, where only a rich slurry of concentrate is brought to the surface. For oil it includes SAGD, horizontal drilling, fracking etc....But everything has a cost. Just thinking of the way the oil industry (which is arguably one of the most difficult and dangerous industries with the most cutting edge technology) has adapted to the reality that all oil wells deplete over a short period and oil is a finite resource, we should consider the following summary of efforts to maintain and enhance production...

Gushers and easy oil are long gone.

Down-hole pumps, surface pump jacks (nodding donkeys) and in-fill drilling are the first recourse. Water flood to pressurise reservoirs is the second.
Enhanced techniques using CO_2 the third. Re-drilling using horizontal wells with multi-stage fracking is the fourth. Hitting marginal supplies in difficult and dangerous places like deep water and Arctic is the fifth. Growing crops and harvesting them for bio-fuels is the sixth (and while politically correct this has an EROEI of less than 2:1...i.e. worthless but profitability of the entire US bio-fuel industry is based on Government subsidies). Extracting synthetic oil from tar sands laced with asphaltenes is the seventh. Drilling and fracking source rock for tight, light oil is the eighth.

The ninth... coal to gasoline (like South Africa's SASOL) is dirty with a large nasty footprint. Or tenth, which is possibly attacking the kerogen contained in the rock of the Green River formation (Colorado) USA, and Eastern Australia. But kerogen won't convert to oil for a dozen million years - if ever.

Then there are the high risk under-sea plays like Kashagan in Kazakhstan, where after USD70 billion has been spent, and many years of effort, they still cannot produce the oil that they know is there due to acidity mainly. Shell spent USD7 billion to extract Arctic oil, almost lost their drill ship in the process and three years later have abandoned the attempt. Then there is Tupi, Carioca and other fields in the Santos basin of Brazil, where the oil is not only under the sea but under a thick layer of salt and then under ground...heated to 200+ degrees C.

But for every one of these extra costly measures to extract oil, there is a matching processing cost. The cost of extracting water from oil. The cost of disposing of waste water. The cost of extracting Asphaltenes from tar sand. The use of diluents to transport the heavier oil product. The cost of processing stuff that isn't really oil, the cost of transporting stuff that isn't really oil, the cost of extracting proppants and chemicals in huge quantities from tight, light oil.

True every “barrel” fuels the industry, but not all oil is the same and as a general rule every new barrel found replaces one of better quality that cost less and gave a higher net energy yield.

The cost of energy to do all these things (and every year the capital costs grow) and the stuff we get as a result, resembles less and less the oil on which we built our complex society. Every year the well pressures fall. Every year the volume produced from every well drops. Every year, the cost of replacing falling production grows greater; the quality of what is extracted is lower and the cost of processing is higher.

Every year we make our society more complex and use more machines, vehicles and toys.

In the mid 2000’s every project I was assessing was in the USD billions. Now it is in the tens of billions and the money consumed each year to try to keep the oil industry producing our essential energy is in the trillions.

And if that weren’t all, the powers that be are now taking the resources needed to fund capital development off the table. In part this is due to current prices being only about 50% of full cycle costs for the industry. In part funds won’t be available in future because the losses on junk bonds for shale plays (that never should have been pursued) that have gone bust. In part because the current global warming religion says we must leave all hydrocarbons in the ground.

So like my assessment that we will have a financial crash very soon, I estimate that sometime between 2020 and 2030, our industrialised society will begin to implode. Given the damage to the global financial system from the 2016-2020 crash, I don’t see any way back from the events that will see an end to globalisation, large scale international trade, population increases and this will more than likely cause a sudden drop in real living standards.

There is no point in writing anything further on that. I will either be right or wrong, and so I will confine myself to updates on progress and timing for collapse. Personally, I don’t think even a successful launch of the mythological EESU could change our trajectory.

I hope I am proved wrong in all respects.

Institutionalised Cheating

Russian doping of athletes is the least of our worries....

The worst crimes to defraud the general public often come as the result of the revolving door between Government and firms containing industry experts. The laws relating to commerce and criminal conduct are examples and tax law as a sub branch of law and accounting is also.

Generally the legal system is modified to provide smart lawyers with ample opportunity to prove that the guilty are innocent.

The tax system is bent to ensure that tax accountants and tax lawyers can work out ways to circumvent every new tax law. Often the experts are retained as consultants by the IRD and then as soon as the changes to legislation is passed, they sell their services to clients to show them ways to get around the law that they advised the IRD on. Top tax accountants and lawyers make million-dollar-plus salaries as a result.

However, the multi-national fortune 500 Companies take it a step further. As a group they probably have many trillions of cash and investments locked up in tax havens – funds that they cannot repatriate without paying punitive tax. Usually it has been earned by overstating charges for goods and service from branches in tax haven countries to their branches in regimes that are assessable for tax on profits. This has been happening since 1945...the good old transfer pricing rort J.

There are five steps to get around that blatant tax fraud, however it would take concerted action by all countries including USA (where the biggest defrauders are based). The USA is the sponsor of these practices, so it is unclear whether they will ever be addressed. Perhaps Donald Trump? After all, he has never benefitted from international tax rorts. So I am sure he has his eye on them.

At last someone has gone public and when you listen to this you will understand why change should happen...

https://www.youtube.com/watch?v=5bNKopQeuqs

Negativity

What happens when the music stops...

http://seekingalpha.com/article/3990946-long-music-playing-keep-dancing?source=email_macro_view_top_articles_0_0&ifp=0

As interest rates continue to be depressed by central bank action, we all know why. It is Governments meddling with retail demand for consumer goods. Consumption is seen as the driver of the economy, although often it is driving someone else's economy as they supply what we want.

Meantime it is very bad for folks on or saving for a pension. How do you find yield for your investment money if interest rates are dropping everywhere? Well you invest in ultra high risk stuff in the hope that will suffice.

Low risk bonds can almost be more like a liability than an asset...

http://www.caseyresearch.com/articles/heres-what-happens-when-the-world-overdoses-on-debt

Very few pension schemes are able to make a profit now without taking on enormous risk.

So if the US Fed increases interest rates, it is only going to be to keep the pension funds solvent. It won't work, but it may be worth a try.

David Stockman's graph at this next link is interesting...

http://seekingalpha.com/article/3990935-chart-day-crash-warning-household-net-worth-dpi-2000-2007-highs?source=email_macro_view_eco_0_19&ifp=0

and the Japanese Government is buying its bond industry...

http://seekingalpha.com/article/3990934-chart-day-abenomics-work-unsustainability?source=email_macro_view_eco_1_20&ifp=0

Jeffrey Snider is right IMHO...

http://seekingalpha.com/article/3990951-depression-confidence?source=email_macro_view_eco_2_21&ifp=0

China

The Asean unity of Chinese expansion in the South China Sea was torpedoed by Cambodia who just want to cosy up to china...from Sinocism

"**ASEAN deadlocked on South China Sea, Cambodia blocks statement | Reuters** The Philippines and Vietnam both wanted the communique issued by ASEAN foreign ministers after their meeting to refer to the ruling and the need to respect international law, ASEAN diplomats said. Their foreign ministers both discussed the ruling with ASEAN counterparts in the Laotian capital. But before the meeting, China's closest ASEAN ally Cambodia opposed the proposed wording, throwing the group into disarray. Phnom Penh supports Beijing's opposition to any ASEAN stand on the South China Sea, and its preference for dealing with the disputed claims on a bilateral basis. **"**

It seems the two top leaders in China Mr Xi and Mr Li are at odds...from Sinocism...

"**Discord Between China's Top Two Leaders Spills Into the Open - WSJ** China's social-media users are cautious in discussing the divide, using coded references to a split between the southern and northern parts of the party and government's Zhongnanhai leadership compound, where Messrs. Xi and Li work, respectively, In what people familiar with the matter depict as a subtle response by Mr. Li to criticism in the People's Daily article, four words were added to a state-media news report about a May 9 conference call led by the premier. The words, which these people say weren't part of the call, were xiang ren wei guo, an idiom loosely translated as "the premier endures for the nation." They say Mr. Li personally vetted the media report before it went out. This month, Mr. Xi held a meeting with more than two dozen of the country's top economists and analysts. Mr. Li wasn't invited, according to people with knowledge of the matter. "It's a meeting held by Xi Dada," one of the people said, using a popular nickname for Mr. Xi. "It's not necessary for Li to attend." "

While I think the IMF understates the amount of bad debts in the Chinese banking system, there is enough here to precipitate a bubble popping event. It will need to be carefully managed by the PBOC...

http://www.theage.com.au/business/china/china-may-have-17-trillion-of-risky-loans-imf-report-says-20160415-go7cxh.html#ixzz45tA2Muip

India

There are signs that the Indian economy will become a powerhouse like China but with a slower growth trajectory...if it can find the resources.

In 2004 when I first looked at Chinese oil use, it was 4 million bbls per day...now it is 11 million. Today India's consumption is 4 million barrels per day. But will they get access to oil sufficient to keep the party going?

http://seekingalpha.com/article/3990952-india-making-big-progress-oil?source=email_macro_view_top_articles_2_2&ifp=0