Global Future Analysis

ISBN 978-94-6012-001-5

The Global Future Analysis is a shortened version of the Global Resources Analysis.

The Global Resources Analysis can be downloaded at www.planck.org.

The Global Future Analysis has also a commercial/bookstore paperback version which is available globally.

The name of the commercial version is 'the Perfect Storm: when the energy crisis joins the credit crisis'.[*]

[*] Some national publishers has named the book "The end of globalization (as we know it)." or "Blueprinting the 21st century.".

It has been said that there are three types of people:

Those who make things happen.

Those who watch things happen.

Those who wonder what happened.

You need to understand Currencies, Credit, Minerals, Energy and Water.

Watching the News without some basic knowledge of those five is useless.

Knowledge of those five make History, Present and Future clear to you.

Food = Soil + Phosphorus + Fossil Energy + Water.

Economy = Production + (Currency * Credit) – Cost (Minerals + Energy + Water).

Wealth = Economy * Currency * Geopolitics.

"What people need to hear, loud and clear, is that we're running out of energy in America."

May 23, 2001
George W. Bush

Short Index

Long Index

Weak leadership
Weak journalism
Absent opposition

Headwinds
Bank deficits
Corporate deficits
Energy deficits
Policy deficits
Trade deficits
State deficits
Currency deficits

Sidewinds
General
Credit
Energy
Water

Tailwinds
Adjusting behavior
Advanced localism
New models
New technologies
Increasing efficiency
Increasing localization
Increasing wellbeing
Less spills
Less mainstream
Positive immigration
More remigration
More migration
Balanced bilaterals
Less superpowers
Less military
Less terror
Digital standards
Digital killerapps
Digital bandwidth
Digital communication
Digital information
Digital trading
Extended product lifetime
Operating systems
Digital programs
New digital developments
Energy awareness
Dependency awareness
Trade deficit awareness
Budget deficit awareness
Energy technology

- *Bio technology*
- *Glass technology*
- *Finance model*

Scenarios

- *Doing nothing*
- *Extending the past*
- *Reinventing prosperity*

Solutions

- *Awareness*
- *Policy*
- *Reduction*
- *Conservation*
- *Efficiency*
- *Changes*
- *Technology*
- *Management*
- *Finance*
- *Models*

Actions

- *Basic*
- *Generic*
- *Specified*
- *Facilities*

Results

- *Peace*
- *Prosperity*
- *Welfare*

Directions

- *Advanced localization*
- *Advanced globalization*
- *Finance solutions*
- *Energy technology*
- *Bio technology*
- *Food technology*
- *Silicon technology*
- *Mineral technology*
- *Knowledge pollination*
- *Geopolitical downsizing*

- *Rockefeller*
- *Koppelaar*
- *Campbell*
- *Deffeyes*
- *Middelkoop*
- *De Putter*
- *Murphy*
- *Quinn*
- *Planck*
- *Einstein*
- *Tesla*
- *Kawaga*
- *Derksen*
- *Allen*
- *Schumacher*
- *Raiffeisen*
- *Drafting*

Credit

- *Definition*
- *History*
- *PeakCredit*
- *Crunch*
- *Causes*
- *Solution*
- *Timing*
- *Future*
- *Geopolitics*
- *Replacement*
- *Proposal*
- *Alternatives*
- *Barters*

Energy

- *Definition*
- *Reserves*
- *PeakOil*
- *Exploration*
- *Impact*
- *Crunch*
- *Geopolitics*
- *Denial*
- *Price*
- *Cost price*
- *Export taxes*
- *Price volatility*
- *Conservation*
- *Transition*
- *Distance*
- *Models*
- *Localization*
- *Supply*

- *Climate*
- *View*
- *Installbase*
- *Investments*
- *Governments*
- *Characteristics*
- *Theory*
- *Science*
- *Inventions*
- *Military*
- *Currency*
- *Refineries*
- *Power*
- *Storage*
- *Hydrogen*
- *Infrastructure*
- *Transport*
- *Industries*
- *Food*
- *Carbon*
- *Future*
- *Integration*

Water

- *Scarcity*
- *Domestic*
- *Industry*
- *Agriculture*
- *Pollution*
- *Export*
- *Production*
- *Transport*
- *Conservation*
- *Purification*
- *Floods*
- *Sea*
- *Crisis*
- *Geopolitics*
- *Integration*

Perspectives

- *Sun Light*
- *Sun Concentration*
- *Sun Thermal*
- *Air Wind*
- *Air Thermal*
- *Sea Wave*
- *Sea Stream*
- *Sea Tide*
- *Sea Chemical*
- *Sea Thermal*
- *Sea Power*

- Geo Thermal
- Geo Power
- Hydro
- Coal
- Oil
- Local
- Gas
- Tarsands
- Shales
- New
- Patents
- Future
- Bridging
- Biotic
- Magnetic
- Voltaic
- Resonansic
- Laseric
- Pressuric
- Catalytic
- Chemic
- Ionic
- Water
- Air
- Fusion
- Wrong
- Invading
- Stratospheric
- Fission
- Ideas

Proposals

- Analyses
- Models
- Facilities
- Exposure
- Globalization
- Movement
- Participants
- Events
- Examples
- Sponsors
- Prototypes

Introduction

Prologue
Summary
Direction
Author

Prologue: The Global Future Analysis describes the causes and impact (effects and dangers) of eight global crises that currently occur/grow in the same short period of time (only five years) in times where (and also because) population and purchase power (=wealth) steady grow to higher levels. The Credit Crisis, the Energy Crisis, the Water Crisis, the Mineral Crisis and the by these 4 basic crisis caused other crisis as the Food Crisis, the Stagflation/Economic Crisis, the Currency Crisis, the Governmental Crisis and the Geopolitical Crisis. The Credit Crisis started mid 2006 with the end of the house price rise and came one year later in mid 2007 to the surface with the first signs of the Credit Crunch (back in those days not called the Credit Crisis yet) by the fall of two major hedge funds of Bear Stearns and will find its end within some years with a severe Geopolitical Crisis. Leaving the Climate Crisis (too complex and over exposed) and the Moral Crisis (Guantanamo Bay, Abu Ghraib, water boarding and weeks of imprison people in body size coffins: the War on Terror has became a War on / Breakdown of Values: breaking/destroying just that what we want to defend and promote and believe in) untouched. The problem with simultaneously occurring crises is that they enforce each others impact severely. As by Murphy's Law simultaneous appearing crises enforce each others impact: When 1 crisis has 1 impact equivalent, 2 crises simultaneously has 4 impact, 3 crises simultaneously has 9 impact and 4 simultaneously crises has 16 impact. Energy has given 150 years of tremendous economic growth. The current model/structure of financials and governments is based on economic growth. When economic growth disappears and even turn into economic decline by increasing energy costs and over the top credit supply in the market, they both got stocked / come into problems and influence economies/societies severely the other way around. The Global Future Analysis has not any doomsday characteristic, but just a realistic analysis of causes, effects and dangers and a complete list of solutions. Just see the future economy as a mix of the next six price facets (as six shove switches of an equalizer): Energy high/scarce, transport high/scare, materials high/scarce, credit high/scarce, technology high/abundant, food high/abundant and labor low/abundant. Combine/forecast these six factors or influences as good as you can and you've got an accurate future image. The current combined energy and credit developments will have huge side effects/consequences. That's no rocket science. An simple example everybody could agree on: International holiday travel has been boost by the low oil/energy prices of the last 20 years to massive volumes. When the low oil/energy prices are over, massive volumes in holiday travel will shrink/implode as easy as they have boost in the past. By high energy prices air travel become a luxurious event like it was again. As simple as 0 + 1 – 1 = 0. To go beyond this example: Shortened supply of energy and credit will of course have huge effects. Most countries (except for Russia and Brazil) will face a lost decade ahead, and countries with combined energy/credit problems (more specific: almost the whole western world) will face two lost decades ahead. Economies that will be able to develop in the shortest time advanced localization (right combination global/local that suites the occurring developments) will have less damage of these developments. The stocks of banks with US housing and/or treasury exposure will be worthless. All these banks will be nationalized. Pension funds with US housing and/or treasury exposure will have severe capital problems. In the US foreclosures will be stopped by both FDIC government policy (see the IndyMac Bank after the run on it and the FDIC

intervention caused by that) and maybe additional home owners protection legislation (in case of mortgage ownership rights of creditors above the FDIC inventions), making the whole US mortgage debt in financial value as weak as mud. Both bank stocks and commercial debt paper will become total worthless. A housing price devaluation has forced a capitalistic model government to swift to Capitalism Light as the economy bleeds foreclosures, bankruptcies and jobcuts. Treasury Secretary Paulson (hired for his splendid relations with the higher levels in Chinese Government) stated July 22 that 'banks must cut dividend payments and acquire new capital'. This combination (no dividend payments plus the rising capital) eliminates totally the capital rise option by stocks: nobody will buy share of banks with liquidity problems, that don't give dividend on stocks while they still have fruitcake balances full of over-valuated valuated assets, which stock prices only can go more down till the clean up their balance sheets. The value of financial stocks will vaporize to zero value. The stockholders of Freddie Mac and Fannie Mae are the next ones to face this. The stockholders will be sacrificed in the rescue attempts. Sacrificing the bond owners is not possible without huge conflicts: Huge foreign governments and central banks will not accept this. Nixon has done such a huge international risky step back in the '70ties when there was only $ 18 bn gold left and foreign governments wants $ 36 bn gold back. But that where other times: the US was the center of the world and the Cold War binds the effecting countries to the US. This is no longer the case: the US is no longer the center / driving force of the world and Russia has left the military road to power and has gone on the economic/trade/currency road to power. The financial system is broken. Paulson will not be able to fix it. There is a problem with underlying values that can only can be fixed by actual valuating. The financial system will not be able to absorb such a tsunami of revaluations (downwritings). The Euro for example is very 'strong' 'covered' by US dollar cash en securities. An actual example: the top level all (regardless quality) government sponsored mortgage buyers Fannie Mae and Freddie Mac are very heavily funded by foreign nations and foreign currencies. There are two options: 1) revaluation or 2) replacement. In case of revaluation the US government will decide to reduce the debt burdens of both the nation and the GSEs (like Fannie Mae and Freddie Mac) by an unilateral debt cut (similar to Nixon's ending of the dollar convertibility into gold in 1971) or currency deflation, otherwise they will sink by their debts. All commercial and governmental debt paper overall will be valued at 50% maximal (by bankruptcies, high inflation and devaluation). The US will become the bad boy in the global class, by whom irresponsible behavior we must overcome the energy crisis without a healthy financial system. People who say that the Credit Crisis is over / has bottomed (while house prices still drop severely) must be publically exposed as no-brain 'happy days are back again' intellectual light weights: these (mainly) guys don't really know what they're talking about. Banks has still hide enormous amounts of worthless mortgage CDO's, hides also enormous amounts of lost value on the stocks they hold, the air is (further) pushed out of both the housing market and the stock market and banks tries to delay downwriting as long as the auditors can be talked in to support this (based on 'historical' instead on actual value norms): cooking the books is about just being able to talk smooth to auditors. The ability of banks to create loans (as in: generate new turnover that is needed to get profits to cover/balance the losses) is reduced severely: turnover is no cure in a slow market with also less money creation. And while economies stopped growing and even starts declining, complete new lost area's are on the horizon: credit cards loans, student loans, install base leasing, consumer credits, corporate credits, LBOs and the CDSs as risk transferring derivate of all of these non mortgage based credits. According to the BIS (Bank for International Settlements) end 2005 the CDS value was $ 14 trillion, end 2006 it has grown to $ 29 trillion and end 2007 it went up above $ 45 trillion. Give it a beautiful name, add some fake good weather insurance and sell it to less thinking no-brainers who are not interested in real underlying values nor real insurance, but just in high bonuses on fake profits and blinded by the economic growth dogma. Is insurance by Ambac, MBIA

or FSA something not fake? They guaranteed the collapse of a bubble with only coverage for small losses. They only guaranteed the sun during daytime. They're designed to insure against incidental failures, not against total market failures like we have now. The collapse or serious downgrading of those two leads to a complete new reconsideration of the financial assets that are 'backed' by them. This is the reason why everything is kept where it is, without almost anything falling (except for the real underlying market determined values): demanding hard cash from these insurers is like shooting oneself into the leg: the cost of it (loss of fake insurance on more assets) is less than the cost of keeping worthless assets fake in place. This immediately reduce the loan creation capacities of financials once again dramatically if they will apply to the (rational) Basel II standards. The last phase of downwriting will be just stripping goodwill in the books: goodwill will be disappeared and therefore become worthless (impairment: downward revaluation of fixed assets). Conclusion: The world has financed USA her over consumption if it was a heavily real values producing gold mine. Financing the USA economy was subsiding a fake (mainly on consuming by debt grow based economy) is now making real and severe losses: the time of the real values are arrives when debt/credit grow had reached it max: then the hidden problems (not having a producing economy) hit reality with years build-up tension. The position of America's at the top of the 'global economic food chain' has been blown up by overstretching this very comfortable position, by even wanting more than that. This consuming focused development has depleted the nation of its hard-earned wealth, and has led the US to the brink of ruin. It was the wrong way, it wrecked a very good economy based on being the best producer of the world. Current American capitalism is just a new type of socialism, where consumption and not production is king. Now the USA has to restructure their consuming/debt based economy to a producing economy (not easy and very painful) and pay off their debts (not easy and very painful), a quadric burden caused by very bad financial and governmental polities, feed by the too stupid for words believe in 'economic growth' (even if it is fake: as long as it 'growth' it did the job (temperately of course: faking is economic not sustainable). The backfire of economic faking is severe and hits the fakers and their followers hard. A lender of last resort (as the FED is) is only functional by incidental bank failure, not by a total financial market failure like is happening in 2008. The second option or solution for a sinking financial system is replacement. This option is attractive to governments because it makes the best out of a severe problematic situation for them. This option eliminates all not by real assets covered debts and assets and is really robbing completely everyone that has not covered assets. This option is appealing for governments because 1) they can blame others 2) gets overnight freed from their debts 3) give the possibility to expand international power. The only hope the world have that this re-start of the financial system will not be initiated by the USA. First 1971 (50% lost), than 2008 (??% lost), the US has showed the world that they can not handle the wealth of having the money presses. Financial systems is about trust. Two times bad luck is no bad luck, but bad management. If there will be a global currency: it will not be the new US dollar, the world economy and national governments will not accept that based on 1971 and 2008. There are three options: 1) a new global currency (who will have the trust to be the bank? energy surplus nations?), 2) new national currencies (based on money creation by state assets -buildings, bridges, waterworks, powerworks, etc- and spending -dangerous!- instead on money creation by fractional banking based debt increasing, no central banks any more, the treasury takes over the money supply, government and money supply becomes one again, taxation disappears, inflation will place taxation -does it already substantial- and will only appear as governments overspend relative to real economic growth -otherwise government investments only have positive effects-, sustainable economies no longer based on exponential growth -will be seen as concept of the past- but based on sustainable growth -financials and assets will grow side by side- will appear, democracy will guarantee nations that they can fire bad national management, states will only

invest, will cut in overhead and subsidies and social systems with a gradual exit strategy on it) 3) local currencies (as energy prices will rises, distances will get shorter and shorter, economies will become more and more local advanced, the future of any above national governmental layer is at stake: the action will be on the whole world many local, trust in the financial system and above local layers present national/supranational/global governmental structures will be weak, local currencies will appear). Local enhanced economies doesn't are interested in chasing a man with a beard in a tent somewhere in Pakistan, nor have appetite to pay for thick governmental layers far away with low contributing economic values for their local enhanced economies. Energy price rise changed the view on the world for everybody globally. Local focused enhanced economies has other priorities. Terror can not hit them, they're not interested in terrorists. They just want a good economic local performance. The economist Kunstler describe (based on energy price developments) an economic perspective that "national governments maybe lucky if they'll still be able to manage to pick up the phone in 2020", and "federal or super-national governments will be totally abandoned in 2020 by the increasing importance of economic localization due to energy prices". The Credit Crisis could not pick a worse timing: overcoming the Energy Crisis is very much (near one 100%) about being able to invest: transition takes capital for emerged downwriting old high energy demanding investments and emerged investment in new low energy demanding economy. And maybe the effects Credit Crisis just speed up the answers to the Energy Crisis (advanced localization). Economies with no credit crisis problems will also perform much better, being able to address the energy situation (equals energy investments) better, quicker and more intense. Don't shoot the messenger for al the information present in this analysis: People that have though about possible consequences often/always have (like chess players) though about possible solutions. So the impact of possible positive changes/reactions has where possible been taken into account in this analysis. Knowing where the stones and holes are on the global road next years is no luxurious knowledge: this knowledge ease driving a lot. Solutions enough available, but the first step is recognizing and admitting that there are some severe problems actual occurring and some tough consequences caused by these ahead. This comprehensive analysis present all these facets in approximately 150 pages text-only without illustration pictures/graphics. This Global Future Analysis is a shortened, more popular written version of the much more extended and comprehensive approximately 250 pages counting Global Resources Analysis, which has been read by many global leaders (for testimonials see the GRA part on the www.planck.org website).

Summary: The driving force of the last 150 years of human economics/civilization is characterized by one facet major alone: The abundant availability of low priced energy. This energy has given us the opportunity to do/realize what we did. Therefore let's start with the Energy Crisis. The origin of both accelerating wealth (history) and possible accelerating decline (future) is: Energy. The economic growth we have witnessed the last 150 years has been totally fueled by the availability of cheap and abundant energy. Growth of prosperity levels where equal to growth of energy use in the 20th century. In 2005 the oil production start flattening and oil prices went up year after year. The world price has gone up from $ 20 per barrel in 2002 to almost $ 150 per barrel by mid 2008. Ask a statistic analyzer to plot a line with this same level of rise for the future, some anchormen has someone asked to do so. Alexey Miller (since June 27, 2008 deputy CEO of Gazprom, as the State demanded the CEO chair) foresees the $ 250 price level before the end of 2008 and if demands stays growing, Peak Oil decline continues and the Middle East tensions goes wrong the prices will continue doubling each year for the next 5 years, till oil reaches it economic price maximum and than the granting based distribution system will be placed on top of the price based distribution system. Everybody with a little common sense must underwrite that oil exports from Iraq, Iran

and Saudi Arabia will become zero if those regimes will fall. And that they are stable is unfortunately the truth. There's already the issue that demand that outstrips supply, the issue of danger of declining supply due to PeakOil and issue of region political instability in the main oil production area of the world. Three huge facets, that favors only the upside of the oil price. Because we use energy for everything, higher energy prices changes everything: everything got much more expensive: energy takes its part of the economy for ever, leaving less space for other things. Higher energy prices are the stick into the wheel, which could slowdown everything. Without cheap and abundant available fuel, economic movement stops. What has boosted economic progress could also brake it / slow it down. Everybody that says that technology will solve it automatically when the demand is there, doesn't understand a) economics (the fact that a dollar only can be spend once: higher energy costs therefore leads to less other purchase power and therefore too little or severe stagflation), b) the concept of energy (energy doesn't fall from the sky, it is or it isn't, energy is power, energy is not technology), c) the fact that we use it for everything we do (live, produce and consume) and d) the enormous amount of energy the world uses each day. When we start realizing these four facets, we know that we're in trouble concerning our current way of living when the decades of cheap and abundant energy are over. Energy is not just transportation, it's warmth, it's hygiene, it's water, it's food, it's everything we do/use and than that's over. The energy price component of each product will getting clear to us all in the next and it will hit over current prosperity/development over and over again. Materials that become too expensive we can replace by other, technology will give us that certainly, maybe some kick up in that, but materials are not the problem. Energy and water are the key values. Short after the start of the energy crisis, many regions of the world also will have a water crisis. Water is becoming a severe problem in many regions, and will become the oil of the 21st century: water deficit cities will be water supplied by supersized water seaships/tankers and citywater will become a regular trade commodity. Desalination of sea water is technical possible, but demands lots of something that isn't yet any more cheap available: energy. Food export is just agricultural water export in a product: 80% of the clean sweet water of the world is used for growing food. As energy and water costs rise, every product price rises, eating purchase power out of economies, slowing their growth and (in energy deficit nations) structural decline economic levels. Hydrogen is no source of energy, but just a storage/transportation method for energy. As describe in the first law of thermodynamics: energy can't be lost or created, only transformed. The problem of lack of abundant and cheap energy can only be fixed for always when we could explore existing energy in nature on a way the can be done anywhere, by looking into nature where the 'big' energy sources are. Or this will be by the use of a complex (low/high frequent, resonance, magnetism, lasers, catalysts based) nuclear fusion process of simple structured elements, that harvests energy out of nuclei, or it will be by a complex (low/high frequent, resonance, magnetism, catalysts based) electrolytic process that 'harvests' energy for electrolysis out of the 'cooling' water (and this way being in line with the first law of thermodynamics), or this will be by a complex (low/high frequent, resonance, magnetism, catalysts, not traditional warmth pump based) process that takes energy out of the air temperature. A total new approach of our look on energy is needed, we need horizon widening not digging deeper and more narrow. New directions in science asks for new genius people like Tesla who was the father of the second industrialization wave and the 20th century. He could sit still in his lab for hours, surrounded by high voltage flashes, just focusing his mind on electricity, to became 'into' it. We need new approaches. We need extraordinary genius people that shape the 21st century technological. Meantime we face severe rising energy costs, declining economies in energy deficit countries by intensive transferring of their wealth to the energy surplus countries. Due the fact that energy will become very expensive, everything that requires energy will be avoided as much as possible. Distances will be shortened, local economies more vitalized. Governments in energy deficit nations will get into severe financial

problems, as their financial feed out of the economy slows down and their costs rises. Many companies will go bankrupted, banks will not survive this second huge attack on their capital positions (after the looses caused by US credit crisis). Unemployment will grow to high levels, purchase power will decline dramatically. Federal state structures will collapse due their debts. Some currencies will loose the trust of the market and collapse. The whole CO^2 discussion will be completed abandoned in 2009, as economic struggle rises in the second half of 2008. The US Administration already declared mid July 2008 (during the G8) that "addressing the CO^2 problem in current severe economic climate is not a wise thing to do". CO^2 discussions will be seen as icons of luxurious talk in former luxurious times when low energy prices allowed that. The whole CO^2 discussion will be pushed of the table of national and supra national governmental bodies by the economic problems. They ended the discussion with a huge tree planting plan that must be executed by local governments. Is the Global Future Analysis a doom report? No, it describes/pictures three scenarios: 1) doing nothing (increased turbulence due not realizing the needed adjustments) and 2) extending the past (squeezing the remaining traditional energy sources and fighting about it, so the past can be extended a little longer) 3) reinventing prosperity (building a new type of prosperity that uses less energy: something we have no experience with: by realizing many needed adjustments). We can not continue the way we do now: it will become to expensive, but we can maintain and build certainly prosperity. We got prosperity by carbon based energy, we loss prosperity by the price rise of carbon energy, or we divert our economies to low energy economies with maintenance/development of as much prosperity as possible. Turbulence or prosperity. It's just a choice and yes, we're late, much too late. Therefore some negative impacts will hit harder and some changes will be realized more difficult. But that 2008 is the 'flipping' year is obvious. Not many leaders and economists that tell there is no structural problem. This was different back in as short as in 2007. In 2008 the world energy market awaked us by the $ 150 oil price and we are finally awakened and discuss responses. In 2009 and beyond we will realize any solution we can think of. Many solutions (almost any we can think of) will be cheaper than $ 250 (end 2008) or $ 500 (end 2009) oil per barrel. Intelligent people can a) imaging the consequences very good by themselves, and b) imaging and develop adjustments that prevent these consequences. We must (not weakly vaguely environmentally, but strongly driven by energy price rise economics) redesign our economies to low energy / high prosperity economies. Stocks in airlines, airports, airplane manufacturers, car manufacturers, car dealers, hotels, tourism industry, urban real estate funds and financials will become worthless very quick. There's a severe economic storm ahead caused by both the credit crisis and the energy crisis. Time to bring the best in yourself to the front to grow prosperity by reducing energy use. We need to invest. The huge problem by this investments is the fact that the credit crisis is also happening. Financial capacity from decades has been put in the financing overconsumption within the US. As prosperity growth and not prosperity sustainability was the golden statue, the US has had 15 years an economy that was not 60% production and 40% consuming (like it used to be), but the other way around. 15 years at least 20% overconsumption of $ 10 trillion (US average GDP in these 15 years) making the credit crisis overvaluation problem to approximately (15 * 20% * $ 10 trillion) $ 30 trillion in size. This far beyond mortgages: the mortgage based cash has fueled the wrong economic direction of consumption based on world credit based on exponential growth above production for domestic/world markets based sustainable growth. Paulson with his new rescue fund can never extinguish a fire of this never ever seen size. It's like with one bucket of water trying to extinguish the 9/11 fires in the World Trade Centers. He also overlook the structural damages to the building structures of the financial markets. This problem has grown too long too big to get solved now. Underlying values will be reduced by 50%. That's the problem. The desire to go further where the market was before July 2007 is a dream from people who doesn't understand the causes of current situation. They're just stupid

'happy days must come back again' people with 0.0 analyzing capacities. YouTube for Bush Wallstreet and see what the president's real opinion is on the Credit Crisis. All the by the banking industry (IIF) in her report recommended changes will not fix this crisis, but will certainly help to prevent to birth/growth of new ones, leaving the current crisis unsolved. The declining dollar has contributed a huge part to this huge amount. The current private/domestic mortgage market is (based on what data? on-balance data? off-balance there is a whole undisclosed financial world to discover) $ 12 trillion in size and is at least 50% over valuated (this a cool $ 6 trillion damage for the stock owners and the CDO owners) in recession. The real value of property is not the mortgage amount, but the payment power of the mortgage takers or tenants for the years to come. That's the basic valuation in the office/commercial real estate market since ever, that has ever made valid sales prices. The on the edge of defaulting balancing giants Fannie Mae and Freddie Mac have almost 50% of the $ 12 trillion US private/domestic mortgage market on their balance sheets: $ 5.2 trillion in liabilities (for getting this number: the US federal governmental debt is 'only' $ 9.5 trillion by a GDP of $ 13 trillion). Nobody knows the size of their off balance liabilities, therefore they will be more than anybody expects. The size of their off-balance liabilities can only be estimated, but will at least equals their on-balance liabilities, with two huge differences: 1) the equity part of it (the part of the off-balance values that is on-balance by Fannie and Freddie) will be vaporized and 2) the balance sheets of the off-balances will be more worse than expected. Reason? Putting deals in off-balance SIVs -special investment vehicles- is only done when taking on-balance should demands for more equity, otherwise they always should be on the main balances: every CEO wants a big and good balance: Taking items off-balance is part of that accountancy game of doing more with lower equity levels (positive said: maximization of equity effects). When Fannie and Freddie collapse all the off balance factors will become open also. When they both default the federal governmental debt can be doubled overnight. This can damage the 'AAA rating' of the US federal government severely. Taking the plug out of the bath of governmental debt grow (by an instant lenders strike due collapsing trust in the interest paying and repaying power of the US). The crisis of the housing GSEs (Governmental Sponsored Enterprises) with on-balance (after cooking the books) total incredible equity/exposure ratio's of 1/65 like FHLB's -Federal Home Loan Banks-, Fannie Mae, Freddie Mac and Ginnie Mae) could be the swift from the Credit Crisis directly to a global Currency Crisis and a global Governmental Crisis. Their off-balance ratio's are often double in size and half in equity/exposure ratio's and contains most of the risk. The book cooking factor can only be guessed, but 1/65 equity ration companies cook the books not a little. By this all the actual (as in: hard, not promised like health care of retirement checks, but hard in debt paper) governmental liabilities can be double overnight (something the actual debt funders of the USA certainly will not let go unnoticed), without any data on the real underlying value and with only one huge big certainty: a load of very value (mortgage payment power) repressing factors are actual effective and more on the way causing and reinforcing each other due to a further decline of the US economy. If the banks has problems due to mortgage value problems, the mortgages collecting superbanks has superproblems due to mortgage values. Even Greenspan has said that the problems of the GSEs are underestimated and just due time delay influences will come to surface unless the federal government will nationalize them (as in: taking all the pain in the housing market into the governmental budgets). The US government has no other option than to bail out any bank. Till Augustus 2008 there are already 9 banks silenced collapsed, emptying the guarantee fund assets already will collapsing just has been started. All banks will collapse if the US government not offer them a huge bailout possibility in witch they can sell worthless assets for high prices to the US Treasuries. If they don't do that, the US brand in the world will be wrecked for ever. After the banking industry, also the car industry and the aviation industry will follow and also the municipals will need massive bailouts. The USA economy will be more federal/governmental owned than the USSR economy

ever was in its 70 year existence. Not cutting out problems by recession equals bailing them out. It's the one or the other. The US Treasuries will have to install an effective interest/debt collecting Asset Agency, something they will certainly not be very good in. All US debtors will try to re-negotiate both height of the debt, interest rate and payment schedules. This can not be different as the economy can not feed the huge interest/repayments the current finance contracts require. This whole operation will soften or quick sanding any debt. The enthusiasm of the world for funding the US governmental, municipal and domestic debts is already tempering a lot. In only 40 years from largest creditor of the world, to the largest debtor of the world: don't except much economic power/admiration/funding for/of a debt loaded and debt addicted debtor. Being the money sink/spender of the world is a time limited concept. Just by wrong energy (and thereby foreign/domestic) policies is the most powerful economic economy wrecked. The world could will stop to buy US financial stocks (because they are become worthless: all financials are technical bankrupted, they just delay the clean up of their balance sheets as long as that will be possible). The world also would stop that day/week to buy US federal governmental bonds (as they are used to fill the gaps of the housing bubble on which foreign investors by the defaulted banks already has had severe damage of). The US Administration then must offer a substantial rise on interest rates on governmental bonds to become still attractive to the finance market (or the OMC of the FED must purchase all the issued bonds each time with new printed/generated money). The US federal government finally will be bankrupted and/or cause a huge decline of the value of the dollar, as they spend more than they earn, combined with the fact that the dollar no longer will be the leading currency and a stop of the foreign capital flow in the US by the investor strike. In economic terms: the US than will have a 'turnaround' (erasing all debts). The horror scenario for the USA is that the lenders to the US (they of course not will accept a bankruptcy solution), will agree to continue minimum loans in return of a set of demands (foreign managed Chapter 11 status for the USA). The US than will has an Europe/Arabic/Asian dominated lenders consortium of curators or executers that will make as many as possible assets liquid into cash. The end of the pride and independence of the USA caused by it's own bad financial behavior. Making debts is based on trust of the lenders. When that trust disappears, the lending windows are closed immediately. Of course the US will try to go into bankruptcy instead of some Chapter 11 status, but the main question is: would the world allow such a capital destroy on their private, pension funds, currencies and sovereign balance sheets, caused by one debt addicted borrower. When this happens, the independent states that forms the USA could terminate their relations with the sinking ship USA and abandon the US dollar, and Chapter 11 for the USA would still become bankruptcy of the USA federal government and abandoning of the US dollar (reducing the value of the dollar till just the value of the paper it's printed on) and by the huge debt this will cause huge, huge financial looses all round the globe (major demolishing domino effects in all global economies and all global currencies –as they all use the US dollar as main reserve currency). Being American than will be not a sexy/appealing thing. Phil Gramm (the former most senior economic adviser of senator McCain) can say that the US is a nation of winners, but winners that can not pay their bill because they've stopped producing real economic are not winners, but just poor losers. The US were certainly for more than a century long mainly a nation of winners, but they overplayed their (credit)cards severely. Above data was only the collapsing domestic mortgage market, but the same factors that brought down the domestic mortgage market, will also effect the corporate mortgage market, the private credit cards/lines, the car loans, the leasing market and the corporate finance market: Together they will loose more than $ 15 trillion in the next years rating on actual value (equals real purchase power). Everybody who has a better formula: please say so. The house of cards of trees that never will stop growing and abundant credit based on the whole world that invest in just paper value is over. Someone somewhere has to pay/take these looses. If a public exchange manager walks away with a $ 187 million bonus, you

know something somewhere in that system has grown severely wrong, that the value of money has become relative. Compare this huge $ 30 trillion figure with a World GDP of approximately $ 73 trillion and the fact that max. 10% of GDP's is savings/pensions, the conclusion is right that the part of the world (the very formerly very happy, now very unlucky part) that has financed this huge figure has to work some years just to pay for the over moneysupply/consumption that caused the credit crisis. According to US GAO former Comptroller General David M. Walker stated in departure tour of one full year lectures throughout the whole USA (and even in a YouTube address) in the last year of his office, the liabilities and unfunded commitments of the US federal administration are far beyond the actual debt clock number on $ 46.4 trillion (he called it: an extra $ 411.000 mortgage sized debt per US household and no house in return -the average mortgage size in the US mid 2008 is $ 118.000 because 31% of the houses in the US are free of mortgage-). The huge devaluation of the Dow Jones and the Nasdaq and the decline of the dollar eats simultaneously a similar sized part out of the global savings, this due the fact that much of these are invested in USA stocks, real estate and treasuries. These looses will undermine the capital attraction of the US and the US dollar severely. Foreign banks will collapse, foreign pension funds underfunded, foreign companies bankrupted. The US will loose it's winners image (and attached capital attraction) by this. In the same time the USA economic ship start to sink, the Russian economic ship got debt free and their GDP grows 7 (seven!) times in less than a decade. Economic power is the only power that has roots, fundaments and a future. Concerning the size and impact credit crisis (and also the decline of the dollar) there's a lot of pub talk ('happy days are back again') and less on data collection and analyzing based science. The US has a problem, not a small easy to cure, tomorrow away small cold fever. The economic roots of the US are rotten. The real power of the US is the attitude of the American: they will survive just and only by that, as their economic goes into heavy maintenance, destruction and reconstruction. Writedowns of figures of this size creates severe global problems. The financials are due to bankruptcy when the real downwriting times will arrive (the needed downwriting is only just started), and unfortunately the financials will get an other huge hit as economies slows down severely and bankruptcies will eat out the capital of financials further by massive numbers of defaulted loans. The financials are on dead row. Maybe even the financial system is in danger: let's certainly hope this will not happen: but somebody got to taken this looses into account. This in a time we must invest heavily in energy transition technologies both huge central as massive decentral. The credit crisis could not pickup a worst timing, but maybe the problems are connected to each other by the word overconsumption. People who say that the credit crisis is over, doesn't understand anything about economics in general and the credit crisis specific: the biggest economy of the world is feed with consumption money and current the balance sheet values aren't really there. Home values will drop till levels that matches the economic production of the US and this will hit the balance sheet of almost any financial worldwide. Unfortunately people who don't understand the real problem gets lot of airtime and wreck once again our transition time. The financials are really and without no doubt on dead row: their stock will become worthless: they will go private again (with debt reconstruction) of will be nationalized (if they collapse). All other companies will temperately suspend dividends (GM is the first one that has announced this), washout all current shareholders and also go private (if they can find a new strategic financer) or go bankrupted due the economic turmoil/stagflation rising energy, transport, water and food costs will give. Only the agricultural, food, resources and energy industries will be able to pay dividends and will have IPO's. But they will pass Wallstreet and go public on other bourses/exchanges. Wallstreet will be the global icon of huge looses and expensive operations in the first decade of the 21st century (the American Nightmare) and there are global too many 'beautiful new girls in the house' that compete with Wallstreet. The center of the financial world will no longer be the centre of the global financial world anymore. New York and

Wallstreet will go in an one or two decades economic winter phase. The $ 187 million bonus for NYSE her CEO Dick Grasso will be the symbol of a malfunction and totally bubbled system where money lost totally its connection with the real underlying values. Blinded by the light of trees that continue to grow into heaven. Being American will be no longer 'sexy'. So we've got several crises at once: an energy crisis, a credit crisis, who both cause several other crises: the stagflation crisis, a currency crisis, a governmental (debt) crisis, a geo political crisis and a food crisis. Don't shoot the messenger, but the eighth global crisis is on it's way in growth: the water crisis. Due all this turmoil the economies in many parts of the world will be set back to '50ties prosperity levels (but now with computers, mobile phones, advanced healthcare and the blessings of the Internet: the web, videocalling, Google, MSN, YouTube and segmented digital radio channels and segmented digital television channels). Cuba has faced a PeakOil similar situation in 1990 when overnight supply of cheap Russian fuel on credit came to an end. Back than in Cuba not everybody than got a job, a house, water, food, warmth, hygiene and health care. Achieving at least this basics for everyone on the planet by free market structures would be a major achievement if reasonable priced oil is leaving us. As result of this all these problems and the enormous rise of 'advanced localization' federal government structures will be set back in severely in the USA, EU, Russia, China, Brazil and India, cause they had a huge function in the 20th century, but their function in the 21st century will not very clear to the regions they serve. The American Dream (working yourself into economic heaven) has taken the wrong direction (lending yourself into economic heaven) and has turned into an American Nightmare (with the same intensity as the dream). America was the creditor of the world (due it's oil and the dollar) and has become the debtor of the world in just a few decades. Due the fact that any type of power is based on economic power, the USA is in bad weather and no longer the center of the world. There is no 'fire in the disco' (rush to the exit) yet, but the USA is no longer the main focus of global companies. States like California (the world's seventh in size economy) will leave the USA as the debt of the federal government will double their own state and municipal debt problems. Major global operating financials like AEGON already stated a new diversified global strategy: the US is not their main focus anymore, no US originated CEO anymore, but more people of the emerging markets in the board. No matter which political direction wins the 2008 presidential elections: the winner only can clean up the mess of someone else's party and pay the bill of it. The time that 1) oil sales fueled the US economy (till the start of the 70'ties) is over (is even reversed these days: oil drains the US economy), 2) anybody invest everything in the USA is over (investments has melted like ice) and 3) holds reserve currency in dollars are over (the value of the dollar is in a rush down). Financials (banks, pension funds but also the so called foreign wealth funds) will be hit severely as their US assets reduce in value to almost zero. Like Russia have had its 20 year 'has-been' phase, the US will get them the next 20 years: being the bad boy in the class by whom almost everybody (by own fault following mainstreams instead of using common sense) lost a lot of financial value. But the historical genes of the US people are strong: they're working, inventive, proud and have dreams. Within 20 years (around 2023) the independent states of the US will not be 'has-beens' anymore, like Russia also is really back 20 years after 1989. The tailwind for energy/water/food deficit gigantic cities and huge skyscrapers are over. Low energy will be the lead voice until fusion or other ways of tapping natures sources makes energy cheap and abundant again. The 20th century is over. It's really sad that Greenspan blow up the current fractional banking system at the dawn of an era where the bankers had could take as interest the very high energy budget of several generations (as by PeakOil energy harvesting will be done by investments they could have financed. In sustainable energy there are carbons/fuel to pay, just interest on the investments. Bankers and the bank share/bold owners will really not been able to benefit of these huge economic step forward for them as the fractional banking system unfortunately collapsed just before the era the fractional banking system could have it's highest part of the economy ever by

financing energy investments. They had change to sustainable double their turnover easily and everybody would benefit of it, but they blow the system by not accepting the economic cycle and by pushing is too far by greed. One huge market opportunity / unique time for them will be lost by just blowing up the system by Mr. Greenspan. That money supply fractional banking could not live for ever was clear to everyone: money creation by loans needs to issue a continuous flow of new loans to put interest payment capacity on earlier loans in the market and our planet can't bare exponential growth for ever, so sometime, somewhere the fractional banking system would have ended. It's sad that it will end just in times we need it more than every due the Energy Crisis. The first half of the 21st century will be different by the Energy Crisis and (an absent or sick) financial world due the Credit Crisis. Very different, mainly by the increasing price of oil that demands/creates low energy economies and the shortage of credit to do energy investments. Geopolitics therefore can be said in one word: Oil (or wider: Resources). The energy surplus states are the ones that will be calling the shots (just listen or get disconnected and picking up the chips of each economic activity anywhere). The energy deficit states just can only accept anything, because without energy every thing stops. Taking all this developments all together: Time to stop believing in the models of the past (which doesn't work in times of expensive oil) and certainly stop with believing the 'everything just will come alright automatically' myth and severe time to start make a future within this four huge turbulence factors. The big challenge of today and tomorrow is building low energy prosperity (high energy prosperity will be equal to dry rain). Both the Global Future Analysis and the Global Resources Analysis are not judgmental, they're pure awaking focused reports. After awakening (with its denial, defeated and than longing action phases) we need Models: using the wheel instead of the need of -very time consuming- inventing it first. Models for Action, Communication, Localization, Knowledge and Finance would help a lot. Economies, governments and people are inventive enough. They just need to be awaked and hand out Models to act. Yes, we're in serious problems, but we have also many ways to deal with it. Planck Foundation wants to hand out for free both the two Analyses and the five Generic Models to governments, companies, municipals and households that want to build a future within these five huge headwinds and let's hope that pandemia stay away for some decades: we really can't have them the next decades. The best financial advice in these turmoil times? Is capital anywhere safe in these turmoil phase? Yes, local is the most safe capital environment in these times. Put your money/capital where you can see it: invest it in your local economy or put in local focused banks (that invest it for you locally), local banks that are embedding in national (brand connected) audition structures. Than you've the best of both worlds: local and national. In times of turmoil you need maximal transparency, not a huge financial, who suddenly says 'we're sorry, but we lost your money' on the way. Build local banks, local stock exchanges, local internet exchanges and local physical and digital market places. Put your money where you month is. Trust only controllable investments, the uncontrollable investors has made by the availability of a huge capital flow into a total non-transparent system the mesh of the Credit Crisis. Trusting is nice, controlling is better. Yes, we must drill in NWAR and offshore. We need everything that could soften the impact/damage of the coming carbon price explosion collision. Everything that softens our 'smash against the wall' (Simmons) if wanted very much. And yes, NWAR only will give the world 3 months of more oil if we stay acting the same as we do right now. It's time for working our rears out in avoiding a carbon price caused collision that will damage us all severely. The oil crisis of the '70ties we worked around by non OPEC based oil production, but this production has peaked. We have lost more than 35 years and are now facing the same problems, but with out the softening impact of non OPEC energy. From the enormous amount of state subsidies we have spend in this 35 years 0.0 has been put in energy research. This blank spot on energy issues will enter the history books as the huge governmental and corporate mistake op the second part of the 20th century and the proof that the horizon of both governments and companies is

only some years ahead at it's best. But new rounds, new chances. There is no rational reason why credit-, energy-, water- and food prices will ease (besides a global collapse of the energy deficit nations) and even that will deepen the Credit Crisis ones again. One way or the other: there are more clouds than we wish. Everybody's agenda will have one huge main item at the top: sustainable prosperity with attached well-being. Fortunately solar/wind/wave/thermal originated energy/power will give us the possibility to operate low energy based prosperity and maybe (with changes above 50%) we will find ways to utilize the massive energy richness of our planet by finding ways to tap it that gives more energy than it takes to tap than. Than energy prices will go down and the expensive energy economies will end and the Fifth Industrial Revolution could take place, with one major difference: meat and minerals will stay relatively still very expensive, but distances than could expand again, but maybe we than have taste life a way that nobody ever could get us back into traffic congestion and have less time for life. Maybe than we would energy to improve both prosperity and wellbeing more than we have done the last 150 years and we just only will travel again more and further (tourism will get is rebirth) and will shower for hours again, but furthermore economies/societies don't change very much else structural because we have find a mix of well-being, prosperity and values we like a lot and we don't have appetite anymore in traffic congestion, air pollution, living in a rush, less time for family and friend, war, high taxes, fractional banking, detergent commercials, monoculture and (supra)national governments anymore as we have reached the ultimate state of living, that we like the prosperity, social life, quality food, local grown exotic fruit (by Grow|OS artificial physics influence based grow technology), drinks, music, restaurants, pubs, and houses/lifestyle where no much external forces pulls us or try to tap partial our earned wealth. Of course the post-carbon world will not be the paradise as describe in above lines for many of us. But above description is just a form of counter weight to all the deep PeakOil pessimism: when we find a way to make low energy prosperity, it will certainly be a good (and maybe even better) life. But it's clear that for the moment the Energy Crisis and the Credit Crisis will be the two sticks that will hit the world economy as we know it now very hard. And it's clear that the poor already (and in the future furthermore) will spend most of their income to just basic food and will face very difficult times, just like the rich and that it is uncertain who will be the poor and who will be the rich in new situations. See the Energy Crisis and the Credit Crisis as challenges, than no depressing doomsday pressure will take away your power and drive that you need to adjust your life. Let's make a good world for ourselves. Yes, that's one of the effects: everybody must first take care for themselves and our surrounding. This applies also to every village, city and region. Everybody will be too busy with adjusting their own life and their own direct surrounding and environment. If your surrounding can't support the lifestyle you want to live when the Energy Crisis and the Credit Crisis hits our economies, you've got to move to an other environment and you may not will be welcome everywhere you want to go. It's easy: stop daydreaming: cheap energy has made what you see and cheap energy is over, times will be changing severely, anticipate to it and build a good (of even better) life or get hit by it and suffer from not have transite your life on time to it, when it was relatively easy. Break out the jail of denial today and start building low energy (= advanced local) economies tomorrow.

Direction: The evident direction is something everyone (person, household, company and government) must distillated based on own analyses. The described direction outliners as listed at the end of this Global Future Analysis maybe could help in this process. But expensive energy will certainly lead to the birth of vibrant local economic development anywhere in the world. Both Schumacher (building vibrant local economies) and Raiffeisen (vibrant finance of local economies) will be republished a lot in the 21st century: their visions and experiences just fit the 21st century with its Energy Crisis and

Credit Crisis like tailor made suits. The USA certainly need both a Gorbashev who has the courage just say loud and clear: we have gone too far: we're broke: we say goodbye to overstretched growth, we don't switch to 'capitalism light', but go for a sustainable version of capitalism that is focused on sustainable prosperity and later on a Putin who facilitate new economic growth from the ashes of debt: a creator of sustainable prosperity. The biographies of both Gorbashev and Putin also will be published a lot for that reason. The world needs certainly new Nikola Tesla's: people who design the for the 21st century needed technology, like Tesla has done that for the 20th century. People who are not able only to theorize the need of new developments (like this report only does), but actual outlays a set of needed total new physical, energy and chemical understandings and also will design the devices need for utilizing it. Tesla has done that and initiated the Second Industrial Revolution (coal/stream to electricity), we need now people who will initiate scientific new horizons and practical device design (two complete different worlds that must find each other: the need each other) the Fourth Industrial Revolution (expensive carbon to yet limited renewable, therefore localization direction). The Fifth Industrial Revolution (cheap abundant renewable energy) will be based on Tesla's power science direction and Tesla/Kawaga/Derksen quantum heritage: The Tesla/Kawaga/Derksen based fundamentals combined with the use of a mix of new advanced technology of many sciences: high voltages, high and low frequencies, lasers, magnetism, resonance and catalysts that change processes totally. Based on Kawaga his quantum theory: there are no particles, every particle is just an energy configuration and interacts with other 'particles' to new energy configurations. Based on Tesla's vision: after his major Niagara Falls hydro power project at 40% of his career he was completely obsessed for finding ways to 'tap' any kind of renewable energy configuration, with deep respect for only using not changing or drowning nature (Harnessing the Wheelwork of Nature). A model based on their fundamentals and directions has the best odds, realizing many new basic sciences and maybe devices to 'tap' yet not used quantum energy sources, besides maximization of the use of the current available traditional renewal energy sources. We're running out of gas for the Second (power) and Third (digital) Industrial Revolution. In the main time energy will be scare and expensive and we need to adjust/transite our economies and societies by/to this fact. We need to survive PeakOil without turbulence. The heritage of the above mentioned direction outlines can help us in realizing a new future where we use less expensive hydrocarbons and by that will have/maintain maximal prosperity In times of expensive energy. We need a severe Energy Revolution (not some marginal change) yesterday and meanwhile we must adapt our economies/societies to very expensive energy by advanced localization, let's rest all the space, fission and military (toys for boys) mumbo-jumbo and focus us with some help here and there of the above direction outliners. There is certainly a need for a new Geneva Protocol that abolish besides chemical and biological weapons, also space activities (is going of our protection layer, and is a theoretical huge bacteriological risk, besides: we have 'some severe work to do at home': put this budgets in supporting independent energy research), ionosphere targeted activities (is fooling with our global protection layer, without the ionosphere we all be dead within one week or shorter by radiation), gen modification (making copiers without being able to control the number and mutations of the copies) and nuclear fission (this line is last line 50% of the readers will read, but still it's just a wrong direction and temperately shortcut, while there are many better and longer lasting options are available), will the world in the 21st century not face the same disasters as it face with chemical weapons in the 20th century. These all are not reactionary / anti technology stands, but just some pro sustainable/prosperity technology direction seeking stands. Technology is neutral and could change everything. For the better of for the worse. We must seek a sustainable prosperous future, build on unlimited resources and abolish every threat that could have huge impact. People who talk down the huge risks attached to bad technological directions, always have a financial interest in these technologies. Money is a set of glasses, that's change the views of

reality sometimes. Technology is beautiful, it's a tribute to the intelligence of mankind. Let's use it. Let's use it the right way: it will help us severe. Why bother about space as the needed solutions are reachable within the nucleus (just reverse space technology: quite some real relativity)? Where is energy around us and how we can tap it? En yes: how could we more output than input, not -useless- overlooking the First Law of Thermodynamics (Conservation of Energy), but by using/exploring it in a technological environment. How we make hydrogen out of water with an almost 0% current lost by use of the right set of water based and electrode based catalysts where we feed only the water and takes temperature of an separate water stream that we feed though glass pipes though the process chamber, etc. How we get cold fusion by high voltages, lasers in virtual by magnetism 'build' open air sites. Etc, etc, etc. Any scientist and any company can make name and/or a fortune in good (as in: to sustainable global prosperity contributing) technology. Let's not use our human brilliance the wrong way: it will hurt us severely and we really have enough headwind already to deal with. But due maybe to localization as only available way to maintain prosperity, the above mentioned huge threats to mankind are in the near future not fundable anymore (as the economies and thereby all giant structures will decline). Einstein (not quite a science hater) has said it better in one line: "Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius (and a lot of courage) to move in the opposite direction."

Author: Gijs B. Graafland is a corporate/governmental strategist with a steady extending global reach/impact and the founder of Planck Foundation. Many CEOs, CFOs, bankers, investors, politicians, governmental organizations, development organizations, pension funds and investment funds take his view on current statuses and future perspectives in serious account. His capability of consuming continuous loads of information while keeping both all this information and the whole picture open are unique. By this he's able in analyzing very quick/natural existing and possible connections and relative contexts between several different global developments. Not only analyzing current situation and future developments, but also projecting possibilities, policies and scenarios. The draft of his Global Resources Analysis has been released in April 2008 and is already read 1.500.000 times by decision makers globally in only 3 months time. Even several PMs and central bankers around the world has consumed his Global Resources Analysis | Situation 2008 and get in contact with him and change policies after that. The comprehensive characteristic of his analyses and the policies/scenarios he developed based on it, combined with the type of his audience, certainly make him a substantial influencing factor/actor on future global developments. Graafland is in a pure intellectual conflict with the US Department of Homeland Security, as he (although he like's the US, the Americans and the roots of the USA very much) on university lectures also emphasized that the USA (certainly from energy security point of view) doesn't handle it's power wisely (acting imperialistic) using freedom as cover, while tearing down the free, open society at their homeland by the Department of Homeland Security and the (very unpatriotic and anticonstitutional) Patriot Act I and II. He warns for (both the short and long run) severe damage this brings for the USA, certainly from their very important energy security politics point of view. Because when energy prices reach their maximum market level and the price mechanism doesn't work any more in as rationing tool, the granting tool will build on top of it: selling for maximal prices only to friends. The US as bully 'friend' (a 'friend' that point a gun at you will be left by the first change for that) than will have not many real friends and gets abrupt in deep trouble after already being economic drained by high prices. South Korea and China act much more cleaver: sending a lot of professors/engineers/teachers instead of bomb/soldiers and building real mutual beneficiary relations with energy surplus nations. Real friends have the nerve to tell you the truth. DHS doesn't understand that. Furthermore: the folks who designed and

implemented Homeland Security just didn't do their homework very good, being rather more enforced (freedom restrictive) followers than independent (organic security developing) thinkers. Emergencies (9/11) brings always bad legislation (Patriot Act I and II) and bad institutions (DHS: Department of Homeland Security). Innovation certainly needs free thinking and communication environment as life needs oxygen. Governments are not well known as inventors, nor as real economic values (equals technology and production) creating motors, although most governments think that they are very good at both (and by that shows that they doesn't understand the concept of government at all). Graafland has made his money with technological investments (although he isn't quiet a cold technocrat) in IT, the Internet, process automation, energy and water and live a very much out of the spotlights type of life. He reads a lot on actual and historical development from various sources (not only the New York Times, but also the London Times, the St. Petersburg Times, the Tehran Times and the Beijing Times, etc). He is no green anti-prosperity hippie (although catch him in a suite is something not very often can be seen), contrary he argues time after time that each city should have it's own internet exchange, as the Internet current topology can be whipped out by just placing 100 semtex containing servers in the current concentrated internet hubs of the world, blowing us back into the dark ages with one php/mysql driven webpage screen button. Semtex dogs that makes quarter of a year frequent rounds in the hub datacenters is certainly no luxury, yet not practiced yet. Graafland has almost no public appearance, don't do news shows, webcasts, seminars, congresses and round tables, does only private 1 to 1 and board sessions. He is mainly travelling and analyzing economies and cultures. Graafland prefers to think and speak in his mother language and therefore has always a translator to the local language with him, so he gets in real contact with the local people of a nation and adopt as many local economic and technological information he can. He abstain all media contacts persistent as 'broadcasting is not inventing, just copying', 'publicity erodes quality of research, analysis and contacts' and 'journalists must learn read and research developments again as they used to do and not just searching/running for a quick quote'. If companies. organizations or governments wants some days of pointed to goals assistance in realizing change of policies, teams mostly lead by Paul Daemen (known as 'the bulldozer', 'don't talk me around' and 'realizing real changes is not exactly high tea') will been flown-in instead of Graafland. For making both the Global Resources Analysis and the Global Future Analysis as realistic as they must be, Graafland has lived one full year as we all will live several years from now: less car rides, less plain flights, more train rides, stimulating high prices of the future by artificial cutting his monthly spending budgets severely. Therefore both the analyses are not theoretic academic specialistic, but just comprehensive realistic focused. Graafland is currently developing the twelve needed response models to the developments described in his two analyses: the Action Model, the Communication Model, the Localization Model, the Production Model, the Mobility Model, the Transport Model, the Currency Model, the Privacy Model, the Peace Model, the Political Model, the Knowledge Model and the Finance Model: models for pipelining and facilitating the coming change. Models that take care that no energy and time will be wasted in searching for directions. By the use of these models this energy can even be multiplied instantly. Facilitating and multiplying changing of policies was the vision behind the development of the Models. There is globally so much RWA (Ready, Willing and Able) changing power available by companies, governments, organizations, municipals and people. These huge (and diversified: therefore very strong) powers just need models to multiplex these powers. Currently these powers burns dry by the lack of valid/effective models. These powers could be multiplexed when they are find the right models to react on these challenges. On foreign policy Graafland his plea is to transform the military to real peace corps (US Aid II besides the current US Aid I) that support a new US foreign policy concentrated on building sustainable relations with energy surplus nations, by sending the guns to home and supporting realizing national/regional/local development in those nations. Than the

US will gets it imago back it has lost by being lately the selfish bullish guy in the global class and really/sustainable secures energy supply when the granting based distribution system comes on top of the price based distribution system as energy prices will reach their economic maximum (where that will be nobody knows yet, but it probably will be around $ 500, oil more expensive that price barrier will be left unexplored). Graafland has started Planck Foundation in 1999 as result of his research in the area of global development dated back to the early '80ties. First as an incubator for funding/supporting global targeting state of the art and/or solutions barriers further pushing technological, societal and economic forerunning corporate concept mainly high technological driven. During these almost 10 years of existence research, development and communication of the R&D results became more and more the most important activity of the Planck Foundation. The current agenda of Planck Foundation is creating global awareness on (and practical answers to) the effects on economies/societies of the Credit Crisis, Energy Crisis and the Water Crisis.

Facts

More people
Increased prosperity
Exponential growth
Finite resources
Limited resources
Unlimited resources
Artificial resources

More people: Never in world's history the growth in absolute number of people has been on current levels. The UN thinks based on analysis of current population growth processes that the earth population will stabilize around 10 billion in the year 2050. Stabilization because increasing property everywhere has proven to lead (besides to slower dead rates) to less births (smaller families): which will stabilise the world population at a certain level. Of course prediction of such an on many futures factors based figure is very difficult. The historical earth population figures are: 1bn-1804, 2bn-1927, 3bn-1961, 4bn-1974, 5bn-1987 and 6bn-1999. The current world population is approximately 6.7 billion, and the 7 billion number will be reached in 2011. So there a new 1 billion people every average 12 year since 1974. A steady increase of more than 210.000 a day (according to the CIA World Fact Book). An impressive figure that certainly has and will have effects on the global markets. People are good 'stuff', a contribution to the global social, economic and environmental balance, each live is desired and valuable: it's not up to people to decide on other peoples right to live. Yes, population growth is a challenge, but talking about over-population is premature. Everybody who has travelled a lot knows that 98% of the land of the earth is really under-crowded instead of overcrowded. Overpopulation doomsday preachers are mostly city based people with no kid experience (never been touched by the miracle of giving live) and reactionary visions on technology and society, wanting to influence other people's life too easily for the sake of maintaining their small narrowed overcrowded polluted world. The rural area's on earth still have declining population which automatically drains the social and economic quality of life in these rural area's. Everything is relative. Remote office technologies will revitalize rural populations: cheap houses, clean air and social structures will become due internet technology parallel non conflicting, each other enforcing powers. Yes, there are huge issues to address. Yes, people lives today too concentrated (mainly in cities) in too small area's. Yes, there is no energy for 10 bn as the 2 bn western people now use (but also for that 2 bn, cheap and abundant energy is running out, so everybody faces the same challenges): PeakOil/PeakX has no more to do with population growth that is has occurred some years earlier, really not anything more than that. Yes, there is no iron for 10 bn people (but we will use other new construction material as iron becomes too expensive: minerals/elements are maybe not the problem: we can 'work around' this huge problem as cost of minerals/elements will rise). Example: The very high Petronas Twin towers in Malaysia doesn't have a steel core, but a core of enforced concrete (scary thought for such a high buildings). Yes, there is no soil to give 10 bn people each 100 kg of wheat intensive produced meat a year (but there are less wheat intensive production methods and we need to find meat replacements in our eat cultures that taste as good or even better as meat prices will rise back to the relative high historical levels that they where). Yes, the concept of cities losing with each energy and food price increase more of it attraction. Cities are in nature energy and food deficit. Food deficiency can be (low energy demand / low space demand) solved (see www.growindus.com), but cities still will be energy deficit unless fusion or other 'tapping or harvesting' technology will make

energy again cheap and abundant available, till that period the energy market situation is not positive for the city concept. The prices of real estate in cities will move to rural levels with each energy and food price rise time after time a little further. Less crowded, greener cities and more populated, more tech rural area's will be the result. And yes Thomas Robert Malthus his "An Essay on the Principle of Population" (six enhanced versions between 1798 en 1826) is interesting, but it's written before birth control inventions, and in times without the Internet (where therefore cities and rural area's had total different and separated functions), a barrier that's fading more and more away by the function increase of the Internet. Today again 211.090 people more live on planet earth. Like economies needs young generations, the earth needs young populated nations. Old people are finishing things, young people are building things. We need smart governments to steer this. Not in totalitarianism dictating, but intelligent solutions stimulating.

Increased prosperity: Never in world's history enter a huge number of more than 3 billion new consumers with accelerating purchase power slow but steady the wealthy lifestyle. An enormous crowd of more than 3 billion people enters almost at once together the 'consumer class' (yearly earning of above $ 7000), with the attached cooler, freezer, microwave, airco, computer, TV and car: just the whole nine yards of modern life. Any historical data model is not suitable as the reality outstrips their forecasts results time after time. All projections of the effects of this has been proven too conservative. The number of people that enters wealth the same time is so huge (half the world population) that no research model the impact of this could foreseen. This challenge global energy, global resources and global food supply. Some these cool figures illustrating hot examples? Every 10 days (!) an other gigantic coal to power plant opens in China. A plant with a size that uses a train load of coal a day for the rest of its existence. Global energy (oil, coal, gas and uranium) markets has become very tight and demand is seriously outstripping supply. In China each quarter of the year 2.000.000 million new cars and 600.000 new freight trucks hit the road (and thereby also the gas stations for cars every week and for trucks even every day). Iron ore miners offered mid June 1008 China's steel mills iron ore for the 2008/2009 season for 200% of the price of 2007/2008 season. The Chinese steel mills signed very quick for 196% if the delivery quota would be doubled. Leaving less quick Asian mills with even higher prices and no supply. In China still the common greeting is "do you have eaten today?" illustrating the struggle for life of just some decades ago. China had for centuries a 1 kg meat per inhabitant per year figure. This has in a very short time grown to 50 kg per inhabitant per year. An for an economic data model programmer an unbelievable increase of 50 times. 1 kg Meat = 1000 litre water, 5 kg Wheat = 5000 litre Water (just for the food, the animal water consumption and the water needed for the animal and its waste and the processing/trading of meat not included). Professor John Anthony Allen has made the 'virtual' water use of consumed products more scientifically funded and thereby it gains enormous weight in economic calculations since than. In 1997 the global per capita wheat consumption was 101 kg wheat a year, with the whole world eating 100 kg meat a year, the global wheat production must become at least 550 (5*100 for meat production + 50 for other direct/indirect ways of consumption) kg wheat per capita, a 500% rise (in absolute numbers: old demand value * 5 * new population number = new demand value). Where all this wheat must grow and what water it must irrigate, nobody knows. The USA meat figure is 120 kg per person per year, so the Chinese are even modest compare to Americans. We need the surface of 6 more worlds just to grow wheat for meat if we all will go consuming 100 kg meat a year based on the wheat based intensive meat production method. We need the water of 60 more worlds to irrigate this wheat during growth. More meat only will come from room for 1 kg meat = 0 kg wheat extensive meat production in South America and Africa where is used soil abundant and

there is plenty of used soil, but than still the water supply for that is a not to be solved problem for that kind of meat production. And India? India is (due to historical/cultural reasons?) the quiet child in the class, but it outstrips China both in economic growth and resources demand.

Exponential growth: In 2007/2008 the world suddenly realized (due to market prices, not by analysis) that they celebrating two cumulative developments: 1) the arrival of enormous numbers of new hard working young adults on planet earth (by population growth) and 2) the arrival of 3 billion new people to the wealthy lifestyle (by purchase power growth), and all of them (3 billion) arrive at the same time together. These two developments were connected and happens thereby simultaneously. By these two developments it's getting real crowdedly in the global market place, demand outstrips supply more an more, prices going up and up. Both factors (young adults population growth and purchase power growth) results in an exponential growth of global consumption levels. Exponential growth that was not foreseen and therefore not programmed in any economic data model of any economic or geopolitical data model. More people and changing habitats are joint forces (1+1=4), creating a 'perfect economic market storm'. Ratio's are the fundamentals under exponential growth: producing cars demands some iron and energy, but driving a cars each day demands each single day of it's existence new energy, drives exponential growth. Knowledge of the car to fuel ratio is needed, if the 'car population' increases at accelerating speed. Producing meat takes wheat, production of wheat takes soil, fertilizer and water. Changing daily food behaviour changes of billions drives exponential growth. Than is useful to know the meat to wheat ratio of each production method and the several ratio's connected to wheat. Economists had till recent no historical experience with exponential growth at all: they need the knowledge of biologists to understand it. In biology exponential growth is common part of science. Exponential growth described simple: If doubling time of something is 1 year, and Y1=1.000, numbers will look like: Y1=1,000, Y2=2,000, Y3=4,000, Y4=8,000, Y5=16,000, Y6=32,000, Y7=64,000, Y8=128,000, Y9=256,000, Y10=512,000, Y11=1,-024,000 (a thousand times more volume in only 11 years), Y12=2,048,000, Y13=4,096,000, Y14=8,192,000, Y15=16,384,000, Y17=32,768,000, Y18=65,536,000, Y19=131,072,000, Y20=262,144,000, Y21=524,288,000, Y22=1,048,576,000 (a million times more volume in only 22 years), etc. The year doubling is just an easy to understand exponential growth illustrating example. Exponential growth of such a mass of people in the same time was never seen in economy till now. This is the reason economists all just failed in their projections concerning the demand of China. Exponential growth gives 'hockey stick" diagrams and hockey sticking in economics has been always similar to embedded calculation faults. The new challenge for economists is to find the important exponential growth driving ratio's of the future: plane to fuel, car to fuel, meat to wheat, wheat to water, reefer distance to energy, cool distance to energy, dry distance to energy, road distance to energy, rail distance to energy, ship distance to energy, air distance to energy. Till these are calculated the output of all global resources demand forecast models are worthless, or even negative contributing. The IEA (International Energy Agency) is one of the leading economic research institutes that has suffered till now from this missing exponential growth factor in their calculations, resulting in by market reality wrong proven projections/forecasts time after time. They need to find the right actual calculation ratio's and create new data models. Till than only the situation of the past can be analysed scientifically (by analysing market volumes and market prices in relation to GDP's and other economic indicators placed in time frames) and any projection of the future should be marked as 'not with exponential ratio's calculated yet'. Our finance system is based on exponential growth, otherwise it runs 'dry' as money for interest payments not is created by the process of money creation by loans, but interests must be paid by further loans, etc, etc, etc. Exponential growth in a

world with finite resources is not a sustainable concepts. Everybody who understands these issues certainly will understand.

Finite resources: We have build a mega beautiful global economy (splendid) on finite resources (oil, gas, coal, iron, copper and uranium) (stupid). Backwards analysed certainly not the most wise thing to do (certainly as Tesla and others more than 100 years ago has promoted focus on renewable sources policies), but it has brought as where we are and we can be proud on very much that's achieved in the last 150 years. The importance of finite resources are no problem so long as they help us in the building phase, but that finite resources (like the word says) are finite is obvious for everyone. Finite resources must be replaced by unlimited resources and this will be done. Not because we want to, not for ideological reasons, but just because the market prices of finites will rise, rise and rise. This price rises makes the search for economic alternatives attractive, gives it a premium. Ideology is a weak mover with almost no real action power. Ideology is certainly in the Climate Change issue more than 99% talk and less than 1% action. Economic factors are the real change drivers. Increase of energy prices directly results in changes. This is not an opinion, but an observation. A price rise of 10% of crude oil had more communication and changing effects than even the heavily intensive widely supported climate change discussion ever had. When companies, households, persons and governments recognise that a) finite means finite, b) demand outstrips supply and last but certainly not least c) prices never will go down to the low levels of the past, they all change directions. PeakX discussions on finites has less value: The future is not a main agenda issue in our current operations. Actual price rises certainly are. Price rises are the rudder of each ship on the economic sea. The bad news is that we're blessed with leaders that don't understand the word finite. Leaders that signals that finite means unlimited and that price rises are caused by bad investors or bad producers. Of course producers of finites don't invest full in new capacity: it are finite resources, why hurry. In the ground they gets more value by the day and when explored and sold the future price rise is aborted and the value decline of the dollar erode the value instead. Any one with resources will and should do the same. This attitude is not bad for the world: it stretches the transition period with maybe several years. That's something the world certainly needs, because our processes, models and installbases. For example: almost all our transportation vehicles (cars, trucks, trains and planes) are based on (or better said) powered/fuelled by cheap abandon oil. Changing processes takes a long time, awareness, denial, acceptance, anger and than changing action. Governments and economists must asks psychologists to assist them in understanding human standard reaction patrons in economic behaviour and/or response on great changes. Is there any hope for a decade during extension of the carbon production plateau by new easy to explore new discoveries? Maybe a mixture of the biotic and abiotic origin theory could lead to the finding of several new giants like Ghawar. Geo (not bio) originated carbon plus water as basis material for C en H (much more valid theory than the huge concentrated basins full with bio material dumps) (deep water enough in tectonic active zones). Bacteria's as slow motion (hundreds of thousands of years) producers (proven to be possible). Tectonic pressure energy, internal geo pressure energy and earth warmth as the real energy sources (following first law of thermodynamics). There's not much science available on the behaviour of elements (and C element formation) under huge (tectonic) pressure. Useless theory, only can be used as chance to find new (yet undiscovered) potential hydrocarbon giants, if they are out there, the chance that they are nearby tectonic pressure is statistical huge, buying us some extra transition time (but even that is not true: new discoveries now, will not help us the next 10 years -by the exploration time- and by that time current fields will be drowned up: it will only soften the impact and give less geopolitical stress). Movement to the surface (tarsands and easy to find oil) by tectonic activity. Why exploration effects of

this new theory? In this model taking the tectonic map of the world and find 'the new Middle East look-a-likes' nearby tectonic crossroads. The surrounding of Venezuela is such an example, this area is just like the Middle East located on a tectonic crossroad. But even new major fields doesn't solve the problem. It will only buy us some extra time (and certainly not for free). The current demand for energy is more than the carbon of the world has to offer: 365 days times 85 million barrels a day = 31.025 million barrels a year = 31 billion barrels a year. The elephant Ghawar has produced from 1951 till 2005 'only' 60 billion barrels: just enough to feed the world only two years on current consumption level (85 mbd * 365 * 2 = 62050 mbd = 62 bbd). A new Ghawar (not many believe in the possibility that such a giant will be discovered, but it is always a theoretical possibility, the knowledge of today never may seen as the ultimate knowledge of tomorrow) only will give the world just approximately 4 years of extra transition time. Time is running out very quick, maybe even before we have noticed the real need to transite. Speaking with the words of James Mulva the CEO of Conoco Phillips (if someone knows the global oil sector of economy: he -as leader one of the big five- is): "Where must all that oil come from?". And that's just oil, de demand for natural gas and coal is increasing even more rapidly as power plants divert away from oil. Carbons drive us and our economies and carbons are finite. Time to leave them before they leave us, because it will be otherwise a very expensive divorce. It's time to confront the 'nothing is the matter' guys with hard data, because they worsen the problem severely by reducing the short transition time we already have (by lack of vision of us all) with their misty (non data based) 'believes' in endless carbon resources. It's a said thing that political leaders think they know the oil market better than pro's like the CEOs of the major oil companies. Historical data don't tell the future if the current developments (slowing supply, increasing demand, much more higher prices) are completely different and are not taken into the data models. We don't need photo's of the past. We need 'photo's' of the future. Let's kill historical (as in: based on old data of a not changed world) denial that will deepen our troubles and work ourselves out this expensive carbon energy problem to a future based on actual data and not based on wannabee/desired data. Carbon energy more and more is been seen as an addiction: just the wagon trail of decades of historical economics. Breaking with carbon is even difficult to realize as breaking with an alcohol or drug addiction. But our carbon addition has become the biggest transfer of wealth ever. In our current perceptions economies without cheap and abundant carbon are even dead. This will change. We will reinvent a new type of low energy demanding prosperity. Energy demand and prosperity where parallel and will become reversed opposite. Having an economic system that is focused and finance system is based on exponential growth, is contrary to the fact that much resources are limited/finite.

Limited resources: Besides the pressure on the global finite resources, there's also a pressure on the wide available, but yet limited pure local resources, which like clean water and clean air and abundant food. Global water or air pollutions are only possible by major volcanoes causes (or by atomic war or technical causes), otherwise local air, local water and local water resources can be address mostly or even completely local. Of course rain water must be used maximally. Of course water pollution by industrial chemical and sewerage bacterial originated pollutions must be reduced maximally. In China coal is a huge air pollution issue (like it was in Europe and the USA until the '60ties), there is a lot to gain concerning local environment. Everywhere in the world. Clean air is also economic: less diseases gives a better economy by lower health costs and higher overall productivity. The same applies to water. Clean water is equal to less health care costs. And clean air and clean water improves the quality of life severely. Wellbeing has no actual price tag on it, can't be purchased, yet is the highest economic achievement. Soil is also a limited resource. There's soil enough on the planet for

everybody. Unless we all start to eat 100 kg bio industry instead of grass cattle based meat a year. Than we need the soil of 3 more earths to grow cereals for the animals on.

Unlimited resources: There are resources that oversize human needs structural now and for always: Earth thermal energy, and all different types of solar energy (and all it's diversions like light, warmth, wind, wave, thermal etc) and fusion energy (or any type of new tapping/harvesting natures sources). Both earth and solar are technological and economic already to use, yet widely unused, huge opportunities lay very much and full economic open. The PicksensPlan.com of T. Boone Pickens drafts a plan to take the 20% natural gas out of power generation and replace it with wind. Making this 22% natural gas available for transportation use. Reducing the addiction to foreign energy for transportation use with 38% and stops the export of US wealth with more than $ 700 billion (each year!!!) by $ 100 per barrel oil prices and $ 1.05 trillion (a year!!) by the current $ 150 per barrel oil price, which will be doubled by equal price rise of oil on the world market. This stops a huge wealth drain of double digit figures in the US economy / GDP which is in total approximately $ 13 trillion a year. Ones again is proven that ideology can't move anything and economy can move mountains. No bad word for ideology, but it's results are mainly just talk, window dressing and green washing. Al Gore has had with 'The Inconvenient Truth" a huge impact on the mind and perception of people, companies and governments. But no one had flown one mile less because of it. We just start flying less when the ticket prices where going become too expensive for our taste due the oil price rise. The power of economics is beyond expectation. Major changes can be realized without one ounce of governmental support if they are driving by economic factors. When the economic factors are green for green and red for carbon, carbon will looses it's grip on economies and societies. The major advantages of fusion energy are not available yet. Fusion energy is far, far, very far away from technological realizable. The method research today is concentrated on is maybe not the right method. Planck Foundation thinks is a need of a new high tech fusion project approach in the world market. Total different as all fusion projects that there are out there. Not trying to find materials to isolate the fusion, but a (also very price effective) 'open' (as in no) 'building' made out of / by magnetism. Controlling the fusion by magnetism and initiating it with crossing lasers. By the fact that the building than is 'virtual' (based on magnetism), it can be very easy installed everywhere there are population or industry concentrations. The result is enormous volumes of hot water > steam > electricity. When this fusion technology becomes available the (by James Howard Kunstler by one of his books so called) 'long emergency' (marking the time frame that energy and water will be very expensive) will come to an end, because power and water (by power intensive desalination than again possible on large scale everywhere) becomes cheap again and this will give huge prosperity anywhere on the world. The old cities than maybe will be revitalized by this new available cheap energy, cheap water and cheap food (the three basic fundaments all cities on the world are build on). Tesla his controlled unleashing the positive ion charges of the stratosphere to the earth energy plan is better on the shelf than in function: it's like the current nuclear fission technology full of dangers will global impact (it could be a Pandora's box by it chances of damaging the ionosphere and having severe weather changes dangers). Science without responsibility is even powerful as science with responsibility. The more inventive the science, the more good morality the scientist needs in searching for development directions. Science is neutral, the output of it's directions not. The human mind/intellect can also been seen as an unlimited resource.

Artificial resources: We as humans are incredible inventive, the collective human brain is the source of loads and loads of artificial resources. The ability to find solutions for many

problems is a huge asset. According to the first law of thermodynamics we will never be able to create energy, as we know energy can not be created or lost, only transformed from the one form into an other form. The amounts of energy during the carbon period we will never be able to explore ever again (unless nuclear fusion will become commercial available). The fact that credit, energy, water and food will become expensive is inevitable. Economists who tell otherwise doesn't understand current and future developments very well. This we can't change, we must get used to it. We have to transite from high energy economies/societies to low energy economies/societies. The main distance between those two can be described in one combo word: distance/transport: low energy economies/societies have low distances between physical transportation things (people, products and services). If we're able to realize designed (not caused by just collapse) low energy economies/societies, we will maintain (steady growth in) prosperity levels and wellbeing levels. This is where the great thinkers of PeakOil like Heinberg, Kunstler and Klare go wrong: they don't believe in or systematically underestimate the power of widely spread human intellect concerning this. When credit, energy, water and food gets expensive, we can make many artificial 'workarounds" that increase the supply of and lower the demand for credit, energy, water and food and thereby support our economies/societies. We must stop our fixation on 'wanting to maintain the unsustainable' and switch to 'creating sustainable prosperity'. We as mankind are very good at finding new ways, we have always been good in 'workarounds' and 'artificial resources'. (Note: here is not written: in continuing to do the same as we used to do now. The times of cheap energy en cheap credit are over, continuation of current behaviour is no valid option.) What are artificial resources? Anything (visible or invisible) that mankind has made. The source of all artificial resources is the human brain and it's shared ability of pollination with each other's information, knowledge, experience and inventions. Every artificial resource is originated/invented/formed/improved by the collective capacity of the human brain. Examples of artificial resources? Money, credit, freedom, government, media, models, programs, templates, telecom, the TCP/IP (Internet) data protocol and infrastructure, GSM, UMTS/CDMA, MSN, VOIP, videocalling, Web 2.0 (people feeding publishing engines, bypassing 'professional' media rapidly in media consumption time: YouTube, FaceBook are examples of the Web 2.0 model), search engines, open source projects, legislation (insuring long term ownership), justice, databanks, geopolitics, international cooperation, sky traffic control and sky ways, IP numbers, domain names, etc, etc. And there is still many whole new worlds to discover in the field of artificial resources. We know what we know and we don't know what we don't know. Especially in the main basic area's with new severe shortages (capital, energy, water, food) the artificial resources will help us to cut demand by doing things differently, by replacing old ways of achieving things by new ways of achieving similar benefits/targets. Huge advantages will be achieved in telecom: videocalling, video meetings, mobile internet and remote office technologies will cut huge in the personal miles levels with out lowering prosperity levels (even improving prosperity by cost/time reduction). Huge advantages are possible in office technology by implementation of the XML model (a cut to the bone data focused model instead of application captured model). Yes, economies/societies will be severely different than back in the cheap energy times. But when this is accepted, it's all downhill (much more easy realizable) from there. Acceptance that's needed for it is more uphill (the most difficult part of the transition process). The transition from a high energy economy/society to a low energy economy/society will be difficult: a huge challenge. Unlike former transitions (coal to oil, coal to gas) there is a time/price frame. The price frame helps (makes transition economic right to do), the time frame doesn't help: each year the transition later starts the road will be more descent and more rockier due increased prices, economies in problems, credit shortages, supplier capacities, etc, etc. The artificial resources are a huge reservoir of solutions. They will not give the answer on the Energy Crisis (until fusion or other technology comes online), but they will help is adjusting to

lower energy supply and high energy prices. For the US there is one huge danger as side kick of the current governmental mainstream (as defined in the Patriot Act I and II): freedom of speech/thinking/communication is under siege, and the great inventors/thinkers are free spirits: the like free environments. It's a sad thing that the US say they exporting freedom, but restraining it in their homeland by the Department of Homeland Security (making exporting freedom more sound like exporting free markets -never the less important- only). If there is one nation who can't afford to loose the human intellect it's the US. Bad situations make bad legislation, always been so, this time it's not different. The internal freedom of the US is at stake: criticising the government can be seen as terrorism and put someone out of the legal system without any rights. Intellectuals are know for criticizing governments: it's their hobby, their other passion. By the recent freedom of speech undermining legislation the US is losing it's attraction to the global intellectual world, risking the loose of no longer being the intellectual crossroad of the world. The Asian Lions and Russia are very much interested in becoming the new innovative centres of the world, and the research cost price facet is much in their favour. The current intellectual freedom and creativity undermining (yes, that's the right description of the Patriot Act I and II) legislation and organizations (DHS) are even a threat for a possible brain drain (active emigration of intellectuals to other nations) for the US. The fact that the US has lost its position on the Internet traffic market is a sign of this. 10 years ago, 70% of the Internet traffic was routed through US hubs, these days the market share of the US in Internet traffic is only yet 25%. Due the Patriot Act federal officials can access all information in US based servers. Companies that commercial compete with US companies aren't charmed by such overpowered authority. A sign of drifting away from the centre of a major development and also an indirect effect of KGB/Stasi like legislation in the US. Freedom attracts activities, freedom is economy. Freedom limitation is realizing just that the 'enemy' wants to realize just by our selves. A freedom protection legislation that's more hostile to our freedom than any enemy ever could realize. The freedom limited legislation was already designed, and just put in place one month (historical record) after 9/11. Governments that restricts freedom kills innovation and thereby economies. Anno 2008 Tesla (according to the Encyclopaedia Britannica good for a place in the top 10 of most genius people in history) should be held in Guantanamo Bay as potential terrorist instead of being the inventor of many power devices as he lived today. By his free mind and passion for technology, strange behaviour and not by anyone to be followed mind/brains and preferring technology above business cycles plus holding many patents he had many corporate enemies. Still he is the father/designer of our electrical power infrastructure by given us the AC power transmission. Even today we all use at least 50 times a day one of his inventions: from the induction electrical motor, to hydro power turbines, poly-phase AC that made electricity portable, the radar, remote control, robotics, neon light and radio (reverse granted to him in 1943 by the Supreme Court). Obsessed by also being able to transport energy wireless. He was also the intellectual father of 100 years later actual warfare designs of the SDI (Strategic Defence Initiative), HAARP (High-frequency Active Aural Research Program, but he rejected the stratospheric technology as carrying too much uncontrolled impact for these protection layer of the world), ionic propulsion and energy weapon programs. A single man with 700 mainly important patents on his name. Just Google or YouTube the guy: he's really under exposed for his major impact on the 20th century. Also has contributing a lot to the basic physics science. Tesla was a man of Da Vinci and Einstein type of size. Freedom of thinking and speech creates/pollinates inventions. Capital has already left the US, energy also, water and intellect are hesitating. With capital away, energy away, water away, intellect away, major just these days needed innovation and technology will become difficult. Artificial resources grows on freedom of thinking and speech. Ask Germany (before WW II) for the science effects of guaranteed freedom and ask Germany (Nazis) and the USSR (one party based communism) for the science effects of restricted freedom. The world needs brilliant

minds, they move always to secured freedom locations. The US before WW II and the cities of Holland in the Golden Ages are the best historical examples of this. Guaranteed freedom, that's what governments should make to contribute to solutions. Unfortunately they just act opposite, they don't get this. Yes there was a white spot on the political map after the collapse of communism. Communitarianism (a strong government that pushes to individual social behaviour) was has filled this spot. Unfortunately it has taken the bad things out of both communism and capitalism and blend it to a freedom poisoning model. Etzioni as ideological foreman of this movement and influencer of many western statesmen don't see the freedom poison of there own (designed for social societies) model. Social cohesion can not be paid with lost of freedom and privacy. Freedom and privacy are the pillars of the Bill of Rights (Etzioni's reply: "the rights are too much emphasized, what about responsibilities?"). Responsibilities and rights are not contrary but complementary issues, Etzioni doesn't get this, sees them as contrary: plays them off against each other. Of course a state can't nurse her inhabitants (Etzioni and his responsibility legacy), nor can a state control her inhabitants as Etzioni says that's the best for everyone (security demands limited freedom/privacy). Etzioni has brought 'intellectual' 'legislation/acceptance' of Big Brother practices that goes much, much more further than the Stasi in the DDR ever has gone. States are not much about freedom, they never are and never will be, states likes control, people like freedom. Freedom creation by the state the Etzioni way is exchanging intellectual freedom for fake state controlled security. Not a good inventive environment. Artificial resources needs / only grows in intellectual freedom. We need artificial resources more than every. It's up to politicians to ensure freedom of thinking, speech and communication and direct actively end all anti-patriotic legislation like Patriot Act I and II and all its institutions like the DHS and FEMA. Otherwise, we have shoot ourselves severely in the leg concerning our future. The feature movie Rendition is about the dangers of such a behaviour of states. The freedom Bin Laden was trying to attack, we have killed it for him and damaged by this our economic perspectives/vitality as well. Etzioni has a great mind, but he has gone bad / is poisoned by the 9/11 events and the "security first" concept caused by that. Etzioni's legacy must be stored on the bookshelf right next to Marx, as publications that highlighted vital issues and fight for improvement, but had a wrong focus/direction. For example: Raiffeisen has got even less than 1% of the exposure of Marx, but has a huge (beyond imagination) complete positive impact on Europe as legacy. Talking about artificial resources: Raiffeisen his legacy is certainly a huge artificial resources in times of shortened distances due to energy prices (read: advanced localization): his local finance models became literally the foundation of food production in Europe in those times of scarcity of credit, and thereby has made the industrial revolution and city growth possible. Smart politicians tries to implement his earlier very interesting (active society) legacy, but skips his security first ideas. As a sociologist he totally misjudges the effects of his theories on the real motor of economies and governments: an innovative economy is something that needs freedom, not state control. An active society comes when governments step back a little and/or governments stimulates micro level social structures, and maybe a government only can step back a little and are national governments not good in creating nor supporting micro level social structures. We need artificial resources, not a reinvention of the DDR or the USSR. They both weren't well known very well for their economic performance. Freedom of mind equals maximal prosperity growth, regardless the situation. Some artificial resources are unlimited, yet has limits. Credit based on money creation by loans (our current financial system) is an artificial resources that is unlimited when used wisely and can support economic growth and prosperity enormously. But overstretched used, it crosses its dynamic limits, something that could lead to collapse of this important artificial resource. Artificial resources needs the right (and sometimes balanced) environment to contribute maximally to development and not have negative side effects.

Effects

Higher prices
Wealth changes
Food changes
Power shifts
Turbulence
Collapse

Higher prices: As the cost of credit, energy and water rises severely all products and services will become much more expensive (which powers inflation, which powers interest rates, which powers credit costs). The energy cost facet of each product/service when it reaches the enduser is totally unknown (due the decades of cheap energy). The energy cost facet of each product/service will become very clear to us in the next 2 years. Increasing energy costs reach the market with a certain delay due to purchase contracts in the whole product chain. In some sectors this chain is short. Transport and chemicals are perfect examples of this: using both a lot of oil and have a short product cycle, so the rising cost of oil reaches the market in those two sectors in very short time. Other sectors has longer time to market of the energy price rises. But everything will become much more expensive. The virtual energy cost component will burden de price of each product/service. The same applies for the virtual water cost component (the price of water used for production of a product/service). Sharp rising higher prices that are overgrowing economic growth give less purchase power and thereby economic decline. Nations with no/less debts (not exporting purchase power), own energy/water (not exporting purchase power) and actual low prosperity levels (easy to gain) will maintain economic growth rates. Other nations will face (some or a lot) economic decline. As inflation grows (and depending on the nation's status cause yes/no stagflation) interest levels will rise equally dramatically. Debt than really become a burden.

Wealth changes: Let's make analysing of this facet simple, let's loose for one minute political correctly attitude to make good analysing simpler. The first world will be confronted with higher prices, as they are energy deficit, they will export their wealth to energy surplus nations. Gradual higher prices is of all times, due to inflation, due to money supply, but the result was steady prosperity growth. This time is it's different for the first world. Prices rise with no economic growth to compensate these price rises. The result for the first world: one 100% (as in mathematical no other option) certainly stagflation. Stagflation is when prices rise, people gets less purchase power and economies shrink/decline to lower levels. Stagflation is an inflation central bankers can't control: it's driven by external factors: they are on the side line of this development. Countries with severe current credit, energy, water and food surpluses will gain huge positive wealth changes (as other countries exports their purchase power -wealth- to them). The credit, energy, water and food crises together will totally reshuffle the wealth levels on earth. The price on/of oil addiction will be huge, draining the former economic giants dramatically.

Food changes: First: By air freight flown-in vegetables and fruit will become too expensive for the common people. Local produced food will become popular again. Second: Local food production will get an enormous boost Third: Local food production will become partial (off season, off climate) very high tech by Grow|OS: an open source greenhouse operating system that interfaces between standard high tech greenhouse

equipment and crop profiles (best crop specific settings of all equipment during the whole grow process): servicing both hardware manufacturers and crop profile makers, and local farmers. Fourth: Vegetables/fruit/herbs/flowers/fish based on Grow|OS technology will gone be practiced in underground structures (double layer cities/villages plateaus/islands or circle/straight levies/railroads). Fifth: Meat will become much more expensive than it is now and by this will be mostly eaten once a week instead of every day. Sixth: Meat replacements will gets an enormous boost. Culinary (re)inventions will bring new facets into global food. Seventh: Global species and recipes will continue gaining popularity. Recipes doesn't cost any energy by themselves and the energy facet of transport species is negligible. Eight: pre-prepared food will decline (food out of packages). Ninth: Due people will get more exercise (by less car miles due to expensive fuel costs) they will eat more without attached health problems, they even get healthier. Tenth: Cooking and eating will become more important than it is today (local economies, less travel time, more local live, more friendships, less speed).

Power shifts: Economy is power, there is never been an empire that wasn't started with economic power. This was the good news for 'the old world' and is now the bad news for the old world. The end of empires always started with the decline of their economic performance, over-stretchiness due too much arrogance on global matters, and competitors who are waiting to move forward or change to lift their powers to equal levels. After the collapse of the USSR (an empire that has gone bankrupted on the low oil price of the '80ties: see the Global Resources Analysis), the USA was the only ruler of the global high seas. In 2008, China, India, Australia and Japan underline the importance of the west part of the Great Ocean as their economic/energy life line and decided all four to intense their surveillance of this crucial part of the high seas. Like the USSR has fallen, the US will fall. The USA her federal government, local governments, banks and currency are technical bankrupted. The high energy price drains governmental, corporate and household budgets severely. High energy prices hits the hardest by the mega users. The USA is with 22% of global energy consumption an actual mega user, but in terms of relative consumption 4% of the world population uses 22% of the world energy a total by energy costs drowned nation. If the whole world should use today as much energy as Americans, there would be 550% more energy used as actually is used today. Economies that are US dollar based feels the energy price increase the most/hardest, in other economies, the high oil prices are a little compensated by the decline of the dollar as oil currency.

Turbulence: If we don't act and in that do the right thing: we choose for increased turbulence caused by the price rises and the economic problems they give (followed by risk of economic collapse in energy/resources deficit countries). Doing nothing is not an option in a changing economic environment, because the economic environment is changing, which certainly has effects. There are two intellectual challenges to overcome before turbulence and it consequences can be described: 1) less analytic thinking and 2) over positive thinking. Less analytic thinking: It's rare the fact that something must be done (if we want to avoid turbulence) must be even mentioned or emphasized, but too many politicians/economists/entrepreneurs/journalists/households believe that the disappearance of cheap/abundant energy/resources (as the two cornerstone of the economic progress) can be removed without any consequences for the economic building. Total unreal uneconomic unbelievable irrational point of view, too odd to describe but too many believes in / acts by this. Take away the cornerstones of something and nothing happens. The consequences of disappearance of the cornerstones without replacement is chaos. Really not of this world that this simple true is completely overseen by 95% of the economists. So much for the quality of our 'mainly wave

following' economists. Forwards thinking was something economists did a lot, just talk over the current economic weather and the past has become main stream. The other thing that must be straighten out is 'over positive thinking': Something like 'but we are intelligent people, we find ways to deal with this. Economists who say this don't understand really a) the importance of energy and resources on economies (and therefore businesses, governments and households) b) the short time frame in which price rises will occur. Energy is not an invention, not a new software program on a computer. Energy doesn't fall suddenly out of the sky like manna. Everybody thought that we have left 30/40 years before fossil are run out. But due to recent global population and global prosperity growth demand is outstripping supply and pushes energy prices to levels we thought that would occur 30/40 years from now in just a few years. Oil prices have tripled in just 2 years. It's safe to say that the next 5 or 10 years oil prices will double every year. Positive thinkers: where are your solutions? Market them: the world will pay you a lot if you do so. Don't you have own solutions just put positive miracle thinking into your bin: it will hurt you and your environment. Energy miracles we will not see. Economic winter due energy miracle believe we will see a lot. Economists: if energy prices get the coming 2 years the same boost as they did the last 2 years the party is over: food and energy will than push out any other spending and economies will shrink and even sink, with all the attached turbulence. Just take one day to imaging our current world with oil prices at $ 600 per barrel level. The fundamentals are more in that direction than in historical prices. We facing an economic winter and no soft one. Don't project economic summer data on economic winter situations: you will leave house with a 'coat' and get economic very ill. Believing in automatically appearing solutions is a choice, not an intelligent one, but still a choice. Less awareness, less analytic thinking and over positive thinking are the barriers before we can move to realizing real solutions. Certainly needed time we just have robed from our self by less awareness, not analytic thinking and over positive thinking. When reality hits, all 3 will disappear as snow in the sun. But it will be winter than. The winter is bad timing to prepare yourself for the winter. Damages will be unnecessary extra (extra as in: double) in size. Choosing to act is as much as choosing to act. When energy prices and food prices skyrocking, economies/societies gets into fire. Bankrupting of companies and thereby of financials and governments, unemployment, social unrest. Don't want to describe turbulence: you are an intelligent person: just think by yourself what will happen, what the impact of higher credit-, energy-, water-, food-, and resources prices that eat out the economy and consumption willingness and purchase power will be on companies, markets, purchase power, economies, governments, households, health care and each and every person worldwide and in your city. Want to go to work by public transportation? I think they will be on strike for resistance of wages cuts due energy prices. Holland has already had a long fuel price based strike of public transportation, which was ended by the government increased subsidies to the operators. But governments are the ones who will be hit the hardest by economic problems. Just look to the financial status of the US cities and you see this theory actual happen.

Collapse: If the current core column (energy) and the five other major cornerstones of our current economy model (resources, transport, information/communication freedom, property legal/protection and capital supply by financials) are melting, you or replace them by new (based on actual situation) ones, or you choose to do nothing and let the building collapse, or you start build a new building. This is not a doomsday scenario, but just economics. Scientists who don't see the possibility of total collapse of the current system don't understand the impact of cheap/abundant energy on current economy (and therefore on government/society). New technology equals not new energy. This a huge major misperception of the 'half awaked' intelligent people. Of course technology can create/conserve energy, but the enormous loads fossil energy has give us the last

decades will not easy to be replaced. Transition to new non-fossil prosperity is only option if fossil energy is getting expensive and running out. Collapse is not about there is no fossil energy left, but about there is more demand than supply and therefore high prices. High prices erode the old (based on cheap and abandoned) model till it collapse.

Dangers

Poverty
Tensions
Conflicts
Wars
Anarchism
Fascism
Totalitarianism

Poverty: PeakX will 100% sure lead to higher prices for everything. More demand and equal/less supply give always price explosions driven by just ordinary market mechanisms. The higher prices for everything, everyone, everywhere will give not virtual, but actual pressure everywhere. Certainly by the low incomes where this makes food and hygiene less accessible. It will lead the old/weak/poor/low paid/sick/unemployed persons/households/nations/regions/parts of the global society deeper into poverty. This is not a specific third world issue, but has been seen after the collapse of communism in the '90ties in the second world and will be seen the next decade in the first world as capitalism will gets its mature/endurance test. The first world will have massive power/gas/water grid disconnections of insolvent people/households/companies due to sharp risen prices, just daily food will become everywhere and for everyone very expensive. There is no reason why the Credit Crisis will not lead to a total collapse of global stock markets and the commercial debt paper market (corporate bonds) therefore its value. Slashing not small sized holes in the assets of persons, households and pension funds. The first phase/stage of Credit Crisis will lead not lead to the lost of saving money, government issued bonds of the bonds of all the GSE (Governmental Sponsored Enterprise: Fannie Mae, Freddie Mac, and al the other similar for market accelerating initiated government originated market/government models) issued debt paper, but as interest rates go skyrocking and governmental debts become not financeable, this could lead to collapse of the finance of government (making them insolvent). In case of new systems they will certainly honour the assets of bank deposits (saving money) otherwise the will not have any support of the nation for it. The Credit Crisis and the Energy Crisis will drain prosperity to poverty severely. Countries that are not directly exposed to the Credit Crisis have better odds in the first (direct) phase/stage of the Credit Crisis (as they only have the Energy Crisis to deal with). But if they for exports depends on nations that will be hit by the Credit Crisis, they will be hit severely in the second (consequential/indirect) phase/stage of the credit crisis. This is the reason why China will bee hit multiple and severe. They will lost enormous capital figures due their former investment commitments to the US, in exchange for market access in the US. They will loose their main customer nation due to less purchase power in this nation. They will feel the impact of the Energy Crisis in their own economy severely and the Energy Crisis terminates their ambition to stay the factory of the world ass skyrocking transport costs make a huge virtual import/export wall. China her only and major future hotspot is within the advanced technology hardware/software sector. The Chinese has proven to be very good in this and research and development is in China (relative to global levels) very cheap due low costs. The Chinese deliver each year more graduated students than US or EU has in total. China will purchase all the big US hard-en software brands, like the Arabs will purchase all the US financial and energy brands. India will stay the call centre of the English part of the and software centre of the total globe. India and China will gain majority 'market share' in the open source movement and the birth place of new open source projects. Russia and Brazil will be picking up the chips globally: They have everything the 21st century demands of a nation and they will

grow rich, strong and sustainable by it. Russia and Brazil will be the leading nations of the 21st century. In the US and the EU living standards will go lower as economies collapse under the Credit Crisis and the Energy Crisis. But regions/cities/villages who adapt their self as quick as possible to the new realities will develop a high quality, high prosperity, very sustainable economy/society with no bubbles. Inventing advanced local economies is the cure for less collapse and more prosperity. Sustainability will become the main economic dream/reality. It comforts and secures people/companies/governments.

Tensions: Local: When one family in the street has no food or is disconnected from the power/gas grid, they are losers. When the whole street has no food and no electricity and heat, they will go together to the food stores and grid curb hubs and take it by violence. Only wise local governments could address these huge issues that occur when the going gets tough. They need all the budget the can get for building a new economy, this is the reason that regional and national governments in the future must 'earn' their budget by supporting function, otherwise the just find one big united block of multiple regional and local resistance. Companies and Government Officials that want to reduce local tensions must read Heinberg and Kunstler plus Schumacher and Raiffeisen, those four pictures both the problems and the solutions: it will be consuming 4 lives of adequate wisdom in one week. Good local governments will attract brains and capital. Comparative Quality of Operation will become the challenge for local governments, just as it was in the 16th till 19th century in Europe. Some cities attract by their successful (quality of living, business and freedom) policies the brains and capital that search for good breeding/living environments. The most important governmental layer will be the local governmental layer. Any layer above this layer will be seen as facultative and facilitative. Regional: The main regional tensions will have water and energy as cause. Water is the oil of the 21st century. On July 13, 2008 the French President Sarkozy loosen the valve / pull the pull out of the EU by installing the Union for the Mediterranean. Giving a huge part of the EU instant an other supra national partner 'in the bedroom', a partner with no budget demands, an actual huge common binding facet and great historical background on a low energy demanding transport medium which the Mediterranean Sea) is. Water equals agriculture equals food. Water is the semtex of the 21st century. France will tap severely the Meuse in the future (for addressing Central France's water deficit), leaving parts of Belgium, Germany and Holland with severe less water supply. Diplomacy will face enormous challenges concentrated on one word: Water. Regional cooperation will be redefined. The rise of the influence of the EU as political body will stop and decline severely. Bilateral will be the keyword for the losing influence / political decline of any supra national body. Supra national bodies their future is only being servicing in facilitating bilateral relations/dating. Global: The world will be very angry to the USA. As always there must be a scape-goat when things went wrong and this time this will be the USA (other nations forgetting their own stupidity/responsibility instantly if a scape-goat is pointed). This is the reason that federal USA will be abandoned by the States: Being part of it will become a heavy burden instead of lifting wings. In their affords to save the sinking ship the US administration could use excessive military power as lender of last resort (as the FED fail in this function), but the world will not allow this. For the rest of the world the American Dream is already over. Guantanamo Bay, Bush, Cheney, Rowe, Rumsfeld and the Abu Ghraib Prison like events have already damaged the human/rightness/freedom imago facet of the USA brand globally severe (after it has it absolute top after 9/11), but when the world can writedown their investments in the US the friendships with the US and Americans will be cooled down to zero degree Kelvin (the absolute zero point with less possible action). The Americans will face what the Russians has faced after the collapse of their empire. America will have its Putin sometime, but the American Putin can not build on huge natural reserves, but maybe on huge food

production (like cereals where the first main export wave of the US). US version 1.0 (till 1971) has grown into US version 2.0 (till 2009), version 2.0 is unsustainable due high energy model and energy deficits (thereby energy imports) and therefore will crash on too high energy use and too high debt based consumption. The US version 3.0 will be sustainable. The US has far too much natural and human resources not to become a healthy (and this time on prosperity sustainability focused) nation again. The human resource facet of the US is important, like this is in each nation (Americans are certainly no Über Menschen, not the chosen ones), because they're sure inventive, positive (and yes slightly bold) people in a wide and beautiful landscape/continent. The relatively lack of tensions has boost the global economy severely, this will end.

Conflicts: Local. When the going gets tough, some parts of society will be earlier and/or more severe hit by the economic decline. This could lead to local unrest/conflicts. It's also obvious that food shortages equals local conflicts. Also water shortages could give huge local tensions, as one party (for example export focused agriculture) drains wells beyond critical points). Regional. Regional conflicts will have mainly one name: Water. This is already the case in California, Spain and many other parts in the world and we will see a lot more of that happening. If locals/regions that used to 'export' water to neighbourhood locals/regions stop doing that (by actual shortage for themselves or by future policies) this could give huge tensions. Rivers are natural pipelines of water, if upstream locals/regions use many water the downstream parties will receive less. A river as the Nile is such a potential, and the Nile Basin Initiative is therefore formed in 1999 to prevent such regional problems. And sometimes is oil or natural gas a conflict reason, as diagonal/vertical drilling techniques as a way of robbing oil from the neighbours, or neighbourhood oil/gas activities pollutes regional environments (getting the pollution bill of oil/gas, with out the income pleasures attached to oil/gas). Energy production also can lead to regional conflicts. German has installed a bunch of windmills, many are pragmatically response to the NIMB (Not In My Backyard) principle located on (as literally some 10 meters) the borders of Germany. Some border located villages in Holland has by this wing shadow circus the whole day, driving people real tired or psychological unstable. If these people will do stupid things to the wind mills this could give conflicts between Germany and Holland (certainly in times of high energy prices). This shove problems to the barriers policy on energy is not wise in terms of conflict birth ground. The same applies to nuclear installations. Military installations installed in a region (like HAARP/SDI now in Europe) can also be a birth ground for regional conflicts. HAARP for it's potential regional climate/ionosphere influence and SDI (as the new type of tech driven military bases) because of its military influence and spy capacity and tensions that it could bring to the region. Global. Water (as needed for life and food and prosperity) and energy (as being the number one thing needed for maintaining current economies/prosperity) is and will be the main sources of any global conflict as ideological conflicts doesn't exist anymore. Water as nations will secure total rivers from source to end and this will inspire them to become a continental instead of only one/some national power(s). By doing this they will hurt other nations and a new destructive worldwar can be scheduled by anyone. A war with less troops and much technology, hurting/scarifying civilians maximal. Energy as nations just invade other nations that has a strategic location in terms of energy transport (Afghanistan) or has actual energy surplus (Iraq, Iran, Saudi Arabia, Cuba, Venezuela, and other (Mid American of African) small/weak states as carbon resources become more and more concentrated there. This could also be played 'smart by the side' by stimulating national regional conflicts to gain relations/control with/on the new oil field based independent nations that will be founded out of these conflicts. Example: Saudi Arabia's oil is located in regions where the population doesn't like the central government. Actual example: Kurdistan is an oil nation that achieves national independency out of the federal state of Iraq. In the south of Iraq

is a similar different ethnic situation as there is in the north of Iraq, but there is no independent state drive more available yet, because that is -by it's easy accessibility- complete bombed (also chemical) out by Saddam Hussein as they as being Shi'a people felt more sympathy for Iran (being there Shi'a spiritual brothers) than for the former (and current) Bagdad based central regime/government or the US. But fuelling these two ethnic driven state births, the federal government of Iraq could be left with no oil at all as almost all the oil is located in the north of in the south. Any nation with one or more oil/gas rich regions face separation of these regions into independent states. By diplomacy (as in: paying some fee of the future income) or by (foreign supported) violence. The two possible very risky energy sources that could threatens global environment and stability(Ionic Energy and Fission Energy) also could be the reason for war. Starting with the most simple/actual: nuclear self determination. The Middle East located nations want nuclear (for replacing their own to big becoming energy use, that threatens further carbon export income). As fission is (unfortunately) the only available nuclear technology right now, they want fission based nuclear energy. Other nations doesn't like that (for military and/or economic reasons) and this causes enormous actual geopolitical stress. As you read this, the stress-meter is going more and more into the red zone. Maybe this fission attached geopolitical stress will speed up new/safe nuclear energy models, that would be the right thing to do, to fix this military attached nuclear fission problem (and it's a very nice 'view form above' that someone/everyone now official agrees on the relation between both). An other possible danger for geo conflicts is when nations start to confiscating/ceasing full/empty mega oil carriers (there is within some years a huge deficit on those as crude oil miles increases dramatically due the peaking of the production in non-OPEC nations) and full/empty LNG carriers (there is within some years a huge deficit of these vehicles). The deficit of oil/gas tankers will be the next price rise factor for carbon energy, the shipping companies will make money as water as transport shortages will lift transport prices till never seen prices, and new builds are extremely expensive by the high energy/steel prices. All big ships will have military deployed by the nations they serve. Ceasing ships the juridical way is always very common in times of economic collapse. All former USSR transport assets that where governmental asset related that in the '90ties appears in any state worldwide where seized by court orders of lenders, causing a lot of geopolitical stress that could lead to geopolitical conflicts and at least to difficult operating global transport environments. Also as prices of both ships/iron and products rise dramatically sea robbery will gain very much popularity. The global coastal seas are to big to defend by superpowers. HAARP (and beyond its ionosphere damaging characteristics, beside its possibilities to hinder foreign radio traffic ionic and to spy underground with it in combination with satellites sensors) and SDI (as new only tech type of bases of military/spy technology globally) also could lead to conflicts (as these locations could be bombed out by nations that doesn't like them, just like Israel does by each nuclear production facility in the Middle East till now). Gen Modification could also become a source of conflict. If this goes wrong (matter of time) this will damage ecosystems severely and the damaged nations will certainly start a conflict with the causing nation. And last but not least: as the USA will collapse economic, a super power disappears from the global stage. This could also lead to huge new conflicts (take the pressure away, several things starts growing instantly, and this will not be only beautiful things). The relatively lack of conflicts has boost the global economy severely, this will end. Georgia in the Caucasus is a perfect example of tension build-up. Huge geopolitical tensions due to energy policies. Georgia is a key link in the U.S.-backed "southern energy corridor'' that connects the Caspian Sea region (but also the Iraqi and Iranian reserves/production) with world markets, bypassing Russian and Arabian territories for transit and eliminating Gazprom her services for these countries. As usual Russia/Gazprom will win this 'battle' just by offering the right deals. The youngest war in Georgia is also not started by Russia but by the Georgian Authorities who wants to gain control on for independency focused regions with a different ethnic

population. Russia don't initiate fights anymore. They let Gazprom with short negotiation lines offer good business deals to countries. This is way bilateral solutions in the energy field never will work: they're theoretical, not practical and just aren't able to do quick and good business. Russia has become capitalistic in their genes (just doing good mutual business deals based actual production) and the USA has become socialistic in their genes (living on credit, more consuming than producing and in addressing the Credit Crisis in privatizing profits and socializing debts).

Wars: Resources wars seems/sounds something of the far future. The reality can be different. Iraq is war. Afghanistan is war. Quoting the former president of the Federal Reserve: Mr. Alan Greenspan (not some long haired anti war / anti American liberal) in his book "the age of turbulence": 'the Iraqi war is mainly about oil, it is clear that oil was the primary motive'. War is a nasty danger, seems an 'easy solution' (under pressure everything becomes more liquid). Fighting for energy is not a valid/wise solution. Wars drain economies even further/quicker, war is only good for generals and the military industry, for the rest of the global economy it is a 1000 times bigger waste than the initial amount of costs: destroying in one night the economic process of decades. War is bad for both the national economies and for the global economy. Wars for resources are stupid. Penny wise, pound foolish. They cost energy/productivity, destroy prosperity and creates damages to the survivors (also by the winners): lost, dead, suicide and psychological problems. War for carbon energy is also stupid because carbon deficit nations needs friends, real good friends (as the granting distribution model comes on top of the pricing based distribution model) and with throwing bombs you don't make good friend nor do good global PR. The generals in the 21st century must manage energy (conservation and harvesting) plans and spend half their days with diplomats and scientists and international developers. Soldiers must go to other nations. To do water works. Left their guns at home and bring their knowledge with them. Asians understand this. Americans not yet. The military industrial complex of the 21st century switches completely from defense technology to energy technology. Just for turnover and profit reasons: governmental budgets will implode, energy budgets will explode. And yes: they are very good in technology. They will become the winners of the energy market when they enter it. If the USA defaults on her debts and tries to cut of the foreign lenders by an own controlled Chapter 11 status (the debtor still rules), the foreign lenders (read China and Japan) could not accept this. War in the 21st century is not war like in the 20th century. This is something the Russians understand very good, the Americans (not haven being beaten by 'life' as the Russians) don't understand that. The Chinese are the new kids on the block who will loose their first bed (lending the USA in exchange for market access) severely. When the USA would defaults on her governmental bond loans (the treasury bonds) or on the GSE bond loans (Fannie Mae etc), the Federal Government of China will not survive this huge capital vaporizing, not state budget wise and not internal resistance wise and China will follow the USSR's path in division is separate states. The relatively lack of war has boost the global economy severely, this will end.

Anarchism: When one family in the street has no food or is disconnected from the power/gas grid, they're losers. When the whole street has no food and no electricity and heat, they will go together to the food stores and grid curb hubs and take it by violence. Mad Max alike situations. Both the Credit Crisis and the Energy Crisis will hurt societies/economies severely. Action gives reaction. You can't take (nobody takes, just symbolic way of saying) from large groups of society without expecting any response. People that have lost everything, have no more to loose. Panic Football will be the default status. Anarchism will grow severely as people has become disappointed in their leaders. Therefore it's so important that political leaders see the actual developments and tell

them to their nations. Truth is the glue record between our current relatively stable present and a stable severe dynamic future. If they don't tell the truth on the Credit Crisis and the Energy Crisis, the current leaders will be thrown out of office when the first real impact shocks appears. Leaders that have not analytic capabilities are no leaders in changes: they just can run the shop, nothing more. By the first wave of turbulence they not will be send home, they will already be home (for 'private' or 'career' reasons). Leaders that had analytic capabilities and see the current developments and there consequences, have till now done nothing (don't expose, maybe it will be solved), or don't see the real impact of the Credit Crisis and the Energy Crisis, or hope (against better knowing) that somewhere, sometimes something will solve it. Leaders that want to be in charge if the consequences of the Credit Crisis and the Energy Crisis really comes to the surface (are their any??) should stop being ostriches and facing their nations with those not pleasant to tell problems and their causes and consequences. That would ease the societal/economic impact in a way that societies/economies can absorb it better. Otherwise it will be 'the smash against the wall' scenario of Simmons and societal rest is than something that has been and economies without societal rest are bad performing economies. Relation troubles on the ship during bad weather. Double bad luck. Maybe there's also a Leadership Crisis. And maybe lack of leadership is actual the source of any other crisis (from the Credit Crisis, by the Energy Crisis, the Water Crisis, the Food Crisis, the Stagflation Crisis, the Currency Crisis, the Governmental Crisis till the Geopolitical Crisis). Weak leadership lets things grow wrong. Weak leadership runs away by problems. Weak leadership enforces problems, instead of preventing/addressing them. The relatively lack of anarchism has boost the global economy severely, this will end.

Fascism: In times of headwind, destructive politicians can grow easily. Their formula is always the same: solve nothing, just blame one part of the nation (or of the world). Hiding their own lacks of leadership/vision behind a scape-goat/whipping-boy. In South Africa this is actual growing (foreign workers gets the blame). In the USA this is also growing (Arabs gets the blame). In Europe this has been a problem for almost a century. As people has become disappointed in their leaders, anarchism grows severely. This will make space for fascistic leaders which otherwise never would have any support of anyone (because they're not the bright people that have a lot more to offer) and they suddenly finds lots of space to grow. An empty stomach is not a good political advisor (Albert Einstein). Fascism is always a response to some high impact economic/societal accident. The rise of Hitler has been impossible if there was no such economic turbulence (caused primary by financial chaos as direct and indirect results of war, the 1929 effects didn't result in fascism in other countries). Nations that take up the sword, will go down by the sword. A mature (ages old) wisdom, that darkens certainly US, Saudi, Israeli and also Palestinian future perspectives severely. On war grows destruction, war derails everything. Economies, people, families, households, companies. Rebuilding has nothing to do with war. The first thing of rebuilding is burying war very deep. Rebuilders are economic saints, warriors/destroyers are economic demons. For preventing all these causes of fascism, it's so important that leaders see the actual developments and address them adequately. The fascisms has hurt the global economy severely, and will do it again if leaders stay weak, chicken and short sighted. Leaders are obliged to analyse, see stones on and holes in the road and facilitate economies/societies a safe trip to the future, no matter the road and the weather. If they don't do that (starting with analysing and then communication of the results) they as lazy in research (and thereby a little dumb) 'leaders' will be replaced by not lazy action (but very lazy in research) popular action really bad leaders, which will throw societies/economies into a lot of friction and thereby into internal resistance and thereby in economic malfunction. Fascism is economic friction and it's results are not good. Hitler just borrowed and robed

a fake economy together that was not sustainable in anyway. Fascism is just for the leaders, not for the people. Unfortunately people will choose fascistic leaders when the normal leaders has done a bad job and brought them into serious trouble. Good leaders analyse the Credit Crisis, the Energy Crisis and the Water Crisis, and first of all start being honest about it (just saying: we have no answer, we must make the answer together and there is no one answer anyway, we must do a lot, starting with analysing and making a to do list and setting priorities). The relatively lack of fascism has boost the global economy severely, this will end.

Totalitarianism: When the going gets tough, the tough gets going. If everything goes wrong normal democratic leadership becomes powerless, that's the sad thing of letting things come so far. Democracy in chaos is just only wishful thinking. The rise of Hitler has as much to do with the situation as it has to do with the political leadership and there way of cooperation between the political leaders before Hitler. When everything goes wrong and there are no good leaders, unfortunately bad leaders will take over the store, killing each civil right and repressing (or even also killing) each opposition. Totalitarianism is from economic perspective a bad performing engine: inventiveness only glooms and booms in freedom. States only can interfere negatively in this process. States can steer not perform economic development. But when everything collapse, totalitarianism is the only option besides anarchy. Russia has under Putin a short phase of totalitarianism (authoritarianism sounds better) as last resort for finding a solution for the very hard situation the Russian nation had falling to. The Medvedev/Putin phase is maybe the between phase between the former authoritarian capitalism status and further democratic capitalism status. In times of money reforms and resources targeted nationalization totalitarianism is the lender of power of last resort. This analysis is not a promotion for totalitarianism, but a warning, weak leaders in severe times leads to chaos and chaos is the birth ground of totalitarianism. Look to the birth of the USSR. Totalitarianism based state structures are not nice, for almost anyone, only for a few. As said many times yet: weak leaders leads to totalitarianism. The only recipe/formula for preventing getting totalitarianism is facing/analysing problems, communicate honest about them, getting people involved in solving them. The relatively lack of totalitarianism has boost the global economy severely, this will end. China has start growing when they abandoned totalitarianism. Myanmar will stay in the economic dark until the abandon totalitarianism.

Changes

Shorter distances
Increased localization
Reversed globalization

Shorter distances: The one major influence of high energy prices is that any physical movement of people and products increases very much in price, as movement of people/products demands very much of (more and more expensive becoming) energy. PeakOil equals shorter distances: every economist will agree on this. This simple mathematical fact has huge economic impact. As short as 1 year ago we all thought that the economy was reaching it global status and the world market was finally born. But the energy prices spoiled the globalization party. Distances become a burden in economic calculations. The world economy that was born in neighborhoods and has grown to globalization, will contract back to regions. Don't shoot the messenger, but the energy price. No person/business is willing to go bankrupt by taking the past further more as that model has got a total new calculation due to energy price rises. The one thing that escapes from this distances = expensive model is digital. In the digital world there are no distances. Information, knowledge, experience, phone, email, VOIP, videocalling, video meetings: all these will not be effected (on distance facet) by the energy prices. The shorter distances rule of higher energy prices only applies to actual physical movements. In one simple line: energy prices 'tax' distance (transport/travel) severely.

Increased localization: Due the fact that globally approximately 50% of the energy consumption is used for transportation (road/air traffic of persons/products) is localization an attractive change with huge impact on energy/time use. Cutting energy costs dramatically without any lost of prosperity and improved welfare: start localization processes. Localization is one of the hidden pearls of economies: capable of improving/maintaining prosperity and improving welfare the same time. People can do the same they always did, but just doing it on a smaller footprint gives huge economic benefits. Localization is the main weapon in the battle against the effects of skyrocking energy costs. Simple realizable and available everywhere for everybody. Sell the car? No, keep him, but just don't use him anymore for making anti-prosperity/anti-welfare time/money demanding traffic congestion. Working in your hometown of living in your worktown. It's the smart way to survive higher energy prices. Employees can swift jobs easily, companies can't switch locations easily. Office work can be done in a distributed model very easily. The remote desktop technology (current) and XML information flow technology (future) give that instantly. Office work will more and more be done distributed and production/effect will be more and more the payment model. Logical and production work can not be done in a distributed model very easily, but as transport costs rises localization will become more and more attractive also for them. Schumacher is the economist who re-invent localization in modern times, who developed it's theories back in the '50ties in the UK. Schumacher will be re-published and read a lot the next years, because he analyzed and described local economies better than everyone.

Reversed globalization: Rising travel/transportation costs due much more higher energy costs are hurting the accelerating globalization development that took place in the last 100 years severely. Making China the production area of the world was based on two things: 1) cheap labor and 2) cheap transportation. PeakX moves production jobs back to purchasing area's: labor is getting relatively less expensive due PeakX and transportation

is getting actual much more expensive. The effects of PeakX often are compared with very high natural import barriers. PeakOil has by sharply rising energy/transport cost created virtual import barriers higher than any government ever has dare to install. Higher than the import barriers that where installed in the 20th century before and after WW II around the globe. China will survive this: they have build a strong economy in less than 30 years. Asia will swift from production to technology. Not Europe, not the US, but Asia will become the inventing region of the world. In Asia each year the same number new engineer graduates as EU en US have together in total. It's all in the numbers. Yes, Asia has missed the innovative/liberated drive caused by Age of Enlightenment. Yes, Asia has the benefits of Confucius (solid social structures), but also the disadvantages of Confucius (less value for and experience with individualism and creativity due to conformation to the group). But EU en US are old and spoiled in terms of earnings and drive and Asia on the other hand is young, hard working and has a big appetite for knowledge and economic progress. Asia will lose production for the world and will gain innovation for the world. Asia will become the knowledge cluster of the world. Research in Asia can still be done for 10% of the cost in EU or the US (with long working days, less additional demands, much drive, high knowledge, no lease cars, few holidays and yes, with less independent thinking, but that changes even as you read this text more and more). Russia (due it's strong state characterized political history) has a great future in exact science: they have a huge pool of exact scientists. Exact science is within the Russian genes (exact science was something government didn't sanction in the USSR, it was a safe science area). Africa has a great future for food-, water-, energy- and resources technology. Collaboration (major facet in innovation) is deep in the African genes. Globally physical production will move back to consuming area's. Labor was the main cost of products. That has changed by PeakX: the costs of energy, material and transport (is energy plus material) and sometimes water will become more and more the major costs of product prices. Global product streams will reduce due the fact that food, energy and water will become more expensive and people will have less money to spend on other purchases. Global travel will become very expensive (due high energy prices), air travel will become like in the '50ties and '60ties a luxurious action, only the upper class of societies can afford. The Internet still we boost globalization. Information and communication will get more and more globalized. Videocalling with relations will replace air travel to them.

Problems

Less awareness
Much simplicity
Misplaced focus
No vision
Passive policy
Lying statistics
Inside trading
Absent drive
Weak leadership
Weak journalism
Absent opposition

Less awareness: The mainstream awareness status of PeakX and its complications was till 2007 near zero level. Due the price rally of oil this is changing. News papers/sites that haven't the oil/gas/power/water price and the governmental debt, total financials writedowns and daily/weekly IRS income on their front pages are not getting the impact of these mega influences on every word in their whole publication. Stock exchange figures are just figures of one day momentum trades. Energy prices eats everyday severe amount of capital out of the economic system. Concerning the Credit Crisis, there is no much awareness about the size of this problem: the biggest economy of the world (the economy of the US) is for many years partial fuelled not by production, but by consumption on credit. The size of this huge and long maintained economic waste is underestimated, due to less awareness. This load of burned/consumed capital must be balanced and this will hit twice as much as it give pleasure first. The Credit Crisis is over tomorrow almost everybody says. Meanwhile more and more homes go into foreclosure, pressing down the market prices of houses towards 50% decline. When in a street more houses are in foreclosure the house price sinks like a brick in quicksand. Quick sand is a beautiful word. Fuelling economies by consumption on credit is just building on quicksand: total unsustainable, total without any long term future perspective. The results of the Credit Crisis (and it's huge by no one even to imaging consequences) is the cause of current quicksand (fractional banking till 1/65 equity ratio's) in economies. It will be abandoned in the new capitalistic model. Governments will seize the central banks as they run out of trustworthy money printing capacities. About the size of the Credit Crisis there is no awareness. It's like the Energy Crisis: We all know the facts, but the consequences are too severe to discuss them without the risk of losing intellectual creditability. So our less awareness is more a courage problem, we don't like to research the size and impact of both crises because we don't like the answers that will come out of it. Concerning the Water Crisis (and the connected Food Crisis) awareness is also very low. Concerning the consequences of the Credit Crisis, Energy Crisis and Water Crisis there is zero awareness. We don't want to be awakened by things like a Food Crisis, an Economic Crisis, a Governmental Crisis, a Currency Crisis and a Geopolitical Crisis. We don't like these things, so we don't think much about them. Still the 3 problems that will give them grows each day: the Credit Crisis, the Energy Crisis and the Water Crisis. Less awareness is a choice, feed by underlying factors as described below.

Much simplicity: 'Every problem is a self healing problem, so the energy problem also will be solved by itself'. That's the status of mainstream energy thinking in science, economy, companies, governments, households and by people. Too stupid for words. An insult instead of a honour for the human intellect. Without direction, intellect and capital there

is no finish. The human body is very much self healing, but take away the oxygen supply and the human body collapse. The 'every problem is a self healing problem' frustrates/halts/delays the needed solutions. Fuelled by Darwin's legacy of natural selection and it's consequence that the most beautiful things just come to front automatically. But with overlooking two simple main/crucial facts: odds and time. Odds we can't afford and time we don't have. You can't unplug an engine from it's power supply and expect that it will stay running in the same speed without the energy to drive it, till a new source of energy is found. It's too stupid for words, but this is the current status of mainstream energy believe. Believe is a good word for it. Making believe or wishful thinking better. Odds that are against us: if an other sources of cheap and abundant energy was so simple (around the corner) to find, it already had been found. Simplicity kills the cat, not curiosity. It would be better if we had some less simplicity and some more curiosity. Than our future perspective would be much more better/vital. In an era knowledge is our king, energy knowledge is banded from the country by stupidity. The main thing behind this is that people don't understand the concept of energy. Energy can not be created, only harvested. Where must all that energy come from if we want to stay running the interstate highways and airlines? There is also much simplicity on the huge amounts of energy we use overall. We really don't get it. There's also much simplicity on the amount each product/service take before we consume/use it. Concerning the Water Crisis simplicity: people don't see that sweat water is running out and don't understand the fact that transforming seawater into sweatwater takes real huge loads of energy (by the current status of technology, this could become less, if we find right ways to influence this process by voltage, magnetism or catalysts), energy nobody knows where we can get it cheap, or loads of space (only available in the huge deserts of the world, but water is needed on other locations, so water also than will be very expensive relative to current cost price levels). Concerning the Credit Crisis. The simplicity regarding the Credit Crisis is beyond imagination. Nobody understand the huge amounts of capital that are used to fuel the US consumption bubble. Apparently people think that balance sheets are self healing too. This is not about stock profit that has grown and now melts away (+1-1=+0), but this is about a complete drain on global capital that has fuelled the over-stretchiness of the American Dream. Money that has been spend and someone had to pay for it or otherwise someone had to take the looses. Much simplicity on the wheat/meat ratio. Much simplicity is on the intensity of water use in the agriculture. All this chosen over-simplicity is a deliberate choice, feed by other underlying factors, as described below.

Misplaced focus: The complete focus in both the Credit Crisis and the Energy Crisis (and maybe also on the Water Crisis) is on 'continuation of current models'. This is weird, because everybody that digs more than half a hour seriously into PeakOil and PeakX understand that the current model has no future, because it will be faced with less supply, much more higher prices and treats of actual blackouts/shortages. We had to start with awareness, awareness on the effect of credit, energy and water on our current model, awareness about what will happen if one of those (or even two or even three) should no longer be cheap and abundant available. Then (only than) we will be more accessible and loose own wrong pointed focus. We can't maintain/isolate the current Credit Crisis: there is too much capital spoiled in a partial fake, overstretched, by cheap credit fuelled debt US economy. This never in size seen losses must be balanced somewhere sometime and that will give huge damages, bigger than we could imagine. We can't maintain/isolate the current Energy Crisis: Our economic production systems and life styles are based on cheap and abundant energy and these times are over, but we still been stocked by the old model. There is no energy alternative available right now that can replace carbon energy. We are never been able to maintain the interstate highways and the airlines by the current status or renewables. Trying to maintain the not

any more able to maintain (not sustainable) energy demand is a complete misplaced focus. How much we don't like changes, let's face reality before reality faces us. It's better to brake and steer than hit the wall/ravine we will crash on. The focus should change from doing everything to maintain yesterday, to doing everything to create tomorrow. It's so obvious after just one day studying (better said, leaving the car trails and go to a 'mountain' and overlook the whole situation. The train has speed, the train is gone crash, there are brakes, there are other railways from each crossroads. Straight forward in a changed environment can be considered very stupid. Being stupid in focus concerning the Credit Crisis, the Energy Crisis and the Water Crisis is still considered sexy. It isn't. It's just dumb and reactionary. Only non-thinkers doesn't change focus if structural changes occur. Three main columns under the current model are on break of collapsing. Continuing to do if nothing is happening is just non intellectual behaviour.

No vision: Vision is in dire straits. The endless growth focus, has narrowed our continuity focus and surrounding view, like a biker that must go on if he want not to fall. A situation that only is focused in growth is due to collapse if resources runs out and thereby gets more expensive. Time for a time out. Discover a vision on these new situation. There are only a few who have a post carbon prosperity vision. Doomsday preachers have no vision: they just had the current system while profiting tremendously from it, even from it's coming under siege and it's defaulting. We have no vision. None of us. It's a shame, but it's the unfortunate the truth. Vision grows not in being busy with consuming, nor in narrow minds of reactionary people. Vision grows under pressure. So vision will come to surface when our lives get changed/affected by the Credit Crisis and the Energy Crisis. Therefore the no vision winter regardless the Energy Crisis is over: it's vision spring (as the Credit Crisis and the Energy Crisis start to have impact on our lives/businesses/banks/households/governments. The certainly a no total vision winter concerning the Credit Crisis. Only the IMF is very clear about the further decline of the US real estate market prices (and thereby about the deepening and widening of the Credit Crisis). Nobody has any answer, all hoping -against all odds- for the best, because if this recovery not will happen (and it will not: the gap is too big, balance sheets must first been cleaned up) the consequences are severe. Collapsing both the financial system as governmental budgets (and the funding of these). In the US if some more banks go, the FDIC (Federal Deposits Insurance Corporation) will be out of insurance funds. Than the state has to tap in, this will 1) wreck the USA brand in the world, 2) increase the interest rate on new Treasury Bonds (regardless how heavy the Open Market Committee of the FED used printed dollars to trade in the Treasuries to keep the trade alive: something they do for quiet a long time yet: printed money attracts foreign investments by an alive trading floor), 3) lead to skyrocking interest rates, 4) will force the dollar to collapse, 5) will end the Federal Government system of the USA (not by choice, but by dried up funds) and 6) this will take other governments, currencies, companies, pension funds around the world down to. The US financials have show the world that they don't can handle much cheap credit wisely. If the dollar felt and Treasury Bonds become worthless the USA loose it purchase power in the world completely. It's not the '70ties where Nixon could say to foreign (Bretton Woods) governments: 'sorry the half of the gold we should have purchased we didn't or we sold it, anyway it's away, but we have new printed money to give to your country instead'. The USA is not longer the protecting and credit giving nation, but has become a parasite nation the rest of the world: foreign central bankers will not increase their dollar 'backing' any more further. The only thing governments can do as last option to contaminate the Credit Crisis when it goes really wrong is seizing their own currencies and the central banks who run them and abandon the debt/loans issued based fractional banking as form of money supply and replace it with a by governmental assets/orders backed system of money supply and bailing out the saving deposit holders, sanctifying the shareholders and bondholders. If they can

save their currency by this is based on the size of the former US assets of the currency, companies and pensionfunds. The tough choice is supporting the own current currency by this of letting it fall also and use the new coverage/supply system for a brand new currency (lead by the BIS: Bank of International Settlements). Mixing old in new (making new more acceptable but instant burdened) of just initiating a new value with mixing old values. The new international currency will be energy. Not the Joule but the kWh, because measuring the Joule is difficult and the kWh is simple, electricity is transportable and warmth much more difficult, there is already an infrastructure for electricity and because kWh is based on electricity and electricity is the most common appearance of energy in the future. A currency that can not be inflated artificial and gain value during time (till the energy problem is solved by a new cheap and abundant way of harvesting oversupply of energy). Fractional banking in energy can be avoided by legislation that forbid that as can artistic behaviour and be assured by legislation that forbids contracts longer than 1 year (giving fractional banking less space) and legislation that demands online database publishing of contracts and auditing of the calculation software by external auditors and by local credit energy/water credit record databases (preventing over credit). The energy currencies will also compete on local level with the new (local) state originated cash currencies, because governments can tap budgets from it or banks can inflate it, because each company and household will be able to produce some energy surplus (by the right investments). The energy utility services will be the new banks of the world (limited by within a year delivery legislation that prevents bubbles and ensures fixation with real values: we don't want a new Enron, and certainly not an uncountable number of new Enrons all around the globe) and they will cooperate with the mobile telco's for a cheap payment structure where GSM or IMEI number is than the bank number (owned by the owner, serviced by a provider). Digital non-fractional gold money also will gain popularity, but it has it's not all the benefits that energy currency has. For example: the pureness of the gold is disputable and not just measured available in the gold currency. The same applies to water, cereal, coal, oil and other commodity based currencies. Of course the USA will try to take a lead in a new (global) gold/energy dollar, but any government in the world will no longer be pleased to cooperate with the USA Federal Administration (as that equals being robbed in free choice) and then the US Federal Administration structures will be ended as all their former ways of financing will dry completely out. The USA will become a bad brand and the senators of all the 50 states (and 1 district) will leave Washington DC with the first flight out. The federal USA structure will burden their foreign contracts and leave them with no (energy and resources) purchase power overnight. All states will introduce their own currency (first digital, but within weeks also cash). The damage caused by the US mortgage debts, the US federal debts and the US municipal debts to the rest of the world will be severe. Being American will be equal to spending other peoples savings/pensions. America will face what Russia has faced more than 10 years since 1989. A global desolation and a global bad imago for a decade. China will be hit by this: money away, currency down and main export market that lost it's purchase power. The USA will passed away on it's own made politic/economic/military/moral overstretchiness, based of both debt that could grow and foreign demand for the dollar. The balloon could handle air, it was part of the concept, but the balloon is overdone inflated and by this its structure is damage. Leaks can not be fixed by some Paulson generated fixes. The problem is overstretchiness, not some leaks, much severe than just some leaks. The overstretchiness has damaged the future perspectives of the system. The next President of the USA will be the last one, who only can shut down the store. It's a major pity: the USA was a nation with a remarkable foundation by Constitution and Bill of Rights not many other nations have. The separated states will survive: the US states have all some good resources, they have enough space to feed their people and yes, they will have in some States severe water shortages and yes the major cities will bleed to dead. Amsterdam has faced such a period also, but

when times change (read as a new cheap and abundant source of energy can be harvested) the cities will have a second life.

Passive policy: When there is no awareness, much simplicity and no vision, there will be no much policy making happening. Laissez Fair is the main policy. Every government should already had their ToDoList with priorities and budget estimates at hand for addressing the effects and consequences of the Credit Crisis and the Energy Crisis (plus the Water Crisis and the sequential caused other crises by these initial crises). ToDoLists full with adjustment actions and maybe also some emergency response models if things really collapse. There is a reason for the ToDoLists: If you don't know what to put on it, the only thing you can do is hoping that the clouds will be blown away. But the Credit Crisis and the Energy Crisis will no go away: they are real, as real as anything can be. Policymakers with some brains and time know this. They know the problems of the Credit Crisis, Energy Crisis and the Water Crisis, but they don't have adequate answers for these problems available (yet). So they just push these issues forwards into the future without taking them. You can't expose a problem or a series of problems when you don't can deliver adequate policies to address it. And of course there a lot wishful thinking by policymakers, politicians and governmental officials/bodies. This is like the financials who all delay their downwritings in expectation of a miracle on the US economy and thereby housing market. Something that still can happen: the absorbance/power of the market/economy is huge. If the US stops consuming and (backed by the cheap dollar and therefore attractive export prices for their products) starts working/exporting their high quality equipment and knowledge. But even then: the costprice of the US consumption on credit is far too high in the world market: the US economy must be redesigned to lower cost levels and consumption must be backed by economic production and no longer on lending against each economic odd/reality. This is not something of lowering wages. On minimum wage there is already much budget for the most simple basic life. This is something of cutting each unnecessary budget taking issue. From energy to (governmental) overhead. Not exporting freedom while the own economy is sinking. There is global a passive policy ambiance because everybody hope that the US economy will bounce back. But bouncing back can not be done by credit. Credit is overused and lost its beautiful capabilities by overstretchiness policies. One beautiful superior system (money creation based on loan creation based on fractional banking) is overloaded itself too much and has collapsed. The interbanking balance differences (basis of the whole virtual loans based money creation system) is collapsed. Credit is based on payment behaviour and trust. Both has gone bad. Passive policy behaviour is attractive when there is still hope. Hope for the Credit Crisis (a new president who can restore US imago in the world, US exports that skyrocking within half a year and tune the US economy wisely so that the US become costprice competitive on the world market) is still a valid option (only the US can't deliver on supplier credit anymore, and has one of the new presidential candidates any plan on a not painful but smart redesigning of the US economy/government?). But it's not only the Credit Crisis, it's only the Energy Crisis, hitting the most energy consuming/wasting nation (as the US is) both per inhabit and per dollar earning severely the most. Not underwriting Kyoto will be listed as one of the economic mistakes of the Bush Administration. As European manufacturers has pushed to make their processes energy effective, the US manufacturers are stocked with (now due too high energy prices) too expensive production models/processes for the global market. The US was getting old, Asia was young and Europe went 'young' due to underwriting Kyoto. The Energy Crisis turned the odds for an American recovery worse. Put in this picture, the capital drain due to interest on debts (as money creation will be halted or inflation will go to skyrocking / ravine edge levels) and energy imports: Foreign nations/economies tax the US earning severely. An own chosen direction of the US it's people and administration. Plus also take in the picture the Water Crisis that is rising

more and more in huge parts of the US, cutting severe in her agricultural production (and therefore export earnings). The changes for the US are thin. The hope that the US will recover is the foundation under passive policy. But considering the fact that the Credit Crisis has the actual size it has (not the small yet disclosed little size, but the real big yet undisclosed size), the Energy Crisis joined the Credit Crisis, a Water Crisis is growing and the fact that changes and restructuration will be very tough for the next president (who inherit a total wrecked economy, financial system, debt position and currency) in times of severe head winds caused by crises and the consequential crises, the odds are different than in the past and therefore bad. Passive policy is based on wishful thinking by less analyzing and less courageous leaders. No matter if they're corporate or governmental: less policies are made to survive the bad weather, therefore the bad weather will hit severe. We have not much policy/courage we can be proud on. Passive policy is for losers. We are losers. Beautiful weather sailors, that goes down when the first bad weather arrives. Cutting in budgets is not addressing policy, turning economies so that they survive the Credit Crisis, the Energy Crisis and the Water Crisis and all the consequential crises they course: that's active policy making for companies, households and governments. No awareness stimulation, keeping simplicity in full honour, not taking time for vision and policy making based on these three: That's passive policy. We're blessed to collapse with it. We got the leaders we want / have chosen. They are just an bunch of smooth 'happy day' 'are back again' talkers during the day, not capable of leading us through the evening, nor the night of giving us a new dawn. In Holland we have a Minister of Economy who denials PeakOil time after time (as oil major CEOs state otherwise), a Minister of Finance who denials any impact of the Credit Crisis to the economy of Holland (while Holland is very much dollar bounded in turnover and assets and a heavy weight owner of vaporized CDO values and US real estate by its major pension funds). It's time for leaders to get in touch with reality or for nations to vote for new people that has shown some actual knowledge and has done some reality analysis. The 'if everything goes down, everything goes down' attitude must be become unacceptable for leaders. Leaders who say so / think so must resign. We need really real leaders that really wants to guide us though the storms of the Credit Crisis, the Energy Crisis and the Water Crisis (and all their consequential crises) by restructuring intelligent/appealing not by just negative force/cuts but by adjusted model creation of a new dawn for to this facets adjusted prosperity. The new president of the USA will face half a trillion budget deficit a year, with the declining trust in the health of the US only to be financed by the purchase of Treasuries by the Open Market Committee of the FED. The actions of the Open Market Committee has extended the last phase of the American Fairytale of consumption based on debts instead of earning by production, but as the Credit Crisis came to the surface the problems got too big to handle by market activities based on digitally created dollars by the Open Market Committee. That the world accepts such thing as the Open Market Committee is an economic wonder, but its influence is overstretched: if this system of non disclosed market interventions continues the Open Market Committee has purchased all shares and bonds available Wallstreet, because everybody wants to sell and nobody wants to buy. The Open Market Committee model of sometimes short intervening in markets by supporting them was beautiful, but they has not been able to resist the temptation of doing it often and long. Now nobody knows what trade on Wallstreet is Open Market Committee supported (and thereby artificial) and what trade if a real market trade. If you have a medicine and you don't use it wisely, you end up with severe situations and no medicine. History will learn that the last 8 years of trade where partial a printed money based fake fairytale. The pain is moved/pushed forward by chicken leaders and now has moved from severe pain to real mortal threatening status. The babyboomers don't like pain, they have tried to push it into their children's future, but time just ran out as they want to retire, so they and not their children are confronted with their own behaviour. The USA is on intensive care, getting intravenous oxygen from the US central bank, backed by a government who want

to lend excessively against lowest possible interests, so that budget deficits growth not found high interest rates as road blocks. Together they manipulated shares, bonds and treasuries markets for some years, holding up appearances of demand for shares, stocks and treasuries. Stocks in de whole world went down, but Wallstreet stand fear. On quick sand. The maximal stretch of this non market behaviour of market influence is reached when the amounts became too big to handle). In any other business this should be named as can artistic behaviour. As state above: the Credit Crisis can only be addressed by having a plan to rescue or replace the own currency on the shelf. The only thing governments can do right now in addressing both the Credit Crisis and the Energy Crisis (any maybe also the Water Crisis) is inform their nations (companies, households and inhabitants). This takes real courageous leaders who wants to serve their nation regardless their popularity and are not afraid to been 'shot' as the messengers of bad news often are been and often will be.

Absent drive: The complete focus on economic consumption has take it's toll. Not only in the world, in the environment, in society, in families, but also in people. Western people have become spoiled. Nothing is left to go for, nothing is left to fight for. Easy to get economic growth (consumerism) is the main movement in the first world since the '80ties. Consumerism has undermined social structures and depowered people severely since then. Consumerism is a movement with no loyalty to itself. When consumerism doesn't perform anymore, it has instant no followers anymore. The absent of drive probably than become compensated by over drive, with a lack vision and policy, as we will wish that we had grow more independent minds and a diverse society and governmental system, as that would keep us earlier on the right track before the crash and would avoided the collision due the Credit Crisis and the Energy Crisis. And without awareness, with too much simplicity, with misplaced focus, no vision and no policy there is now pressure for action. We want to not to survive but pass away during the night. We're not only stupid, but also lazy in both thinking and acting. So much for our future and the future of our children.

Lying statistics: Not one single governmental figure supplied after 1960 is not artificial pushed in the wanted direction. GDP, inflation, un-employment figures are since Kennedy cleared from discouraged workers (norms for this can variable due to wanted outcome). The yearly social budget surpluses are since Johnson's Unified Budget pushed into the general budget (regardless the fact that they are needed into the future and so create a huge invisible debt Walker as Comptroller General of the GAO has warned about). The price rises of food and fuel are since Nixon not longer part of the inflation figures. Since Clinton in 1986 implemented the Boskin Commission statistic model, statistics lost any connection with reality as 3 artificial influences where set into place. These 3 where: 1) Substitution: If something is expensive people but something else. No more salmon, but hotdogs for example. The Farm Bureau who doesn't do this give a 11.7% price rise on the last year, the government gives a 4.1% price rise, quite a difference. 2) Weighting: When some goods/services rise to fast, their weighting is lower. For example: Healthcare is reported as 17% GDP, but weights only 6% of the Consumer Price Index -CPI-, even GDP counts for more than consumer spending (so it had to be higher than 17%). 3) Hedonics: The product improvements are woven into the inflation figures. The computer of today is faster than the computer of last year, son the price of the computer has dropped on paper (not in the store). In times of high speed product improvements hedonics are a huge reservoir to lower inflation figures artificial. 46% of the CPI is influenced/adjusted by hedonics, creating the current reported 5% inflation instead of the real 13%. This is the push of the cliff for the US payment power capacity are thereby one of the unknown triggers of the Credit Crisis. People doesn't have the payment power

anymore by the lack of purchase power they lost. They were not encouraged by the government to slow down, but stimulate to spend more, even the purchase power was not really there, so the payment power declined severely. Anything nobody doesn't understand (the mixed signal problem) becomes at once very clear. The reality is hard, the statistics are rosy. Low inflation rates has nice governmental effects. Social security doesn't have to rise much, hospitals can not rose their prices to much (and are in dire straits). The GDP figures are also cooked, year after year. Although cooking gets of course more difficult each year, as the gap with reality widens more and more. GDP is inflated by: 1) Imputations: Transactions that doesn't take place in reality, but only in GDP. For example the homeowners without a mortgage lives for free, there is no transaction, but the GDP has add this 'transaction' into GDP account. 2) Hedonics. The effect of improved technology is taken into account. This is really surreal. Computer sales gives better computers, so more production and so a higher (invisible) GDP, that the government wants to put in the GDP. The most odd facet of this: technological improvements are used to push inflation artificial low and the same time to push GDP artificial higher. Real transaction based GDP in 2003 was not the reported $ 11 trillion, but $ 7.1 trillion after $ 1.6 trillion artificial imputation reduction and $ 2.3 trillion artificial hedonics reduction. The 2003 GDP contains 35% air. Steady each year 5% increase with lead to levels of absurdity. The GDP grows and foreclosures is reality. Not only stupid subprime investments with even stupid (on eternal price rise based) payment schemes, but also just a foreclosure threat by the regular American family that struggles with food and fuel (and mortgage, creditcard payments and car loans). The distance with reality grows each year. On paper we're improving year after year, but in reality we declining year after year. No government ever will have the guts to remove these huge lies out of the statistics. Regardless the economic demolition effects of it. The Planck Proposal described in the Credit section of this analysis maybe could be the moment. This Boskin Commission (1995/1996) originated changes also give a complete different look on Clinton's historical economic success, making it only artificial created by these artificial into the calculation brought influences, it was just changing calculation rules. Since than reported inflation was severe lower than in reality, reported GDP much more higher than in reality, reported job rises were severe lower than in reality. All just by data manipulation. Cooking the books has started by the government, not in corporation. Making data was easier and more sufficient than making real economy or telling the truth. By all this the economy lost it beacons for navigation, for staying in deep/good water. Lying statistics jeopardizing our future severely. Jeopardizing statistics should be the most severe official and governmental crime, with ditto consequences. Much of the data on statistics listed in this paragraph is acquired from Chris Martenson's site and the online presentations on it (http://www.chrismartenson.com/fuzzy_numbers). The huge consequence of all this fancy/cheating calculations is the fact that the USA is since 2001 in recession. Mixed signals are better to understand after cutting the air out statistics. Real statistics explains one of the reasons of the Credit Crisis: the lack of payment power in USA. But if you run a debt organization, you better have good figures, otherwise the lenders will walk away.

Inside trading: The Open market Committee of the FED can do anything with any amount of money. Here is where the cartel goes bad. Her actions are only know by her shareholders and give them many chances for inside knowledge based trading with huge profits on the cost of the other market parties. In 1988 a second similar unit is created by President Reagan his Executive Order 12631 as response the Black Monday event of October 19, 1987. It's called the Working Group on Financial Markets (since an article in The Washington Post also named The Plunge Protection Team). A unit of the Treasury, the Federal Reserve System, the Securities and Exchange Commission and the Commodity Futures Trading Commission. Capable to intervene with unlimited financial

power into markets. This is not some smart CEO who uses inside information on small scale, this about major powers who decided that the market must move in a direction, giving all the parties involved very accurate inside information to profit from about any other market party or any individual.

Weak leadership: There is certainly a lack of wise leadership in governmental, energy corporations and financial corporations. Maybe an example says more than anything else. In Holland we have 1) a Minister of Treasury who claims that the credit and oil crisis will have no impact at all on the national economy and therefore on the governmental finance, 2) a Minister of Economy who time after time say there is no energy problem, that there is oil/energy enough (even after the CEOs of Shell, Total, etc already have stated that the times of cheap and abundant oil are over), 3) a PM who worships Mr. Bush so openly, that it is even embarrassing for even the PM during his visit supporting media. This leaves Holland with 1) severe future financial problems, 2) severe future energy problems and 3) severe future disturbed geopolitical relations. quite a team that deepens the future problems of Holland in turbulent times completely necessary by a lack of analysis, vision, policies and leadership. Major oil corporations are an other example of weak leadership (also based by no vision and policies). The best thing they can do it splitting themselves in functional (and even maybe national) units. The shareholders will get a 200% increased value. The split-up of Standard Oil in 1911 has showed that separate units have more value, produce more profits and function much more better. The boards of the major oil corporations are trapped in their past. All the major oil corporations are peaked already in production. They just maintaining the market position as long as this will go (yet an other 10 years, of they doesn't face new governmental seizers of the their investments). For example Shell her strategy is realizing large technological advanced projects: the state controlled companies really likes Shell's involvement by it's knowledge, experience, capacity and capital. But as soon the money starts rolling they will we cut off anywhere the can be cut off or/and face total new taxes. Every nation does this. Even Canada has installed a water tax and tapping this way the windfall profits of the tarsand companies. The big and strong ones of yesterday are the big and vulnerable ones of tomorrow. Splitting up will give 10 till 100 new strong companies out of one retiring mother company, which these days spend a lot of their windfall profits in purchasing their own stocks for the sake of the bonus of the CEO and his team. The by split-up created more vital daughters will also contain new energy companies. The best way to grow is to have young strong and independent and focused children. Paulson (Secretary of State of the US) tries to fix the leaks in the system, but he is just/only putting some buckets of water on a huge fire. Strong leadership in the US would stop to act if there was a problem in some rooms and start saying that the house is in fire. That's the situation, not less, not more. Calling/naming the things as they are is the first step in strong leadership.

Weak journalism: There are not many Lou Grants (an old US/LA originated TV series about a city newspaper) and not many Bob Woodwards (the Watergate discoverer) left in de media industry: this league is retired: we've got in return some weak babyboomers with less strong backs. The babyboomers have taken the seats of the old generation and enjoying everything the earlier protest against. Protest seems mainly based on 'we want to occupy your seats'. The babyboomers has done less good as the generation they protest against. Spoiled till their bones. Today's journalism is married with the powers they must question. Journalists with mortgages and sensible for the favours that powers sometimes distributed. Journalists that by their partners are forces to sleep on the couch when they write a story that could be danger the mortgage payments in any way. A journalist with a mortgage is a journalist with an operational/functional handicap. Less

journalist dig anymore for the real stories, just write/publish what spokesmen tell. Embedded journalism is a major threat for objective information. Embedded journalism is no journalism at all, but just paid and controlled propaganda. States that needs propaganda are often not the good states with the good functioning models, otherwise they don't need propaganda. Research/opinion diversity is the well balanced pillar/motor of open well working productive societies and economies. The more opinion colours the more economic sustainable strength. Where are the journalists who reports on the Credit Crisis (and its effects), the Energy Crisis (and its effects), the Water Crisis (and its effects).

Absent opposition: People get the government/press the deserve/choose. From economic perspective: There is currently just no market for intelligent independent leadership and journalism. Busy with consuming we have not ideals, principles and drives. They opposition is on holiday. But will return when things goes bad. Consumerism has many followers, but they are zero loyal. If due to the Credit Crisis, the Energy Crisis and the Water Crisis purchase power vanish complete all the supporters of consumerism will find a new ideological home. Governments will face than severe oppositions. Opposition is like energy conservation: only market factors are the real drives behind it: there's no much ideology involved in both forces: it's all (and that's ok) about the money. The market situation will create oppositions in size and intensity the current generation of leaders can not handle. When people are forced to stop consumerism and get less and less purchasing power by uncompensated price increasing, they got really powered to choose instant the side of the opposition leaders. And if these opposition leaders not perform (in the future difficult situation) people will opposite the opposition leaders. Politicians who inform openly had the best chances to survive these economic storms. Politicians with no good plan/response to this new situation will find themselves very short in office. If people has bread and games they don't opposite. But take this two away of them and the leading officials are in deep trouble. Even Caesar understood that 2000 years ago. And the party is over (Heinberg) and opposition will grow from absent to overwhelming when the new economic reality will hit the markets (as in jobs, incomes, payment power and purchase power). In summer warmth there is no opposition: everybody enjoys the sun. In winter cold there will be opposition more than any leading party can handle. Than each nation needs a Thatcher who was able to canalize rough opposition to productive new situations building/supporting power.

Headwinds

Bank deficits
Corporate deficits
Energy deficits
Policy deficits
Trade deficits
State deficits
Currency deficits

Bank deficits: The banking industry is on dead row, not some of them, all of them, if they not will knocked down by debt deficitsthe US debt exposure, they will go knocked out in the secondary blast caused by economic decline as result of the general economic decline as effect of the Credit Crisis and the Energy Crisis. All loans (mortgages, install base, consumer credit, credit cards, corporate loans and governmental loans) are based on the 'tomorrow is better' concept: the thought that the economy tomorrow is even better than today. Build on the foundation called the concept of endless economic growth. This has gone well till four things happens simultaneous and enforced each other impact: 1) the house price went over its top (the reality that there are limits on what debts people can afford to pay -even low- interest over became clear, something the banking industry was forgotten), 2) mortgage structures with idiotic characteristics (high interest increase, that only could be settled by refinancing) where put in place and came to the surface (and as result of that they could not be fixed anymore by refinance against higher market value, as there was no market value increase any more) 3) energy and resources prices went up in a nation with the highest miles per inhabitant per year and the most square house meter per inhabitant (leaving people with less payment power and purchase power) and 4) the economy slowed down (as there is an end on artificial economic 'growth') and started to decline by less corporate turnovers/profits plus started to bleed jobs. The whole banking industry was based on a never ending dream concept. Never in history has such a stupid crowd of 'professionals' in only 20 years time totally wrecked a system and got bonused by it (the more they wrecked it, the higher their bonus was, than responsibility and alter ego's get anaesthetized very quick/easily). They not only wrecked their own banks (as in: their own jobs), they also wrecked both the financial system (as in: financial stability and future/pension savings) and the state budgets (who must fill the gaps that are caused by lower tax incomes and by the huge figures and the increasing interest rates of it also will come into problems with funding that). The problems are relatively simple: 1) each economy cycles each 7 years (even the ancient Egyptian economy did), people has lend themselves to two economic down cycles (instead of just equals expending with the income steam), prosperity has gone by that to very high levels: prosperity has grown further even during the economic cycle down times, bypassing/erasing the economic cycle down time is also missing economic direction adjustment and is also stretching economic flexibility. The banks that are effected (as in: the US banks and the financials that have $ based assets) are not solvable anymore. They're on the FED/ECB capital drip right now, just to stay solvable for the moment. Everybody is hoping against all odd that the market will go to 'normal' (as in: trees that even will grow beyond heaven). All $ based assets are stressed. The credits are overdone, not in relation with payment powers. This overstretchiness (together with / enforced by the Energy Crisis) first has caused a structural lack of payment power on interests, after that the foreclosures has wrecked (and is still wrecking) the house prices. Interests and loans that not been paid/repaid causes interbanking troubles. Some banks (the technically bankrupted ones) their credit lines by other banks (the healthy ones). The healthy ones threatens continuously no long to fulfill incoming transfers of the bad

ones. Both the bad ones and the healthy ones are in stress. Beautiful profit figures and balance sheets doesn't say anything in the financial world. Interbanking (un)balances that are signs of the real banking figures. The bad ones tries to stay alive on the continuous capital injections of the FED/ECB. This situation can not go further much more longer. This as the problems are not solved by it, but just giving clear the air of the dust time. The injections only have showed that markets can not be influenced any more: they (and there attached problems) have become to big. Almost all financials are technical bankrupt, they just stay alive on 1) cooked books and 2) money injections by FED/ECB. Real valuation of the assets of the financials is not a possible solution, than we will see in reality (as in true figures) that the financial system is broke. So all financial value their stressed assets still on 100% (house prices will be 50% of that, no question about it with so many bankowned objects, so they have 50% air in the real estate part of their balance sheets), their CDO assets on 100% (sales of 8% has been done, so they have 92% air in the CDO part of their balance sheets). Claims based on CDO insurances and CDS promises are pushed as much as possible into the future. Defaulting of these central role parties will take the fake AAA insurance roof of the assets of all financials, all banks would have instant TierOne ratio problems, so the whole financial industry has become a house of cards. Everything is empty, but must still stand, otherwise the system collapse. It's total outrages that both the Presidential Candidates are allowed by both the business society, as by the civilians not to speak out on the Credit Crisis. Or they don't get it, or they really get it and therefore has joint the hoping against all odds club of the financial world. The process that's happening right now is that financials bring used and broken cars (worst collaterals the could find) to the central banks and get cash for it as the cars are new, unused, actual expensive models. The ECB has said that they don't will accept dirty collaterals anymore. Everybody brought their CDOs (market value: 8%) to the central banks and get 100% cash for it. Such total unbelievable nonsense only buys time for everybody to come with a good solution. But as the value of the assets (as in: the payment power) has gone down there is no 'happy days are back again' solution to expect. So there must be 1) a collapse or 2) a bailout. It not will be the collapse, as we don't like the hard/cleaning facet of capitalism. This weakness had caused the problems: we've tried to bridge the 7 years less growth part after the 7 years growth part in the economic cycle by credit overstretchiness. This lack of stabilizing growth and not extention focused winter growth is now the reason our economic tree can break in this severe storm (extra heavy due pushing problems to the future, till that is not more possible, like we experience now). It will be a bailout. All banks will be able to bring any asset they don't like to bailout fund (Super SIV), exchanging them for nominal/initial value. We all are gone pay the effects caused by credit overstretchiness caused by the bonuses of the bankers. Any other solution will lead to economic/governmental collapse. The value of the dollar will just be watered with all these huge 'assets'. The super SIV will get more than $ 100 trillion (6 times the GDP of the US in 2007) in liabilities (the current US governmental debt is $ 9.5 trillion and the current US governmental liabilities are $ 46.5 trillion according the calculations of the GAO. Any currency with a huge dollar exposure (Euro, Yen and Renminbi) will be soaked down with the dollar. The recent value rise of the $ is only caused by large Euro/Yen sales and $ purchases of Europe and Japan (as the 3 nations has agreed March 13, 2008 to do when the $ would slide to $ 1.60). Banks only can be saved by a bailout, the other option is 100% sure chaos, a bank bailout has at least a lower chaos chance percentage forecast. And there is more bad weather in sight. The Energy Crisis will reshuffle the economy once again, going van international/national to local/regional (due to energy prices) with all the capital write down attached to it. This second reshuffling wave will be the end for the bank industry as we now it. The new bank brand are joint structures of the new local players. Global banking was based on an economic model that was has it foundations in cheap oil. As cheap oil has gone the foundations crack and the building based on it will collapse. The bailout questions are: Will we bailout all banks (deposits? bondowners? shareholders?)

due the Credit Crisis, or will we draw lines? Will we bailout other industries (airlines? carmakers? powerplants?) due the Energy Crisis, or will we draw lines? Where is the momentum that foreign investments stops in this bailout schedule? Where is the momentum that foreign investments stop if we don't perform bailouts? Has the US administration give additional guarantees to the Chinese investments in Fannie and Freddie (are the liabilities of the US administration much more higher than we know due to such type of guarantees (Paulson should know)? Can we survive without foreign investments? What will the inflation rate than become (as governments spend more than they earn)? Is there one way or the other a crisis due anyway? Bailouts must be accompanied with a debt to products plan (foreign debts can be exchanged for products/services/export) than the US has a change to restore/recover from its debt. This is also better for the world, as a collapse of the US also will mean a collapse of Europe, Japan and Federal China. Lehman Brother (mega player in CDOs, with a current value of 8 cent on the dollar, so only 8% of the nominal value) has filled Chapter 11 on September 14, 2008, as nobody, even with an open discount window of the FED for financing the take over was interested. Fannie and Freddie are seized by the government on September 7, 2008 and place under an other GSE called the Federal Housing Finance Agency (FHFA). House prices = payment power = real economy. As the real economy gas gone worse, the payment power is gone and house prices will tumble down to real economy attached prices. There a lot more deficit bank trouble on the way, just because payment power only get worse instead of better. The Credit Crisis started in the weak areas, but has lifted from subprime, to near prime and reaches prime (as more and more jobs are lost). The Credit Crisis is a direct effect of the Boskin Committee effects on economic statistics putting in place during the Clinton Administration. The result of this pimped statistics is ever government since than can report 'paper reality' economic improvement, as first the US citizens dive into debt and when this hit the bottom (payment power no longer could be provided by renewing loans to higher levels based on the artificial high house price), US citizens start to default on their payment, just because the payment power wasn't really there. The government now has put Fannie en Freddie on 'budget'. If the house price decline will be stopped by that. The lying statistics has really effected our acceptance of reality. Paulson still thinks that this a fire he can control with some buckets of water. Lying statistics will be seen in the history books as the main cause of the Credit Crisis. The fact that these low inflation figures of the BLS (Bureau of Labor Statistics) are convenient for lowering governmental expenses on Social Security and Retirement Plans is an other issue, that's a (certainly huge) social issue this report doesn't address which has saved the government a lot of money, and brought the people concerning into problem as they has to deal with the real inflation. The fact that the worst performing banks gets more loans of the FED (moral hazard) is not true. But that the banks that are owned by the shareholders of the FED gets always/unlimited what they want, the other banks don't, is certainly truth. This is the most severe downsized of the cartel facet of the FED.

Corporate deficits: As cost of energy/materials rise, credit gets expensive and hard to get and markets slow down and economies goes into stagflation based recession. Business will enter severe weather. Economic models (now strong international/national/regional) will change. The local economy will be king as the price of transport and mobility (due to strong rising energy prices) will make the products/services of those who need those two not very attractive. Transport and mobility are in times of expensive energy contra productive to prosperity. This not avoidable (as cheap oil is over) huge change/reshuffle of the economy will cause a tsunami of corporate bankruptcies. Companies will bleed jobs and debts. Only local player and global/national/regional players that has adapted a new short distance model will survive. Nike still can exist in the post cheap oil era. The still we design and brand. But their production process will be decentralized. This is just

an example. Only companies that adjust themselves to the expensive energy situation will be survive. And yes, it's difficult to make major write downs in times of restructuration in this process. Both are contrary, but both are needed. The Credit Crisis (credit overstretchiness in times of tailwind), makes it companies/corporations even more difficult to realize this cost prices driven change in economic model.

Energy deficits: The PeakOil guys are not longer considered as weird negative scientists with a wealth irritation. It's too stupid for words that we just starting to give them recently the attention they should have deserved almost half a century ago already, but just only a year ago when market prices start doubling each year and everybody suddenly waked up. The wake-up call of the US production peak in 1970/1971 (as came clear in the years in statistical data after that date) and the wake-up call of the OPEC boycott of the US, Holland and Israel in 1973 doesn't awake us either, we even get deeper asleep afterwards. We increased non-OPEC production in times that oil prices were low due to the US/SA deal, and just tap them to and even over their peak the last 20 years in times of lower than low market prices. We're smart, very smart, even brilliant (we thought). Now we must go on the table with OPEC again without any negotiation backup and can buy oil for 15 times the price we have sold it the last 20 years. And in the meantime the world fertilizer industry has (due its gas intensively) in absolute market share/volume almost completely moved to the Persian Gulf: so also our food system has become an OPEC relation issue. By PeakOil and the food chain facet of it the Green Revolution can end very easily in a Green Implosion: just take out the fertilizer and its production implodes within a year to less than 50% levels. So much for the strategic sophisticated very intellectual superior Western World. The reality is that we have squander both our transition time and reserves, due some unrealistic believe in the endless of finite resources, or in just a rude 'let the next generation fix it themselves' attitude that just has taken an earlier flight to our lives so we (and not our children) must deal with it. We're so stupid that we even can see ourselves how stupid we have been. This dumb kind of behaviour/wisdom only appears in cartoons. The results are there: An economic system that is based on cheap energy and therefore on the edge of breakdown when energy prices go higher (and they will) and that will collapse finally if there occur real physical power/gas/fuel shortages (and they will come). Even very conservative institutions (like for example the by the Dutch Administration for her energy policy determination/development installed Energieraad in Holland) say this will happen even as soon as in 2010. In natural gas is this unseen before: putting pressure again on the infrastructure after a blackout would have severe consequence. In more and more countries in the world 24/7 power supply can not taken for granted. China has severe power problems and has closed down mega users like aluminium factories. Energy that becomes more and more expensive and sometimes is not available and is per definition final. That's our future perspective. With al the attached damage in economic decline and economic shocks by blackouts. It could been different. If we saw finite as finite (as in: just temperately) and not as never ending, if we loved our kids as much as we say we do (than we had acted differently), if we developed energy knowledge (not 1% of the governmental subsidies is used for researching the main source/power of our prosperity) and if we had saved the huge non-OPEC resources (Prudhoe Bay, Cantarell and North Sea) we have found in the '70ties for the time when we really needed them. The whole energy story is a huge illustration of governments that only focus on today (short horizon), people who are inebriated by prosperity and scientists who has lost their independency and use more energy in defending their castles of budgets and arrogance, rather to dig in new science. The economy can not be held accountable: they have the 'daily store to take care for', but governments and certainly scientists a lot. We have waste decades (and if we take Tesla as reference we even waste a full one 100 years) and now we must pay for it. Literally. High prices that drains ours prosperity. Economic

damage by blackouts that kicks our prosperity to lower levels. We start to realize that every thing we do is based in cheap energy and that cheap energy has left us. What is our future based on current perspectives? Everything that uses a lot of energy will become very expensive (or must we therefore just say: everything will become expensive?). Economies will shrink/decline. Unemployment will grow, feeding unemployment check based burdens instead of wages based boost on the economy. The economy will shrink again. Social unrest will explode. Car driving and airplane flying will become too expensive. Globalization will stop, the cheap products out China will be very expensive. Doing laundry will become expensive. Showering will become very expensive and a luxury. Food will take half of our budgets again. It simple: when you literally unplug or pinch off an cheap energy driven economy, everything that uses cheap energy (as in: every product and every service) will move in the red zone. Commuting to our jobs will take more than 50% of our wages. And as we can spend each dollar only once we need 2 more jobs (that aren't available and can't fit in one day) to maintain our current life style. The Energy Crisis will lead to an other type of economy. As distances are expensive, more and more facets of live will happen local. The Energy Crisis equals localization: as localization gives the highest prosperity output per used kWh or Joule or energy use. Live is gone change. Some for the better, some for the bad. And the problem is: we can't believe it and has put our minds in denial. But it's so simple: Our economy/lifestyle is based on cheap energy and cheap energy has left us without even saying goodbye. Every facet of live/economy will be changed. And everybody with some brain can analyse this by her/his self. It's no rocket science. It's just not being ready to give it a thought. We have choose not to mediate with reality, but let reality confront us (Kunstler). Each physicist could tell you that the impact of a collision is based on speed (high), mass (high) and crumple zone (time). We robed ourselves from our own transition time and possibilities by just being dumb and put our energy in denial instead of changes. We could save a lot of our prosperity. But we rather live life now to the max. We're stupid. Against our knowledge and against any science or odds. We start doing something is we realize that not our children but we ourselves are the ones that will pay the bill in the next years. Egoism has been and is the best economic and societal changing power. The economy/society needs a lot of changing power the next years. Maybe than we can preserve as much prosperity as possible under the circumstance. Once again: the foundation under our economic system (cheap energy) has gone. This is not so hard to understand, but certainly very hard to accept. And the people of the Middle East? They just want some respect for their culture, heritage and religion. We don't understand that, even not today. To make a long story short: No energy: no economy. Or we must search for ways / design a low energy still prosperous economy.

Policy deficits: Leaders are not many leaders left, but just crowds of followers. Followers that only read the newspapers of today, and not knowing history before they come into office and/or studying the future while they are in office. Just servicing the daily store operation is something else than steering a chain of outlets into the future. Using history only in defending a laissez fair attitude concerning the future. No high altitude in or masters of history, present and future. Jet they're intelligent people: if they change their focus (as in: rise in their altitude) they become the leaders we need. It's certainly not morality issue (although there exceptions that underlines the rule). It's just a short term focus issue. Concerning the Credit Crisis, the Energy Crisis and the Water Crisis (and all the consequential crises -like the Food Crisis- caused by these severe situations), any short term focus doesn't fix or answer these huge problems. A historical example? The big mistake all the NATO alliances had made is to walk away from the Cold War scene after the USSR collapsed, leaving Gorbashev with nothing (as in: no chance) for internal/domestic politics. In Russia there is a huge respect for Reagan and his 'driving the USSR to bankruptcy' politics. His international economic war strategy was based on 4

tactics: 1) Paying the Saudis and Iran in security and weapons to oversupply the world market with oil and this way rob the USSR of its export income. Oil was accountable for 70% of the foreign currencies earnings of the USSR in the 80ties, and the cheap/easy production in the west of the USSR must also be replaced by the more difficult/expensive Siberian production extension. This low oil price on the global market robed the USSR of her purchase power needed for buying foreign commodities and foreign innovations. 2) Going 'closed short' (offering and purchasing the same amount) on a lower value on the ruble on future positions (only costing some banking fees and at the end when the ruble crashed gave a huge profit on these large positions). 3) Financing the Afghan Resistance against the USSR: just a little money did a lot damage for the USSR troops in Afghanistan (it's therefore a miracle that the US has invade Afghanistan: they could now that the geology of the country made it impossible to ever win a war there). 4) Pushing the weapon run in a more technological direction, a direction the USSR could not perform in as digitalisation wave of the 80ties has passed the USSR economy. All these four tactics of the USA back the 80ties are in Russia seen as huge strategically acts of the Reagan Administration. But Russia has not all these four forgotten, nor the complete walk away of NATO from the scene after the collapse. This complete walk away from the collapse has fuelled once again the Russian relatively narrowed world view that Russia has no real friends in the global community. Reagan and Thatcher had bad long term geopolitics understanding successors. In the eyes of most Russians, Russia has only a few (as in: zero) true friends. This walk away of the collapsing scene of the NATO and its countries is the biggest mistake in modern history, caused by stupid generals in the armies who took the wrong way (finding new military markets) instead of cleaning up the mess of the collapse and build sustainable relations with the changed former enemy. Politicians are to blame that they not replaced/retired the complete overhead of any army in the world (as the issue they have lived / where trained for / where focused on disappears by the bankruptcy of the enemy. New (to the new reality adjusted/focused) military leaders has helped Russia the way the USA has helped Europe and Japan after WW II and open that way a huge market and tight/real friendship to an administration that controlled a huge reservoir of reserves. US Aid had must gone into Russia everywhere the Russian Administration could/should demand for it. Instead of doing that the US continued with messing around (as in: sleeping around with any involved party that wants to sleep in exchange for something) in the Middle East (and thereby giving nobody real satisfaction and just multiplying uncontrollable turbulence). This by both Bush Senior and Clinton made policy error has damaged the interests of the US severely for decades. The post WWII behaviour of the US has been the power behind the of the US in the second half of the 20th century, so they could know the benefits of it. It would solved the problems on both sites (changing economies on both sides from Cold War to Warm Cooperation). Every Russian was (and still is) an admirer or the US and here economic success in the 20th century, but also every Russian also thinks/says: 'you can't trust them very well, as they're apparently not being able anymore in thinking in mutual interest models'. Today Russia has no foreign debts, and has increased their GDP 7 times since 1990. Who's strong and who's weak today? Russia will certainly harm the USA with the same two weapons as the USA has harmed them: oil prices and currency manipulations. Russia will do everything to increase the price of oil, like the US has done to lower the price of oil artificial. They will it simple to by going 'closed long' (both future offering and future purchasing) on oil. It only costs them some Nymex fees and it will push the future (and thereby current) oil prices severe higher. This high oil prices are certainly in Russia her economic and political benefit and will also weaken the US global economic position. Russia will certainly try to manipulate sometime in thee future the value of the US dollar down by the same game of going double short in a weak dollar moment, like the US has gone double short on the ruble in the end of the '80ties and wreck the ruble to zero value by that. The US were strong. Real strong. The US had friends. Real friends. But every strong man gets old and than needs his true friends.

Many parts of the world are (or have been?) good friends of the USA. Even of a level that if the USA stepped into war, they followed the US in it (that only does good friends). This credit is over, it's eroded the last 20 years, the brand USA is severely damaged by lack of long term politic vision and national focused egoism. The effect of the Credit Crisis will undermine the image of the US in the world dramatically. An economic heavy weight as Greenspan will be go into history as a low altitude and thereby single facet focused economist which guided the US financial system by his short sightedness into major defaulting. The FED is just a trivial financial sector interest driven body that was able to convince a weak president that the money presses where in better hands by the banks than by the democratic government. We have seen the result and the collapse of the financial world will be the abolishing of the FED. Money creating will go back to democratic steered governments and backed by national assets and secured by a financial 'constitution'. A strict financial constitution was and is the right answer for limiting the money hunger of governments. Money creating can't be done by just some bankers without any democratic government based control and financial constitution secured protection. Anno 2008 there is no other conclusion possible. Both the governments and the banks must be limited in money creation. This also reduce the appetite for war in each nation: seeking wars on credit is much more easier than seeking wars out of the yearly budgets. Both governments and banks should not have the possibility to blow-up sustainable wealth growth by irresponsible short term focused, economic total dump behaviour. The world needs politicians. Real politicians. Builders of real sustainable prosperity. Times with major headwinds will give them. The summer sailors are recognised by the first storm and leave the ship by the first opportunity to do so (if not thrown from the ship earlier). The whole Energy Crisis has one huge blank spot (or must we say: main origin): politicians who understand the problem and start addressing it. Politicians are the major absent group in the whole energy discussion. Taking time to think about the consequences take courage and maybe that's right the problem: politicians and courage are maybe two different worlds who only meet each other occasionnally. There is no politic recognition on the Energy Crisis, without that there will be no answer. Only recognised problems will gets answers. An other huge mistake of the politicians of the Western World is that they haven't addressed the energy problem back in the '70ties and 80ties of the 20th century. One lost chance that will have a huge price in the near future. The politicians of the '70ties and '80ties will not be honoured for their energy visions. The non OPEC oil is just used in 30 years, without addressing any solution. Now the energy problem hits hard without any impact softening own energy reserves. Just based on want to believe emotion believing that oil was an infinitival resource. Even today the Minister of Economic Affairs in Holland believes in this fairytale. We got the leader we deserve, because we have chosen them and let them wreck our future without any comment of us. Situation anno 2008: Saving for our retirement by financials who gambled and bonused with our retirement savings, letting our saved pension money gets less valuation each year by inflation, guided by politicians with a horizon of maximum 4 years. Trusting financials and governments in taking care of your financial or actual future is like naming a robber head of security: just not a wise thing to do: they have statistics against them. Hello future, we are prepared for you. Hello children, we felt we doesn't have enough so we've taken your future in terms of creating debts and use up all the cheap available resources. Please pay our debts and pay also huge energy/resources prices (and our retirement and health costs) and have a happy life: we care very much for you and really love you. Don't doubt this please, we mend everything we do the right way. Conclusion: we don't get it and so our politicians don't get it. We're not better then them, we're made of wood of exactly the same tree. Politics is just economy/society with a 4 year delay. We need comprehensive orientated, very smart people in politics, that are able to steer us through this rough water. And maybe, maybe we must concluded that the answer is not in politics or politicians, but that they are part of the problem. And let's hope that if there will be new leaders that

they will be democratic and that they know when to stop and that they know the difference between the market (driving force) and government (steering force). A mix-up of these two (one way or the other) leads to huge economic damage. Can government do something? On the Credit Crisis? This will be difficult, throwing money to it, will not end the fire: there is the fire too big for. On the Energy Crisis? Yes, certainly. Germany taxes carbon energy and (very important and very difficult for politicians) don't put this tax income into the general budget, but use it 100% to subsidize renewable energy with it. The effect is that Germany is one of the global leading nations on renewable energy which also support their export income very much. But the main task of governments is just proclaiming the problem. People and companies are capable more than any governmental structure to address the huge problem/challenge. Till now we have politicians who (based on 'photo's' of the past) tell us that there is no problem. A good start will be just fire these problem worsening 'leaders'. We need politicians also for building good (based on mutual interest) foreign relations. The Asian Nations understand this very much, the imperialistic past of Europe and the US works internally (as in: poisoning our own perception of the actual reality) against us. Asian Nations don't preach to, don't humiliate and don't invade foreign nations. They offer real mutual cooperation possibilities. The energy/resources rich/surplus countries will survive very well. The energy/resources poor/deficit countries will have a mixed image: the bilateral co-operators will survive also. The nations of Asia understand this very well. They go around the world and offer energy surplus nations real mutual development deals, based on knowledge sharing, mutual trade, political support, building real friendship. It's also real friendship because both parties doesn't feel very much accepted by the western nations. The US and the EU could learn a lot and should study the energy deals of the Asian nations. The turtles (slow movers) will loose any energy 'game'. Neo colonial thinkers and racial thinkers will loose any deal by their haughtiness exposing attitude: these people really don't understand that the market polarity has changed and the other parties are now in the drivers seat. The on single side interest thinking 'users', aggressors and not real in mutual interest thinking 'friends' will be the losers of the 21st century. Having no energy/resources demands smart foreign policy in a completely changed world to survive. Sleeping around, insulting, invading are dead end streets in foreign politics in an energy/resources tide global future politic/economic world. Information and smart geopolitics are the two major tools for politicians. Forget legislation, taxation and subsidizing: too late for these 3 tools: the market situation has taken already the financial/economic lead in this. The time for vision on preventing is already over, the time for damage control has yet arrived. Politicians should inform their nations and cooperate bilateral international. Supra national structures can not deal with this huge problems (as even less effective than national structures). In energy politics supranational bodies worsen the impact by delay and muscle talks. National governments will choose 100% for a bilateral approach. The best example of the total useless of a supra national body and energy politics is the case 'Natural Gas and the EU'. The EU didn't want to be fully dependent on Russia for natural gas. Some EU officials analyzed 3 potential comparative suppliers and act not or slower than slow. Gazprom has acquired all three comparative suppliers by good joint venture models. The EU has proven not being able to even 'turn a page' in the energy book. Russia is smart. While the US has extent their huge governmental sponsored capital wasting facilities (you can't quite call Fannie Mae and Freddie Mac enterprises), Russia has build huge governmental sponsored capital earning facilities (Gazprom and Rosneft). Tell me, who's smarter and has more future? Trade, deals and earnings can't be done by government officials, making profitable deals is not in the 'genes' of officials, so Russia has annexed for exact 51% back the under President Jeltsin for a nickel privatized former energy departments by force/deals and let businessmen do the profit making deals. Therefore the EU will loose any energy game of Russia: slow formal more talking than acting officials against governmental backed smart businessmen. The odds are simple. The result of the Energy

Crisis will be advanced localization of the economies. Leaving less budget and importance for national/federal governments. We don't realize this yet, so we have a polity deficit. And if we have knowledge and we have a policy (like invading Afghanistan, Iraq, Iran and Venezuela) we must ask ourselves now and than 'do we still have the right sustainable policy that insures the future of us the next 20 years?'.

Trade deficits: As we forgot to produce (we had in our perception 'lower' nations to do this for us: the neo-colonial root/cause of our economic decline) and we get obsessed by consumption and valuated production less and less our trade deficits has grown and grown to never seen levels. Own sustainable energy production was not something we not achieved as foreign energy was very cheap and the future wasn't now and we were too busy with consuming. Recycling of materials and water was also something that was considered non economic. Then energy, water, food and resources prices gets elevated to never seen levels. The small gap in our economic ship widens with a speed that takes our breath away. Foreign nations tax (yes, you can call it safe a voluntary paid tax!) our economies will a huge success due our oil addiction. Caused by our short sighted stupidity and our energy/carbon addiction the biggest transfer or wealth ever is happening in just one or two dacades. We still believe in the 'knowledge based economies' bogus our imperialistic and colonial genes feed us and we're really think we're superior, smarter than any one with a colour. Meanwhile the odds are against us. Don't changing is paying. Not a little, just much. T. Boone Pickens is the US the major voice concerning this development. Every dollar earned in the USA is taxed by the Middle East now 10%, but soon 20% or even 40% (and as economies shrinks by energy payment drains, this even could come in higher numbers). There are not enough weapon demand in the world to compensate this, the weapon sales already weren't able to fill this gap, otherwise we would not have the current gap. High energy based economies turn their selves over into economic slavery of the energy surplus nations. So much for the American Dream (who already by the Credit Crisis has turned into an American Nightmare -of course same sized as the dream, but now opposite-). High energy economies get drowned till their departial. The only economic concept that is sustainable in times of expensive energy is a low energy design of the economy. Cutting physical movements of products and people as much as possible, leaving maximum purchase power (mixed with price level = wealth) for other things (= wealth). Enhanced local economies are the only economies that survive an era of high energy prices. Concerning the impact of the Energy Crisis there a lot of 'wishful thinking', the Trade Deficit brings us all back to reality. It's amazing that only 0.01% of the people with brains and education has thought about the impact of rising energy costs on our economies. Our whole system is based on cheap energy and we just say: 'yes, the main column can defaulted, the roof will stand'. Having brains seems only have the effect to make up make-believes. Just plain ordinary wisdom can tell everyone that if that what you use for everything gets more expensive, everything gets more expensive and the economic growth can catch up with this and economic decline will finds it way, with economies that bleeding jobs and international purchase power. The only good thing on high energy prices is that it brings the production jobs back home: Production in China will become too expensive by the energy costs of sea transport of it and due the fact that not energy replaces labour as main cost facet. India with it's non physical based export of ICT and callcenter activities will not be effected by this (as their products are digital and has no direct increasing energy cost price facet). Russia, Brazil and India will be the winners of the 21st century. The rest of the nations will just pay them and gets the crumps/surplus of their new realized wealth/energy/food/meat/commodities. The lack of reality sense of economists and politicians is touching, not even childish, just stupid. Even a child understands 1) when sugar gets much more expensive, candy will become more expensive and 2) the fact that a dollar only can be spend once, so if candy gets more expensive there is less

candy to buy for one dollar. So simple is it. Replace sugar for energy and the rest is the same. The economic candy becomes in very high speed prohibitive and after the lost of economic candy purchase power, we will loss debt payment power (sorry, we lost that before we stopped to buy candy) and even food purchase power. The old system based on cheap energy doesn't perform well in times of expensive energy. How hard is can be to get this? Still the common believe is that energy prices rises and nothing will happen. This says enough over the quality of our economic education. The show go on even after the power is switched off. Or are we just blinded by consumption addiction that narrowed our feeling for changing realities? We're even chicken in reality observation, the trade deficit number will not wake us, but the effects of the trade deficit number will cruelly awake us. Less to spend and even shortages will bring us back in touch with reality.

State deficits: As economies slow down and go in decline governments starts to suffer. Caught by the grow religion they all spend to the max (it was so 'bad' so they must spend a lot to make things 'better'). All governments will face at least four major developments. 1) they will run out of money (due less taxation in smaller economies and increasing cost of their debts by high interest rates), 2) they run out of importance (due the Energy Crisis local will become much more important than national as distances will shorten severely), 3) they will receive a lot of internal resistance/turbulence (due the Credit Crisis, the Energy Crisis, the Water Crisis and the 5 attached/consequential crises that follow these 3 initial crises), 4) they will be face a collapse of their currency. China faces the same problems as the US and the EU and will get major writedowns on their US financial assets. The federal structure of Chinese government faces the same destiny as the federal structures in the US, the EU and probability also India: when central governments just become a heavy cost burden and give nothing or too little in return their future is very much uncertain. Jim Rogers is wrong about China: China is not the winner of the 21st century. Jim Rogers sees the basic developments right (Credit Crisis, Energy Crisis and Water Crisis), but doesn't draw the consequences from these three. Saying that oil will become priceless, but still buying airlines and airports. Contrary investment behaviour and advice. If one nation will be hit by the Credit Crisis, the Energy Crisis and the Water Crisis, it will be China. Federal States has not really a future. Local will be leading. National government will service local governments the way the local governments demands and local governments will pay as much/little as they like for this services. Supra national governmental bodies are dinosaurs in times of an Energy Crisis: they will have no function at all and nobody will be willing to pay their budgets anymore.

Currency deficits: The FED is a not democratic ruled or controlled organization, that is certainly acting a major role in the public area, who appoints it's own directors. Only the Chairman of the Board of the FED is appointed by the government. The FED is the organization who controls money supply of the dollar and this way is a major economic actor. In 1979 the economic situation was weak and inflation high due the (it sounds familiar) the than occurring (than OPEC, not supply/demand based) Energy Crisis and (than unwise oversupply of petrodollars by banks to Poland, Turkey, Brazil, etc. based) Credit Crisis. Volcker took office as Chairman of the Board of the FED in 1979 and knows what he has to do: shortening money supply by increasing interest rates, giving a few nasty years, but put the economy back on the rail / made a sick economy healthy, pushes a the economy from consuming on debt to producing for assets. In 1987 Greenspan took office and managed to stay in office till 2006 (a much too long period for one man, with one policy, causing always too long persistent uni-directional effects). Greenspan found money supply not leading, but interest rates. In Joe Doo language: let's leave the sustainable growth path based on production and created a bubble based on credit. As in: start the dollar presses, if we print enough the interest always be low. As

in: if we drive hard, it's sure we not having an accident at this very moment: stability the Greenspan way. Greenspan his legacy is that he blow up the credit market by overstretchiness, caused the housing bubble, pushed the economy of the producing for asset growth road into the consumption on cheap credit parking lane and facilitate governmental overspending. He was no equal party for the US Administration the last years of his office. His successor Bernanke is hopeless, this ship will not stay flooding: he will be the last president of the FED, because the mess made by Greenspan is not solvable, it's has grown too big. As always: it takes a war to wreck healthy financial situation. And still we admire war as an economic miracle, not calculating all the hidden costs. Warlords and gambles: they are all the same: the pity losers of economy. Greenspan and Mugabe are made out of the same piece of wood: a total disrespect for creating sustainable economic values by actual production. Living for today, like there is no tomorrow. Today we face the consequences of Greenspan's management of the dollar (cheap credit) in a time where also cheap energy has left us. We're facing expensive credit and expensive energy. Cheap credit that pushed not only households in debt, but also the government (governmental debt is never been as high as it was now). Cheap credit that total defocused the American households and American Administration. And as the going get tough (due the fact that cheap energy has left us) the tough gets going double by the fact we don't have reserves to take us through the economic winter the energy situation will give us, nor left us the possibilities of money creation by debt expansion for addressing the energy situation by energy investment. The word Greenspan will considered a curse within two years from now as journalists starts to research how we got into this mess. Knowing that there are such products as adjustable mortgages in the market that only could be paid by refinancing based on (an once again increased) house value and as the guy who controls it, push it even further is as stupid as it is chicken. Greenspan had no back, he was a weak man, with less, less respect for the situation of the future. Something that's unfortunately very common under old global leaders. A governmental installed unit with no governmental control, lead by one man that was too long in service, have wrecked to global economy and blow up the fractional banking system (as in: all financials). Where we are end 2008. The credit expansion bubble has burst. Pension funds will have to tell their customers that unfortunately an economic accident has happened which has consumed their live time savings. House prices will fall severe and adjust to normal levels (normal is based on nation prosperity levels and a 10% interest rate). Households are ruined. Financials daily on each other funerals. Foreign nations don't know how to get out of the dollar as soon as they want. But the show must go on. Fake things are resistant and let the fairytale still continue. The Open Market Committee of the FED, buys with (to nobody accounted) digital dollars stocks and bonds to get the markets moving. It's no more than a show. The OMC buys governmental bonds and misleading this way the market that there is active demand for such investments. An emergency tool (for situations like in the first days after 9/11) has been misused as a daily tool to support the lifetime of an unsustainable bubble for only a few years. Please the President, wreck the nation. This is also the reason why the US administration has agreed with Greenspan's policies. The one hand washed the other. Once again it's proven: joint responsibility is not responsibility at all for anyone: both parties just can blame the other, while they did it together. The dollar is no longer leading. This is not strange. If you want to be the strongest man in the group, you must stay fit, otherwise new kids on the block will get into leading positions. Greenspan and Bush has totally wrecked the future perspectives of the USA. When the dollar goes down, many dollar back currencies will go with it. In the early days, when Americans where still genius, the convince many Central Banks to buy dollars (we from the dollar, advice the dollar). Diversity is not achieved by many currencies and so the fall of the dollar will also be the fall of many other currencies. Currencies should be obliged to disclose their dollar exposure, any currency that doesn't that should not be trusted anymore. Independent thinking actors, we have missed them a lot. Diversity was a curse for many minds (as in:

interest groups). As the dollar falls and the global economy goes down with it (due to major looses everywhere), people will be sick of fake economic growth, growth on credit above real economic earnings based growth will be considered unpopular mumbo-jumbo. People, companies and politicians will long for just one thing: sustainable growth. Not strange as they all just been ripped off of their savings and pension deposits. In 1971 there was also a currency deficit concerning the dollar. Since 1951 the US administration in co-operation with the FED starts to print substantial more dollars than economic growth would/could justify, just to fix trade deficits artificial (and there was an enormous demand for dollars, so the temptation to do this was very appealing). When other nations recognized that and saw there backing decline without having the pleasures of it by themselves, they start to exchange dollars for gold. It's not a pleasure to loose capital in the market, but it's certainly not a pleasure to get robbed by the bank or by the strongest guy in the class. From the gold of the peak in 1949 there was only 22% left in 1971, there was a 'run at the bank' for the last remaining gold. In 1971 the US had a reserve deficit of $56 Billion dollars; it had also depleted almost al non-gold reserves and had only 22% gold coverage of foreign reserves with non coverage for the dollar itself. In short, the dollar was tremendously overvalued with respect to gold, but by the global demand for dollar the US got away with it: being the leading currency has it's benefits, when the US find a dollar strategic partner in the Royal Family of Saudi Arabia, they know that the dollar hegemony with all it's benefits of huge demand for a technically worthless currency would continue for several decades. Saddam his switch to euro's for oil has given him a bad experience. Don't shoot at the hart of someone you can't beat. Iran is experiencing the same pressure as they stop trading oil in dollars and try to convince other oil nations to do so. The dollar is the taxation method the US as empire taxes the world and everybody who attack this free funding of the US printed money debt based consumption, will get severe corrections of the US. It gives the US the possibility to print money with exported (not domestic) inflation. Have less budget limitations by paying the bills with printing the money and get away with it. The dream of each government. The 'run on the bank' end '60ties, begin '70ties forced Nixon unilaterally to cancel the Bretton Woods system and stopped the direct convertibility of the United States dollar to gold (called: closing the gold window). The problem of the '70ties was not so much an Energy Crisis (that was more a geopolitical new kids on the block -read: OPEC is coming also on table of prosperity- issue) although it was the PeakOil event of the (before that) main global supplier, who starts to import oil from 1971 on, but more a Currency Crisis, caused by the 'oeps it's gone, we used it the last 20 years, we did really good things with' attitude of the US Administration that hurt many on the Bretton Woods based national currencies. The amount of gold that's left in the US Bullion Depository in Fort Knox to back the US dollar is still a non disclosed issue. Is their still any gold there, and how much is there still there or is the gold that's mentioned on the FED balance sheets only future based purchased contracts that are backed by dollars again? Most of this gold is 1933 seized against state rate during the Franklin D. Roosevelt Administration in midst of the economic turmoil as there was than. Back to 1971 and Nixon who unilateral cancelled the direct convertibility of the US dollar for gold and the fact that the Bretton Woods nations than take that for granted. The geopolitical setting was back than very different from the geopolitical setting of today. The USA were in the '50ties and '60ties certainly been the economic leading nation of the world and there was also the Cold War issue that straightened the bilateral ties. Both facets are not available today. The Currency Crisis in the '70ties caused by the financial irresponsibility of the several subsequent US administrations is severely forgotten and often not mentioned in describing the problems of the '70ties and '80ties. It was the Cold War, western nations where friend and friend don't talk about mistakes of one of them, and the anti US emotion was by the Vietnam war already at too high levels, so why fuel the fires of the commies? Once again a War (the Vietnam War) wrecked a currency. There was not an actual physical energy crisis, just a mental one ('we're toasted, we need the Arabs and

they know we don't respect them very much'). Of course at the end '70ties there was also the problem of banks that had too much petrodollars as deposits from the new wealth of the Arab Nations (which yet in the '70ties actual being paid for the oil they exported), which the banks has lend nit wisely too bad performing 'emerging' (as in: credit willing, not as in: producing) nations, who even could not pay interests as the credit flow stops. And yes the new FED president was the one who had to hit the brakes of this capital waste. And yes, companies and households paid for it by high interest rates. Never give your wallet to an American, you know what will happen, but we don't like knowing crucial historical data that could prevent new accidents for some unknown reason. The housing bubble is the first time that not the funding of a war, but excessive consumer spending pushed a currency off the cliff. At least we've done the consumer part in peace and enjoyed every minute of it. Unfortunately we are faced with the bill of it. This was nor the planning. We were committed to push the bill to our beloved children which we love so much that we're not satisfied with our own luxury, and want also the luxury of their lifetime. So much for love and care. Keynes (inflation scientist) is like salt: use it with wisdom, it tastes great, makes a good meal, but don't use it overdone, the taste disappears and spoils the meal and the kidneys will be damaged severely. Greenspan had better listen to Keynes his economic cycle (7 years up and 7 years down) theory, instead of pushing the US economy to max expansion (and thereby to implosion). The value of the dollar will just be watered with all these huge 'assets' by the massive bailout of stressed bank assets. The super SIV that will act as bailout purchase organization will get more than $ 100 trillion (6 times the GDP of the US in 2007) in liabilities. The current US governmental debt is $ 9.5 trillion and the current US governmental liabilities are $ 46.5 trillion according the calculations of the GAO. If the airline and car industry also will bailed out due the Energy Crisis, the 'capital' position of this Super SIV (or will we call it the recycle bin?) will be doubled. Any currency with a huge dollar exposure (Euro, Yen and Renminbi) will be soaked down with the dollar. The recent value rise of the $ is only caused by large European/Japanese invention. Huge Euro/Yen sales and $ purchases of Europe and Japan (as the 3 nations has agreed March 13, 2008 to do when the $ would slide to $ 1.60). Why the Euro and the Yen have decided to go down with the dollar is a big not to understand question. To USA and the dollar are doomed, but misperception maybe thinks that the USA and Dollar problems can be solved, but that isn't possible: the problems are too huge, both are on the end of their stretchiness. The ECB and Japan should know this, but they don't apparently don't know it. This massive debt bailout can only really avoiding collapse if the foreign debt is convert into forced purchasing power in a 5 year scheme (each year 20%) or a 10 year scheme (each year 10%). A short conversion scheme is better: boosts the US economy severely and that's what it needs right now. A long scheme will lead to replacement of normal payment of current sales. An interest stop certainly must be considered. The US has become a second class world power, the world powers of the 21st century are not the financial debtors (leaking economies, founded -burning- on foreign capital input), but the commodity (energy, water, food) owners (Russia and Brazil). The will 'tax' the world with their trade. Russia is the future of capitalism. The US capitalism is brought down by the capitalists, by overstretching credit. The payment power of the US debt must be overestimated. If their will no debt/goods conversion plan, any bailout is just collecting problems and not solving them. And of course in the Super SIV their will be as much corruption as in the Pentagon. Budgets = Corruption. Large budgets = large corruption possibilities/exposure. Big financial = Mega exposure to soft/hard corruption. The decline of the dollar (and all the to the dollar connected currencies) has to do with the decline of the underlying economies and their perspectives. There is a stretchiness to artificial dollar growth. Other currencies can not replace more than 100% of their reserve currencies by dollars. The consume more than you produce that has brought the dollar down is a time limited event. We face the end of it. Unless the debt/goods convertibility is put in place. That the US could have it new place under the producing sun. Of course

with less consumption (as energy, mineral, water and food prices will be severe higher than they used to be. Growth will replaced by local vibrant sustainable prosperity. It's a pity that other currencies doesn't see the fact that the underlying value of the dollar is failing / has failed. Instead of isolating the problem, they now spreading the problem around the globe into other currencies and economies. The US was not a local problem (the US was the world economy), but the problems of the US had to be contained and not spread as new economies gain economic weight. It's a wrong situation that just one board (ECB) can decide to drag the EU even more into the dollar troubles. And the plan is not good: it's no plan, it's trying to extinguish a huge fire with a bucket water, or the ECB must go really far (but than it will be the Law of Archimedes -communicating tubes- in the global financial world. Must EU go done with the US? This is gambling on global level, just decide by a board in Frankfurt, some people has made huge decisions for all the hundreds of millions inhabitants of the EU and on their economic future, without any democracy influence at all. This is not 21st century human/political development, the people of the EU should not accept this dragging of the Euro into the Dollar problems (even if the US temperately has gained some export due to the low dollar, that was/is just a sign of terminal illness of their overall balance sheets). And is a sign that political independent central bankers are even less responsible than governments ever where in their role of money supply, even in times of war when governments did always stupid things with their currency: wars are not equal to stable currencies. The ECB should help their US counter partner is finding a good solution. What is the one and only good solution out of all this? A combination of the installation of a Super Debt SIV, a swift of money creation from the FED back to the Federal Government, an Export Finance Fund, an Energy Fund and a Municipal Finance Fund. The Super Debt SIV: The creation of a super Debt SIV that can purchase all stressed bank debts. Resistance in bailout the airline industry and the car industry directly (as their problems are global, not specific US, and have other causes). Some kind of sanctioning for the banks that sell 'assets' to this Super Debt SIV. A stop on interest can be put in place, but this will face global resistance, and is therefore maybe not wise to propose. On the other hand: the debt has two parties: the financials as debtors and the owners as lenders. Maybe this Super Debt SIV only must purchase only debts with mutual agreement between both debtor and lender. Than the sanction for the banks and the conditions for the owner can be set in mutual agreement (by a standard not negotiating model). Demands of the Super Debt SIV to the banks? 1) Production of honest balance sheets based on actual values (based on published financial measures). 2) Shares reshuffling based on real values (as it is a refinance tool). 3) The Super Debt SIV gets share equal to the refinanced debt (with recalculation if later on new balance sheets prove that the old once where not good and an extra fine for that). 4) Lenders must agree in transfer the debt to the Super Debt SIV. Demands if the Super Debt SIV? A) Agreement on the transfer of the debt to the Super Debt SIV. B) Lower interest rate or even interest stop (a general mandatory rule, not negotiable). C) A mandatory convertibility of 20% of the debt a year into purchase of US produced goods. D) A default option of 50% payment and 50% goods (if the second part of this proposal -the FED part- also is done). A short period will prevent full interexchange between debts and the current order flow, because that will not lead to extra orders and would not boost the demand for US production and the US would not gain payment power again). The other part of the solution is the return of the money creation to the government. The FED has in her 95 years of existence never granted any auditing request of the Congress. Amendment 16 is never ratified as constitutional requested by 75% the States. See the historical research on this: Kentucky her archives shows a vote against and was listed Federal as a vote in favor, many states doesn't even have voted on the 16th amendment. Wikipedia: 'in 1909 Congress proposed the Sixteenth Amendment, which became part of the Constitution in 1913 when it was ratified by the required number of states'. The current dollar is already fiat (not by anything backed, but on market demand and trust based) currency. The gold in Fort Knox (seized from the

common US population as currency backup on April 5, 1933 by Executive Order of President Roosevelt, after insiders already/first has transferred their own ownership of their gold abroad) is never full audited since 1954. So it's not clear if there is any gold there and if there is left some gold there who owned it. The commission that advised Reagan on the gold standard possibilities write in their report that the gold that still is left in Fort Knox had been in ownership changed to the FED 'due collateral reasons' of the state debt. Both the resistance of FED book auditing and the resistance of an one day full gold absent and ownership auditing at Fort Knox tells enough. The FED must be seized overnight and assets that has been moved or let off must be corrected. Private ownership of the money creation system was a stupid idea, installing a bank cartel that lend the government the money the government has allowed them to print. Paying interest by the government on debts that are based on fiat created money is to odd for words. Seizing the FED. Gradually paying the governmental debts by the new created money with equally retracting the fractional bank ratio's so that the same amount of money stays in the system. Of course this must be followed by tight constitution like regulation on the governmental money creation capacity, outlining the borders of a healthy fiat currency system. Legislation that forbids any seized FED official to be involved in the BIS (Bank of International Settlements) as the BIS being a non-democratic and non-governmental financial body that holds to much (not politically controlled) international economic power. A cartel the EU must forbid, although the doesn't apply to EU laws, the US has also moved by the Sherman Act the 90% of the global diamond market controlling diamond cartel De Beers out of the US. The BIS is a cartel that gives it's members severe knowledge benefits the profit from artificial created sudden market movements: insight trading at macro scale. We don't need old bros based networks any more, we need open parliaments controlled democratic transparency. This solution could use also additional an Export Finance Fund, an Energy Fund and a Municipal Finance Fund. Europe and China could realize a same set of solutions, if the Euro and the European banks and the Renminbi and the Chinese banks are too much effected by the US situation. Results? No debts anymore, no fractional banking any more (more stable economy), less income tax (as the IRS tax we pay now almost completely is used to pay interest on the federal governmental debt, with will be gone than), no inflation anymore and municipals can address the PeakOil related problems of making their local economies vibrant prosperous. If this set of solutions not is taken, we will face collapses and chaos. The results? No collapse (as collapse is not about lost of values/assets, but only transfer of values/assets to insight knowledge), less income taxes (as the State Debt will disappear: so more household wealth and corporate strength), less debt (so less interest payments: so more household wealth). The US citizen faces today to mayor financial pressures related to FED designed interest: 1) Income Tax: that is used 100% for interest payments on the unnecessary interest on federal governmental debt (the new expenses are funding by higher debt), as the federal government has giving away in 1913 her own right to issue money to the FED, who now can let her shareholders/beneficiaries charge interest on the printed money for the governmental debt. Each American works 3 till 4 months (30.8% GDP according to the Tax Foundation) a year to pay the interest on the governmental debt to a company that has seized the right to issue this debt from the government in 1913. 2) Debt Interest: as Income Tax takes away 3 till 4 (30.8% GDP according to the Tax Foundation) months of each income, going into debt is a logical consequence / appealing temptation. But debt costs interest. 3) Inflation: Those who haven't debts, don't pay interest, but pay inflation. Money gets less worth every year. Inflation is the best tool to get capital from cash into digital bank accounts (where it by interest earning is protected against inflation). The best customer binding and engine for fractional banking is inflation. 4) VAT: The use of VAT is everywhere different, as the destination of the budget is. In the US VAT funds local/state government. In the EU VAT funds the supernational government. Conclusion: It's mathematically safe to say that each American works 50% of the year just because

Wilson in 1913 pushed the FED law to Congress on Christmas Eve. This is a modern time version part-time slavery, something that will no longer accepted in the 21st century. "By this means extra-government organizations may secretly and unobserved, confiscate the wealth of the people, and not one man in a million will detect the theft." (The Economic Consequences of the Peace, John Maynard Keynes, 1920). Due to PeakOil economies will be contracted in distance or reach. The future of the 21st century is local due the fact that local models has the best energy/prosperity ratio's. This transition can be done gradually by the above described solution of will be born out of chaos (much more headwind for everybody). Local currencies and local taxes are the two words of the 21st century. Federal can gradually flow into local, or Federal will be abolished with an economic/financial big bang, or Federal enforce local influence on micro level (law against local currencies etc.), but Federal and PeakOil are certainly contrary movements in economy/society. The latest development on the global currency front (as in: war) is that the South American nations has agreed to trade more in mutual currencies and less in the dollar. To facilitate this they will initiate an own 'BIS-like structure' who can clear trade balance differences mutually. A open not one currency specific favoring system, that will boost the economy of South America. Resources always come with wealth and the rise of the currencies of the owners. The health of a currency is directly attached to a) national deficit/surplus of resources, b) geopolitical power (often attached to a) or c) international cooperation (the powerless, yet effective version of b). The world in the 21st century will be superpower less. The economy of the world is starting to de-hubing. Regional international cooperation clusters will gain at the cost of superpowers (as in: the one remaining superpower: the USA). The only superpowers of the 21st century will be: Russia and Brazil. They have anything a nation/economy needs. Energy, minerals, soil and water. The empire of today (the USA) taxes the world by its currency. The Empires of the 21st century (Russia and Brazil) tax the world by energy and food delivery. Real values will rule the market again. Assets will be king, not debts. The 21st century will be a century of massive migration of populations to natural environments that can feed better/wealthier life with all the migration attached tensions, problems and human suffering. Energy, water, minerals and food (concentrated water and soil use) can be bought and transported (or locally produced/harvested by devices). The problem is purchase power to buy and transport, or buy the needed devices. People will migrate to parts of the world where they can make purchase power. Purchase power is the problem of the 21st century in PeakX or PeakEverything. Nations that base their purchase power not on production, but on debt, robbery and/or currency demand have no future, they even harm themselves as they grow weaker instead of stronger. The Third Reich had no future: they forgot to produce and went robbing (besides the fact that it was already moral bankrupted on the day it began). Holland was the global power of the 17th century. They forgot to produce and invest their wealth in England. The rest is history. The Bank of England (the historic role model for all central banks) is founded by members of the Bank of Amsterdam. When the French occupied Amsterdam the complete deposit of the Bank of Amsterdam was away. Officially meltdown in losses of the first international company of the world named the VOC, but in the books of the VOC this huge capital input never is found. Producing is growing strong and delivering continuity. Robbing the world or the own nation has only a short life line. Major currencies are based on trust. Major currencies face a severe hard time, as they undermine themselves severely. Trust must be earned, build, not taken away. The web 2.0 model (everybody can publish to day, smartness in information publishing has become the competitor of power in the world) airs all information (also the information that undermines trust). Information and currencies were never friends. The story of the 21st century is that people only will trust values they can actual check in daily live on their viability. Big will be equal to corrupted. The story of the 21st century is abandon the 20th century structures in power and currency (where equal in the 20th century) as they are more and more exposed as moldered from the edge to the center and from out the center to the edge. Gold will

become a huge competitor for asset/wealth backup/storage. Not for currencies backed by gold (history has showed that the gold always has been disappeared), but for ordinary people wealth backup/storage. The banking industry (and thereby currencies) will play a less smaller role in the 21st century, than it has have in the 20th century. Continuity will no longer be taken for granted. Global currencies will been seen as production tool, no longer as asset, therefore currencies will lost the trust they need to much. Russian Treasury has a stockpile of dollars (approximately $ 550 Bn). They can afford to write them down instead of keeping them, or even profit of it. They can cause the fall of the dollar in one day by both offering loads of dollars on the market for low prices and the same time going short (betting on value decline of the dollar). The US has done this end of the '80ties with the ruble, delivering them the collapse of the purchase power of the ruble (and thereby the USSR) and giving by the combination of going short also a profit and cheap oil purchase. Russia was end of the '80ties the biggest oil producer of the world with a production of 11.8 million barrels a day, according to the Soviet Legacy on Russian Petroleum Industry case study of the University of Texas. So Russia certainly will sometimes in the future make this US-Russia currency goal status from 1-0 to a 1-1. And also the US-Russia oil price damage (which was also 1-0 due the price lowering efforts of the US end of the 80ties), to a 1-1 by sometime in the future an active price increasing policy/strategy of Russia. Russia is certainly able to push global oil/gas prices to much more higher levels (and hurting the US economy by that) by going closed long on oil/gas. Going closed long is about 'betting' on future high prices by purchasing own allotments though third parties. Currency is also about invisible taxation of the users by the issues by inflation. China has with its $ 1.8 trillion assets in her State Administration of Foreign Exchange also a financial nuclear device for the dollar on stock (current growth ratio $ 400 billion per year). Currently already used for geo/national politics in the Costa Rica case: Costa Rica has cut ties with Taiwan and get involved in China Mainland just because the Chinese State Administration of Foreign Exchange support the governmental budget (purchasing bonds) of Costa Rica. The invention of the Yen and the Euro into the Dollar (Euro was $ 1.6, is by this intervention back to $ 1.4) will be listed as the act of given up own strength. The Yen and the Euro has trade their strength and healthiness in for joining Dollar problems. The problems of the Dollar are beyond intervention possibilities. Two Central Bankers (Europe and Japan) doesn't understand that and wreck this way two mayor world currencies. Intervention in the Dollar value is carrying water to the sea. Both Masaaki Shirakawa (Governor Bank of Japan) and Jean-Claude Trichet (Director European Central Bank) are 1) or blind for the fact that the dollar can't be rescued, or 2) no party for the FED/BIS powers, or 3) 1 and 2 together. One man's decision has ruined the future of Japan. One man's decision has ruined the future of Europe. To much power concentrated (and not democratic controlled/steered) can have severe economic consequences for nations/continents.

Sidewinds

General
Credit
Energy
Water

General: Sidewinds makes right/soft landings on landing strips much more difficult for planes (and can cause crashes beside the landing strips), makes reaching wanted destinations/harbors more difficult for ships (and can cause shipwreck on unwanted beaches). In the credit, energy and water issues, sidewinds can play a huge role in causing really huge problems. Sidewinds are caused by opinion leaders that have a certain authority, but doesn't understand the current situation because the have made their opinion based on some facets of the past, but doesn't have the whole current picture, with all its facts and developments. By their historically or function attached authority some important people can give severe sidewinds and cause this way hard landings, crashes, shipwrecks (just call it what you want to call it), but sidewinds doesn't give a pleasant trip nor a safe arrival without damage. Sidewind people certainly should think about the damage they cause. Authority comes with responsibility.

Credit: The problems of the Credit Crisis are severe under estimated by many political/economic/financial leaders. They doesn't see that the credit model is overstretched, that there is no relation any more between credit and payment power, that this lack of payment power will lead to severe asset revaluation and that by this revaluation almost all financials technically are bankrupted. This blindness for the problems is caused by the blind believe in endless growth, the blind believe in endless credit, the psychological fear for not growing anymore, the psychological fear of not being the world leader anymore, etc. Leadership is attached to power. Economic power. Needing credit is not economic power, but economic weakness. The size of the Credit Crisis is severe under estimated. The problems around 1980 where just some drops considered these huge waves. Trillions of assets are overvalued and must we corrected. Bond insurances for incidental failure are not capable to cover a market failure. The US house market is 50% overrated in relation to current and future payment capabilities. The Credit Crisis is also only just started. The second wave effects of the general economic decline will come in sight soon (bankruptcy of GM/airlines/retailers), giving the financials a second blast, robbing them of their private loan, corporate loan and last bond/stock assets. After the first blast (correction of US real estate over valuation due to actual payment power) the whole financial industry is house of cards. Artificial valuation and daily capital injections is what keeps it running. People who say that the Credit Crisis is over, must be nailed as totally buttheads with no economic knowledge or sight on facts/developments what ever. No matter if they are in politics or in corporations, these people should be fired due their stupidity. The damage these people cause is to big to describe. Hoping against all odds is stupid. The credit system is overstretched, there is no upside solution what ever any more. It's correction time. If a government send you money to spend, you know for sure that your economy is in really bad/terminal shape, has grown in structural wrong directions. Economy = Production/Earnings. Somewhere on the line we've forgotten that crucial truth. The sacrificing of growth and consumption has cut of loose of the source of both: earning capital instead of borrowing it. Times over overconsumption, not sustainable growth/prosperity, will be followed by times of corrections. The leaders of the spending age, has a hard time to tell this (as in: will never do that, without making fools of themselves and their former policies), these message

needs a new type of leadership: real leaders, not fancy summer sailors. Sustainable prosperity will be the keyword of the 21st century, growth for the growth, short time excessive growth followed by troubles will not resonance as much as it did. People like stability in prosperity. Credit will not be the word of the 21st century, but will be recognized as the curse/drug of the 20th century, that has created crashes and vaporizing of assets of decades of human work and families. The price of too much greed is pain and payback time.

Energy: The problems of the Energy Crisis are severely under estimated by many political/economic/financial leaders. They doesn't want to see that carbon energy plays the most important role in our economies, that the period of cheap oil is over, that carbon energy is a finite resource and that after exploring the easy to explore and easy to refine oil, only the difficult to explore and difficult to refine oil is left. The major differences between the sidewinds regarding the Credit Crisis and the sidewinds regarding the Energy Crisis are severely. The Credit Crisis already has happened, and only must come visible, the credit problem has stopped growing, is only not yet revealed in its real size. The Energy Crisis on the other hand grows further and further. The Energy Crisis gives a short transition time and sidewinders (people who doesn't recognize the problem) shortens this giving (already) short transition time even more. The Credit Crisis sidewinders only pushes problems to the front (and yes delaying economic reforms and yes causing severe damage), but the Energy Crisis sidewinders are playing with our whole economic future. They don't see the fact that our whole current economic model is build on cheap energy and that cheap energy just left us in 2004. People who say that there is enough cheap carbon energy out there are no-no's and morons. The problem is that they are Ministers of Economy, Ministers of Foreign Affairs, researchers of economic institutes, political leaders. They have authority, but they don't know the facts and the developments. The sidewinders concerning the Energy Crisis really rob economies of their transition times. Like in physics: the speed and the brake time make the impact force. Speed: we drive hard: we've used cheap carbon for anything. Brake time: the time we have to adopt to expensive energy. Impact force: very hard if we don't brake of steering in new directions. Simmons calls not using transition time actively 'a certain smash against the wall'. Energy sidewinders must be confronted with facts and developments and energy sidewinders also must be put out of office: they have showed not to adapt (not able to handle) facts and developments. They don't deserve the authority we have given them. They are no actual/future leaders, but just history teachers/repeaters. As the cost of energy will rise severely, governments find themselves placed for five new challenges: 1) Transforming cheap energy based prosperity to expensive energy based prosperity (as in: cutting as much as energy demand in economic processes as possible, as in: local vibrant prosperity, as in: cutting the huge energy demand of transport and mobility that can not be replaced by any other energy resource, that were only possible due to cheap carbon energy). 2) Stimulating non carbon energy harvesting. 3) Realizing a decentral based power infrastructure design. 4) Finding creative ways to lower the cost of living and government for households and companies. 5) Facilitating the 'production jobs coming home' development (as energy becomes the main production costs: China will no longer be the factory of the world), combined with more local production. The Energy Crisis its impact on incomes, on corporate profits, on governmental costs is severe. Creative (not rude) finding cost lowering measures that stimulates prosperity, that's the challenge for governments, after they removed the misleading (and lazy in researching) energy sidewinders out of their teams.

Water: The problems of the Water Crisis are severely under estimated by many political/economic/financial leaders. Water has three markets: domestic, industrial and

agricultural. No (clean) water, higher water costs, higher water purifying costs, less corporate profits, less industry, less jobs, less economy. Less (clean) water, more illness, more illness costs, less well-being, more water costs, less personal/household prosperity. But agriculture is really all about water, consuming 80% of the world water use. Agriculture stops when water becomes scare and thereby expensive. Water is about availability and quality. Authorities who doesn't see the Water Crisis, doesn't have a future. No (clean) water, no life/economy, no future. In China the water sidewinders are put out of office in 2008: they have giving the nation a severe problem with mega water pollution. Authorities who doesn't recognize the water problem, doesn't talk about it, nor address it just rob nations of their future/prosperity. The best thing nations can do is get ride of them before the problems have become irreversible in size. Ground water is a limited resource that becomes finite when is used overstretched. Surface water is a limited source that become finite if used overstretched or become not useable when polluted. Water is hygiene, prosperity, economy and food. Water needs governmental policies if they will survive.

Tailwinds

Adjusting behavior
Advanced localism
New models
New technologies
Increasing efficiency
Increasing localization
Increasing wellbeing
Less spills
Less mainstream
Positive immigration
More remigration
More migration
Balanced bilaterals
Less superpowers
Less military
Less terror
Digital standards
Digital killerapps
Digital bandwidth
Digital communication
Digital information
Digital trading
Extended product lifetime
Operating systems
Digital programs
New digital developments
Energy awareness
Dependency awareness
Trade deficit awareness
Budget deficit awareness
Energy technology
Bio technology
Glass technology
Finance model

Adjusting behaviour: There are certainly some severe global economic/technological/societal tailwinds that soften the economic damages caused by the effects the Energy Crisis and the Credit Crisis. It's sounds strange but the solution for higher prices are the same higher prices. Higher prices scale back demands by changing the easy to change habitats. It's the low hanging fruit and has a certain/huge capacity. It's killing demand without the pain if it. Less airtravel, airtransport, roadtravel, roadtransport will severely scale back energy demand. Certainly in high energy economies/societies like the US. But the global demand for energy, water, food and resources will gradually rise, rise and rise and therefore the energy price, as energy will become more and more scarce. Prices force behaviour adjustments.

Advanced Localism: Communism has collapsed due inefficiency: in the communistic system not inventism, but reactionarism was rewarded: freedom is the birth ground of economic performance. Capitalism has got two broken legs by the energy crisis and the

financial crisis. Both state driven communism and fractional banking based growth focused capitalism are 20th century economic and societal models, fueled by cheap energy, resources and transport and controlled by huge central governmental influence (in this the USSR and the USA strangely enough top each other). Both models have run out of their driving energy, making them weak. The 21st century needs an own (adequate to the new situation) model for preventing National Collapses and Global Third World Wars. Localism will be the Third Way/Wave: Localism. Maximal prosperity by low energy demand. Localism is the only valid model in times of high energy prices. Each local government must not wait on the national government to act (because they will not). Local governments can make and realize ToDoLists. They must make a whole list with thousand to do items. Priority One is informing the companies and households for which they are responsible by a simple message: 'Tough times ahead due the Credit Crisis and the Energy Crisis. But we've seen it and we want prepare our local economy by adjusting it to this new realities.' The best thing local government should do it just sit together in two different meetings (under guidance of a good meeting leader) and ask themselves the next questions: 'What will happen as the Credit Crisis will lead to collapse of the financials (as in: the financial system, but that question is too tough) and the national government has become totally irrelevant and we must take care of ourselves.' And 'What will happen as due the Energy Crisis oil prices rise to $ 250 or even $ 500 per barrel oil which influence all the attached/related energy prices and thereby all product/service prices.' These two simple meetings will lead automatically to adequate local responses. Government (also local government) can only steer, not power developments. Real power for changes are within people, households and companies. Everybody than will start thinking about an own emergency energy use conservation action scheme. Etc, etc, etc. The currency issue is the only thing local governments must address completely by themselves, not giving this to the market again as President Wilson did in 1913. The system of two captains on one ship (Federal Government and the FED) is not good: both can blame each other. Shared responsibility is lack of responsibility due build-in unaccountability. The most simple 'emergency currency for on the shelf' is the kWh price. What about energy, water, sewage, food, transportation, jobs, justice, police: all the things we now take for granted, but then we must 'reinvent' all over again? People will start reading Heinberg, Kunstler, Schumacher and Raiffeisen as they have thought about this there whole life and can provide many directions and practical examples of things that would make a difference when energy has become very expensive and local has become king (as in: the most relevant environment). People will seek jobs closer to home. Companies will relocate or design more geographical diffuse business models. Local water plans will be made, roof water will be valued/stored again, local power production/harvesting will gain popularity. Local food production based on low energy and low space demanding open source system Grow|OS (www.growindus.com) will boost. Packet transporters will join forces with public transportation companies, to cut on fuel costs and increase frequencies the same time (lower costs, better services). But also major improvements will be achieved. Like a local redundant internet exchange with multicasting (making digital broadcasting possible) attached to redundant multiple fiber connections (that are already present in powerlines, interlocal roads and railways), making peering (traffic exchange) deals with other local hubs, enabling usage fee free communication (as there is no usage connected costprice) and becoming digitally independent from the major digital hubs/exchanges (like also has happened in aviation). Investing in fiber to the home in the high density areas, plans for Wimax (wireless local internet/phone) for mobile and serving the low density areas. Videocalling and remote desktop work will gain in popularity. Both will rise / get huge market shares in a speed similar to the fax (who just take a huge part of the communication in just 2 or 3 years back in the '80ties). Ensuring the local digital future and its connection with the world. Energy will been seen as wealth drain and conservation will equals prosperity. People and companies will start to use more and

more local suppliers (as they come more price attractive due too high energy/transportation costs). Local is back again and more vital than ever. Combining the power of local with the power of global. Local was someplace people sleep. Local will become someplace people live (work and relax). Local entertainment demand will boost severely as it will not be economic to drive to other places for entertainment. What about education (location, types, changes)? What about local media and diversity in that? What if the State will no longer finance social security issues? How we don't get circumstances that where regular in Russia in the '90ties. Concerning geographical design Kunstler his legacy could contribute severely to each local government and to local real estate companies. The beautifulness of all these actions is that they're good actions, supported by even the blind for the Credit Crisis and the Energy Crisis. Everybody wants a vital local economy. Give parts of the mix resistance: just drop them and pick them up later on when the time certainly will be right for them. Go for volume in local vitality, forget dogmas, just adjust to better what easily could be changed for the better. Local government is much more delicate than national government: wisdom is needed to achieve maximal adjustments in the shortest time with the lowest input of time/energy. The common sense is moving very quick to vitalization of local economies, don't push to far, to fast, adjusting is about acceptance, about serving local needs, not about knowing it better. What about fashion, what about art, what about music, what about radio, what about TV, what about GSM, what about the railroads, what about the roads, what about aviation, what about farming, what about costs of local government, what about leisure, what about house adjustment, which industries we will loose, which industries will grow severe, what can't we do on our own and we need neighbourhood cities for to corporate or cooperate? What 'services' deliver regional, national, federal and supranational governments and what we want to pay for these 'services'? The mass/weight/importance of everything shifts from national to local. Do we want new inhabitants and companies? Things will be turned around (market polarity change): these days local governments facilitates national governments, this will change 180 degrees. What is our UPS, which things are we good / comparative in, what do we have to offer, what will be our marketing and how we do that and pay for it? The closer democratic government is to the people and economies they service the better the quality, having no odds on really losing track. Of course there will be local dictatorship and corruption. Protection against such issues (services) can be 'obtained' from above local governmental layers, acting more as insurers/facilitators than the centre of everything. What about taxation? What about freedom of speech, freedom of protest? How we ensure local water availability and quality? What will we do in preventing water pollution? How we save on water, power and heating bills? How we store the cold of the night for using it during the day in summer times? Can local food production been expanded? Do we install a local digital market place? Do we reopen a daily physical market trade location? Where would that location be? How we register ownership of real estate? How we register credit records/defaults? What we do on recycling of precious raw materials? Do we need an airstrip? Do we need air heliport? Do we need to make water reservoirs? Do we need to dig canals? What about roads? What about street lighting? What about taxis? What about bio diversity? Must we make parks? Must we plant fruit trees? Do we have bees for pollination? What are we willing to push to higher levels and what want we to pay for that 'services'? What about healthcare? What about doctors? What about medicines? What about hospitals? What about insurance? What about education? What about our roads? What about leisure? What about entertainment? What about power generation? What about freedom and privacy? Do we develop local quality 'brands' for normation instead of national governments? Questions, questions, questions. The answers will appear automatically as result of joint analysis. The whole development in one line: stay where you are, dig in and make your life and the life of your neighbourhood beautiful. Us will become a more important world in everybody's live.

New models: As energy prices rise, old models become old fashion, answers to a passed away situation, no longer serving right to the actual needs and there will sprout demand for new models: space for new models sprouts automatically and new models when initiated will push the old models of the market as no longer efficient. Examples? Far distance air travel based holidays will be replaced by shorter distance experiences. Location bound meetings will replaced by videocallings and videomeetings. Showroom based sales (where presentation and personal advices both are important) will be replaced by (completely commission based) local salesmen supported by an online presentation/configuration/ordering environment. Going to the office in the city will be replace by doing the work that must be done at home or in a suburban local dedicated joint office facility. Post and parcel services will make joint ventures with public transportation models, to cut on transportation costs and increase/maintain frequencies. The internet structure will change, the old few hubs model, will be replaced by a new very much hubs based model. The office structures will change, online (internet, phone, videophone) productivity will replace (commuting and traffic congestion based) presence as office productivity model. International companies and national companies faces tough times, unless they adapt new models based on local/regional assembling. Anything, ant action that these days cost a lot of energy and can be replaced by local/regional low energy models will be replaced, just by costprice driven facets. The strange thing of all of this is: Everything what and everyone who is now important will become less important and there is nothing to stop this development (unless they can fix the Credit Crisis and the Energy Crisis overnight). Dino's will be dino's unless they change to fast and easy moving antelopes. Local will promote from the place where we spend the night or stay between car rides the place we live life to the max. The energy industry and the digital hardware industry will stay huge and global. Any other industry will fragmentized in local/regional solutions, not as wanted policy, but as method of surviving in times of expensive energy prices. Mass media her market share in media consumption time will fall dramatically. The focus of people will be even big on local than it will be on global. Web 2.0 (digital engines where people can publish very easily) will gain even more influence than they already have today. Web 2.0 weaken the reach/power of mass media, enforces the power/reach/effect of advertisers (by the possibility of more accurate targeting).

New technologies: Certainly new technologies will help us a lot, very much. They will assist us in harvesting renewable/sustainable energy sources, they will help us in getting more prosperity out of less energy. Technology doesn't have one face, but is as diverse as energy use is within our economies/societies.

Increasing efficiency: The global economy/society is technological driven. Technology invents it selves continuously over and over again. Technology is 100% equal to self-improvement. Specifications are all that matters in technology. This is the reason that efficiency grows each year. Higher energy prices will boost technology in a less energy using direction. Efficiency gives equal/more prosperity by less/equal resources. We all know that increasing efficiency mostly leads to more prosperity (use), than it leads to less energy use. But increasing efficiency is certainly a huge tool in the prosperity / energy balance. And we get this for free of technology.

Increasing localization: There are many reasons why localization will increase the coming year enormously. The first reason is high energy prices. They make mobility and transport more expensive. The market mechanism that triggers both local anything in

favor of not local anything by each choice. The second reason (caused by the first one) is that job miles will reduce: people will search jobs closer to home, this will increase enormously cause a more 'local root' feeling, with large societal effects. The third reason (also caused by the first one) is that the number of 'food miles' will reduce, from now roughly average approximately 1500 miles / 2500 km, to a more local/nearby food production. The fourth reason is independent from the first one but very complementary on it is: geo-targeted ad technology. Advertising will be more and more geo-targeted: Google Adwords already offers local advertising. I-Local is an example of a geo-targeted database driven online model type like the old Yellow Pages. Local production/deliver of products and services will grow tremendously: avoiding energy spills and time spills and therefore give more value for money. The fifth reason is also independent from the first one, but very complementary to both energy prices and local ad demand: is geo-targeted media (as in local digital media). These will yet boost when large national media corporations launch or a local dedicated digital portal structure, or a combined national/local digital portal structure. The sixth reason is the rise of use of remote desktop and xml desktop technology, which make office locations less important in corporate function. Office people will more and more work at home of in 'desk hotels' in their home town. The localization caused by high energy prices and the strong increase of geo-targeted advertising both will boost local media structures powered by the large national media corporations. An integrated combination of a publishing engine and an ad engine, operated partly national by the exploitation corporation and partly local by franchisers. The news reporter with wireless/mobile video/audio (as in quality phone) will be back on the streets of the cities (fulltimers and freelancers) and villages (freelancers). Local will become hip, the place to be, this will increase quantity and quality. Local events will get the exposure they deserve and will be more crowded (and therefore better, nicer, more quality, more quantity) than these days. High energy cost and geo-targeted advertising and geo-targeted publishing will boost localization: a more local (distance avoiding) focused economic, societal and mind development. Localization is no isolation. Localization is just using less energy.

Increasing wellbeing: Higher energy prices have not only negative effects. Less commuting is certainly a life improvement: work (as in earning income and life pleasure) gets a huge negative facet less: commuting. Less commuting travel each day, is equal to less stress each day, is equal to each day more time for the good things in life, is equal to more rooting in living surrounding. We get this all for free by less commuting by higher energy prices. When oil prices makes commuting a luxury, general commuting will disappear and only high paid specialists and management will get commuting fees from companies. Luxury joint commuting also will rise: luxury busses with less seats, orange jus, good coffee and the newspaper/notebook: much more better than driving in traffic congestion.

Less spills: When energy, elements, material and food become much more expensive spills almost automatically stops. We get less spills for free by higher prices of energy, elements and food. So the dogs will get more household food leftovers instead of canned Pedigree Pal, because Pedigree Pal will become too expensive for many families. Who cares? The dogs certainly not.

Less mainstream: Due to internet based technology, media consumption time has become very fragmented the last years and this development is yet started and certainly not on its maximal size. Media will become websites with a combination of text, graphs and video, print will become a very expensive way to publish when paper, printing and

distribution cost will increase severely. Also the advertising budgets are moving more and more to digital because digital has two big advantages: 1) advertising target group segmentation and 2) advertising effect analysis. But the major development in media is that media companies looses more and more media consumption time each day. Publishing engines are taking over media consumption times rapidly. This development is called Web 2.0, and it's mainly about user driven content. The media consumer is also becoming the media supplier. Of course a lot of crape is uploaded, but isn't the Internet about being smart in finding what you're searching for? YouTube, MySpace, FaceBook, Yahoo, Windows Live, Hyves, EBay, dating sites, etc. The user is moving from the outside of the media market to the centre. The user will become the final centre of the media market. Less mainstream is more diversity. More diversity gives better knowledge and developments. Less mainstream is also less central media consumption time and more enhanced local consumption time. It's clear that the Internet makes the global world smaller and the local world bigger.

Positive immigration: In PeakOil driven times creating actual/stable brotherhood between bilateral nations will become the main political/governmental/national target. Nations will get bilateral relations that will be based on mutual interest. Not by mutual interest balanced bilateral relations between nations has no future in times of PeakOil. Each country with assets can choose any attractive bilateral friend they like. There will be positive immigration between all bilateral connected countries. Countries will exchange resources, knowledge and technologies. Bilateral countries will become each other real friends. On mutual interest based real friendships between nations will be the main facet of future geopolitics.

More remigration: Large quantities of the former immigrants will re-immigrate to their more homelands or other emerging countries. They have proven to be active, duo culture, and RWA (ready, willing and able) to migrate. They blended cultural heritage will be their great asset in a globalized world with strong emphasis of localization, that PeakOil and the Internet has given us. The economic nomads will also be strong and strong in survival, because they know to find the 'fire'.

More migration: Europe will suffer from lack of energy, elements and food and therefore will be an expensive part of the world to live in. Europeans will migrate once again in large numbers to other parts of the world, like the have done till the '70ties. Creation in other countries the same cultural problems as they have had with immigrants in their homelands.

Balanced bilaterals: In PeakOil driven times creating brotherhood between nations will become the main political/governmental/national target. Bilateral relations will be based on mutual interest. Not balanced bilateral relations have no future. Politics will complete redrawn from the international stage. Economics will rule. The Western World doesn't have to count on much generosity from the Emerging World. The same way Europe has really doesn't care much for Africa in the past, Africa will doesn't much care for Europe.

Less superpowers: Enhanced localization automatically decreases federal powers severely. The powers become more locally concentrated. Enhanced localization is a result of energy and food transition. The world become more a by localization 'dominated' place with less federal government and therefore with less superpowers. Example: The chance

that the federal government of the USA in the nearby future financially will collapse is severely present. What will happen than? One superpower disappears, 50 independent states with their own characteristics and therefore bilateral relations will enter the world stage.

Less military: Unfortunately the end of the Cold War was not the end of militarism. The peace makers (Gorbachev, Reagan and Thatcher) disappeared to quick after the fall of the Berlin Wall and the collapse of the USSR from the international political scene. Unfortunately NATO has not used this unique momentum in time to convert both their systems and those of the Former USSR (FSU) into wise, controlled, mutual descending, creating a more piece driven economy on both former camps. The peacemakers (Gorbachev, Reagan and Thatcher) where unfortunately very soon after the end of the Cold War disappeared from the global political landscape, otherwise the world have look differently today, because those 3 really liked each other and had accomplished things together and that's a good starter for mutual international cooperation. After the USSR was collapsed, the NATO let the former USSR economic collapse in their transition from socialism to capitalism and from a large army driven society to a full consumer production driven society. This was not wise and has given the world new instead of less problems. Russia could present someday the reverse bill of this in times when NATO just doesn't need that. After the Cold War armies has tried to reinvent themselves after the cold war, by being smaller and more high tech. But military as development has come to the end: the new wars are pure economic. Who have the resources have the economic power by this, plus the healthiest economy and the largest ownership to capital? Military means are weak and small sized in effect, compared with issues as cutting of oil, power, fertilizer or capital supply. Military as we know it will disappear, just because really hard economic power means just will out phase them. There is not an objective person with some brains that see that economic power (by means of able to deliver energy, elements and food to the world market) had out phased military power in PeakOil driven times. The same way PeakOil has killed the Climate Change movement, PeakOil had also killed the Military Complex.

Less terror: Modern terror has it birth ground in Equatorial Countries. PeakOil will bring these countries to much higher levels of prosperity and will end the US world dominance. Terror has one mother: frustration and two fathers: poverty of the poor and humiliation of the intelligent. Much more prosperity (ends the frustration of the potential poor terrorists and give off-terror pride to potential intelligent terrorists) and a descending global role for the USA (ends the frustration of the intellectual terrorists) will descend the already marginal role that terror plays in our global, regional and local economies and societies.

Digital standards: The information and communication wave wasn't been possible without global standards for digital communication. Packet switching became the norm. Not more physically connected analogue point to point lines with a wavelength on it. Digitalized information (bits: based in 0 and I, as in: no signal or signal), that was brook down and put together in digital 'packages' and labelled with sender and receiver and posted in a digital transport infrastructure (similar like packages are posted with FedEx or DHL) and on receiver side rebuild to its old status, with request of lost packages if there were. Package switching technologies multiples the network capacities tremendously. The X25 and X400 standards were designed by the ITU (International Telecommunication Union) have been complexly passed by the US born TCP/IP protocol. TCP/IP was used to connect local computer networks to each other and has conquered the global digital information

and communication transmission, making sharing information and all types of communication much more easier and cheaper and therefore much more applied. TCP/IP has driven each other network protocol of the market. Novell which was the market leader in LAN (Local Area Networks: corporate networks) Operating System software, changed to late and lost its IPX/SPX dominance on LAN to TCP/IP. Also telcos have transite their switching equipment completely to TCP/IP. The victory of one global digital communication standard has lowered equipment prices severely, made making connections easier, made developing information and/or communication applications and services much easier. In technology easier and cheaper always results in more and better.

Digital killerapps: Digital communication had three (so called) killer apps (applications that pushed it roll-out severely): These were email, hypertext based web browsers and index-site's/page's plus search engines. Email was the first application that takes advantage of digital communication. It was a protocol based on several RFC's (Request For Comment) as circulated in the Internet community by the successors of the ICANN like NIC, InterNic and IANA, which results in the definition of the SMTP (Simple Mail Transport Protocol). The ICANN (Internet Corporation for Assigned Names and Numbers) is a not by open democratic rules function the global internet 'government', and is California based private hold corporation, contracted by the US Department of Commerce, making the USA the internet government. This US governmental ownership situation will be certainly changed in the future, as internet grows more and more globally. An example: The slow approval of the .eu domain for Europe was an issue that could be political influenced. An other example: The US now can theoretically cut of nations by removing their toplevel domain record out of the DNS (Domain Name System) root servers by just deleting zone file content or even simple just by marking the .ir root record line with the ; character. Despite there where more email standards and network standards, email could be rolled out and delivered everywhere by the use of gateways between the different (SMTP and X400) protocols, because the email protocol of X400 of ITU was still in deployment (companies like IBM supported it very long). Email was cheap, easy to use, very high speed. Everybody with a (dial up) connection and an email program could communicate with everybody with a (dial up) connection and an email program. It's not a miracle that email became a success. The @ address format is born in 1971. The World Wide Web as hypertext linked web pages was born in 1989 and developed rapidly after popular the web browsing programs like Gopher, Mosaic, Netscape, MS Internet Explorer and recently FireFox came available. After publishing and accessing information worldwide became very easy, index pages/sites (like the Open Directory project) and search engines (like AltaVista later on followed by the current players like Yahoo, Google and Baidu -the search engine giant of China-) came into place. From than on the sky was the limit: it became an it selves enforcing development: content gave content consumers and the more consumers there came, the more content was generated. Access to internet based information has boost (and still will) global developments severely. Everything someone wants to know just available at the tips of your fingers. The economic boosting impact of this tool in both human, societal and economic developments have been much underrated. The contribution of the Internet as we know (based in these 3 main killer apps) is an elevator (quick moving to a higher level) phase in human history. Search engines improves mankind's time efficiency enormously and contribute thereby huge to prosperity, something we certainly need in times of PeakOil and attached energy migration, which both have repressing influences on prosperity.

Digital bandwidth: When digital information/communication standards came in place, and digital communication starts to developed, and the above mentioned killer apps (email, web browsers and search engines) came into place connections (first dial up, after that continuous online, first fixed line and there days more and more mobile) where boosting peripheral. These transport demand explosion of course lead to an infrastructural (network to network) explosion based on fiber, which was funded by the dot com bubble from 1995 to 2001 and the growth of numbers of and size in internet exchanges. The bubble explode, almost all fiber companies where driven in Chapter 11 or even bankruptcy. But internet use and therefore bandwidth demand keep still growing significant. Peripheral bandwidth still grows and is these days average 5 Mbit/s. Mobile is replacing these days fixed lines a little, but that will be soon grow to higher levels as prices of mobile always online will drop if mobile operators has upgrade their networks to capable of higher bandwidths. Fiber to the business will become more regular, fiber to the curb (street corner) will increase the copper bandwidth of telco's and cable companies. Central infrastructure capacities grows also severely, not by digging new lines on existing routes but by putting new end of line and on the line equipment in place. New fiber lightning equipment makes the use of multicolor lasers in one fiber possible, creating an (only equipment limited) bandwidth. On the question 'what is the theoretically capacity of a pair of fibers?' is the only right answer the rhetorical question 'how many colors are there in nature?' Physical unlimited capacity is what fiber has to offer, the current limits are formed by the current (as in: economic available) status of attached equipment. Fiber networks will be extended more denser in the periphery and more also there will be realized more international routes, but these routes will (for funding reasons) be attached to HVDC based international/intercontinental power infrastructures who will have also build-in optical fibers. This is one of the reasons desert based CSP (Concentrated Solar Power) has a future. Desert states will use the CSP and HVDC combination not only for own renewable power generation and earning export income by power export, but also for connecting their economies and population digitally and redundant to the world. Redundancy is certainly yet an addressable issue in the Emerging World. Cable cuts in the Middle East early 2008 caused off line status for several regions. This is not only a cable issue (physical route), but also a virtual route issue. The BGP4 (Border Ground Protocol) makes it possible to define more routes to the same network (with a cost price based priority). Peering (handling each other traffic for free), transit (handling traffic for payment), BGP4 knowledge (creation of route tables), AS knowledge (proclaiming of Autonomous System characteristics and the routes to them) and IX (Internet Exchange) knowledge can be severely improved in Emerging Countries (like the Middle East) the next years, and give the Emerging World more digital bandwidth and operational redundancy.

Digital communication: Telephone has become digital voice. Email has replaced letters. Newsletters have replaced mailings. Website's had replace printed media. Speed has become default in communication. Low priced the guidelines. Videocalling is the next step that will be made. Certainly as commuting and traveling become more expensive. Videocalling will be one of the killer apps for high bandwidths. The other killer app will be narrowcasting (in most extreme form 1:1). Broadcasting music radio will be replaced by listening to the play list of someone with the choice of music someone likes. Broadcasting television is already in transite to YouTube type of channels. Multicasting will (one sender, several simultaneously receivers) will replace the old broadcasting technologies for high subscribed castings, like news channels and sports channels. But the tailwind of videocalling will be gigantically. Videocalling will replace travelling enormously: it's cheap, it will be high quality, it takes less time. Videocalling also will replace face to face office meetings severely, as offices becomes less location bounded and each year more and more not location bounded organizational information production, processing,

communication structures. Mobile voice calling has become giant (first low volume by old standards, than skyrocking by GSM, and these days more and more by UMTS/CDMA), mobile videocalling will become giant. The new CDMA (the latest improved version of UMTS) technology allows above high resolution videocalling without any live delay. When videocalling will become regular, office based production (and thereby) commuting will enter a severe declining phase. When managers can look their employees remotely in the eyes, the need for commuting to one shared dedicated office location disappears. Office ICT has become already more and more webbased and thereby location independent.

Digital information: The quantity, quality, depth, diversity, quality and localization of digital information still grow enormously. This is such boost for human development and economic efficiency. It both facilitates both widens the knowledge of each individual as it deepens the knowledge of specialists. It reduces traveling severely. It reduces the energy cost of information distribution severely. It improves mankind's knowledge severely. It diversifies mankind's knowledge severely. It multiple mankind's knowledge severely. The availability of digital information is a huge tailwind in times of PeakOil. This analysis is an example: also based on by the Internet gathered information and also distributed in many ways on the Internet.

Digital trading: Electronic trading resources the energy and also other costs of trading severely. Less shops, less offices, less travel. Information has going digital, communication has gone digital, trade will always follow those two. Capital is the ship that always sails on all information/communication rivers/seas. Digital trading makes products available both cheaper and on more locations. Digital trading is also one of the concepts of cities undermining developments. Trade is one of reason for existing for cities and it goes digitally at high speed. Digitally trade had some sever benefits: Low barriers for both supply and demand, more specification based, more ways of products and services temptation, more cashout efficiency, larger assortments, lower costs, remembering of preferences, extended product information, no closing times, no travel times, free product news feeds, etc, etc. Digitally trade will improved with geo location tools as transport become more expensive. Digital traders will made alliances with similar partners in other areas. Advertising will become more geo location targeted. Geo targeted digitally trade is very cost effective and contributes huge to prosperity levels and by this is a huge tailwind in times of PeakOil. Amazon has filled the gap when other market parties weren't ready. But in 2008 almost any trade and supplier is digital trading ready.

Extended product lifetime: Consumer driven ecommerce sites like EBay gives a huge volume of products a second lifetime. EBay has ended the disposable culture. Increasing product lifetimes by digital (geo location mentioning) database reselling has become normal behaviour for mainstream. The size of this second product life economy is severely underrated by economists. These sites contribute severely to both prosperity levels and to reducing spill levels, both are highly important in times of PeakOil. Used has got its new name: pre-owned.

Operating systems: The development of powerful OS'es (Operation Systems) has lift computer based efficiency enormously. Before Windows every program must address by its selves the keyboard, the screen, the mouse, the scanner, the printer, etc, etc. After the introduction of Windows program manufacturers could focus themselves on their specific program specific knowledge area and leave basic system functionalities to

Windows. This of course made function specific programming a lot more easier. Linux is a same development. An OS is just a well functioning collection of supporting programs around a core program (often called: the kernel). Programmers that develop based on an OS can leave a lot of work just to the OS. Using programs other programmers has ready already. Using third party building blocks, like building a house and not making own stones, but just used by third party manufactured stones. Using other peoples work over and over again, that's a huge blast in efficiency. Making programming specific functions as 'simple' as doing only that.

Digital programs: Certainly there will be new ICT applications to develop, which can take over a lot of human work and hereby increase the productivity (and thereby the prosperity) of nations worldwide, even in times of PeakOil. When prosperity is under pressure, economies need each tailwind they can get, just only for compensation of lower prosperity by increased prices and negative economic growth.

New digital developments: The creation of new digital standard/formats has giving new possibilities. PDF (Portable File Format) of Adobe has driven enormously the online/offline publication of leaflets and books. With one simple action they were fully 1:1 digitalized without any changes in the layout and ready for internet distribution. Adobe has always distribute freely their own PDF viewer (Acrobat Reader) in their own website and in third party distributions (like by Google). After search engines also start to index PDF files, the number of PDF files on the world increased even more. PDF has killed the reduced the volume of the printing industry severely. Flash (these days also Adobe) is also a huge technological platform. Flash needs a web browser (like Internet Explorer) plug-in. A browser plug-in is an automatically installation after user approval request by the first time visiting a website with (for the Flash plug-in) Flash content on it. After the plug-in is installed graphically website's becomes accessible and that by high speed. It combines text, graphics and video on websites, giving them the possibility to go multimedia. YouTube is an example of a Flash driven site. Flash also makes client/server applications possible: displaying dynamical server data on screens based on user live choices. Ajax is a text based protocol for client/server technology. In email POP3 became IMAP (database driven mail storage), making mail more location independent. Address lists became LDAP. LDAP became ActiveDirectory of Microsoft and its (better) competitor E-Dir of Novell (former name NDS). Remote Desktop of Microsoft created online desktop environments. Novell NAL (Novell Application Launching) makes application roll-out complete virtual and easy/lowcost. The combination of E-Dir(NDS)/NAL and Remote Desktop makes ICT complete location independent and virtual/manageable against lowest cost. New PC deployment models only use the OS (Operating System), screen, keyboard, CPU and memory of a computer. There are no local settings, everything is feed from server environments. The most simple to roll-out location less office environment is logmein.com: just work on the office desktop as you're there. An offline example or exponent of this development is the USB stick with build-in OSes like U3. No more carrying around with notebooks in the future. Just your login (mostly supported by a digital file located key on your USB stick or -very bad development- in RFID in your body). But XML is the hugest development in information communication between computers. XML is the technology to displays parts of several data streams of several servers all around the world in one screen (or put it in an other file). Travel sites with live choices depend almost completely on XML. Book online an airplane ticket and you use XML. But XML goes further. XML offers completely virtual data. Also in the office. The new Word and the new OpenText (open source version of Word) are both completely XML designed. The possibilities of XML in information processes are beyond expectation. Here's a completely new world to discover in efficiency. See everything as a white paper

and put there information blocks that can dig/display other information data. XML gives a complete redesign of ICT information architecture. All these new developments has one common characteristic: they facilitate information 'normading', integrated sources, blends, choices into new virtual/actual data for displaying, without any location dependency. All these new digital developments reduce the need for being in a common/dedicated office severely. The make commuting a waste of time. Just work at home: the boss can control by webcam and keyboard logging, or (more effective) by production levels. Or just go to a local shared office building to your reserved or 'just take a free one you like' work desk and visit the office of your company only on special locations. Daily commuting is not cost effective possible in times of PeakOil. These developments are the glue between the (on cheap oil build) pre-PeakOil city focused economy and the (to expensive oil adjusted) post-PeakOil suburb focused economy.

Energy awareness: That PeakOil has happened or is bound to happen in the near future is no longer the opinion of a small group of early adapters, but has become (and will become more) the opinion of voluminous main streams in economies. PeakOil has become mainstream in Q3 and Q of 2007. As always: 25% of the energy needed is spend on realization of awareness, 25% on designing solutions, 25% on financing the solutions and 25% on realization of the solutions. Increased or even general PeakOil awareness is a huge tailwind in the process of addressing PeakOil.

Dependency awareness: Energy deficit nations are becoming more and more aware of their dependency of the good will of other nations. Energy is not something nations can afford not to have. Dependency is weakness. Dependency is also hoping for the best to happen, without taking care of / making it happen. Dependency is about not being the boss in the own house. Dependency is about the possibility that tomorrow the nation's status and future can be severely different. Dependency is for the weak economies, not for strong economies. All governments worldwide therefore will certainly do everything needed to avoid future energy dependency. By diversifying types of energy and suppliers of energy in terms of Carbon. And by absolutely stimulate own soil based renewable energy generation. And by (if desert nations will supply oil or solar energy) maintaining good relations with their governments, economies and inhabitants.

Trade deficit awareness: Energy deficit nations suffering from strong increasing trade deficits in times of PeakOil. Currently 33% of the trade deficit of the US is caused by energy imports, and as the oil price rises, both this percentage and the total trade deficit rise simultaneously. Trade deficits are bad because is a process of building foreign debts, a process with a limited time frame, somewhere, sometime, they must be paid and more quick than possible. Ukraine is a good example of a state with a huge trade deficit with Russia, which is struggling continuous on the cut off edge of payments. Globally governments are very aware of the effect of PeakOil on their trade deficits. Oil addiction was not a problem in times of cheap oil, but in times of expensive oil, it's an expensive addiction, that costs a lot of prosperity. The oil part of trade deficits is just subsidizing the producing countries with the prosperity you've worked for. Own renewable energy generation will be equal to stopping exporting wealth or stopping building external debts. Trade deficits have some elastic, but have certainly and end marker somewhere down the line which results in supply cut, which results in economic chaos and heavy pressure on the government that is cut off by its own companies and civilians.

Budget deficit awareness: Some governmental debt is not a problem: a nation also has it assets (real estate, roads, shares in companies, etc, etc) that cover these debts. But some nations (and not only the USA) have grown huge governmental debts and gets by Murphy's Law (when the going get tough, the tough gets going) also face in the next years the wave of babyboomers retirements, which reduces the active part of the population (and thereby the economy) and increases governmental expenses by monthly retirement checks.

Energy technology: It's very clear that energy technology will become the other frontrunner in technological development, besides bio technology and glass technology. Silicon Valley her research and venture capital is already switching away from computer technology. Google her two founders are huge VC investors in solar energy and wind energy. Energy technology is just in the beginning of its technological growth. Cheap oil had made energy tech complexly fossil energy focused. The enormous price rise of Hydro Carbons makes energy technology very interesting. The energy budget of the world is huge. There is no better industry to work for, research for and invest in than the energy technology industry. A substantial part of the total GDP of the world is spend on fossil energy. The market for energy technology is beyond human expectation. The huge advantages make currently in energy tech research and in realization of energy tech based production lines for the huge global demand for energy technology are certainly a huge tail wind in times of PeakOil.

Bio technology: Bio technology will become the other frontrunner in technological development, besides energy technology. Silicon Valley her research and venture capital is already switching away from computer technology. Bio technology has the huge opportunity to feed its own process energy. For energy intensive processes this is in times of PeakOil a huge technological head start. Bio technology is just in the beginning of its technological growth. After the invention of cheese it was several thousand years very quiet on the bio tech. The huge advantages make currently in bio tech research and in realization of bio tech based production lines are certainly a huge tail wind in times of PeakOil. All fossil energy based processes will be redesigned. Bio chemical processes will take over these huge markets in production processes. Bio chemical technology brings its own process energy. Fossil raw material for industrial processes is not more and not less than just a lot of formerly cheap C and H supply. Bio chemical technology will take the C from agriculture of from the air and the H from agriculture of just from water. Industrial processes based on bio technology brings their own process energy, it will be powered just by the sunlight and its warmth. Bio technology will become the future mainstream production method in all the now fossil C and H supply based production processes. Bio technology also will just out phase some industrial processes. The fertilizers of the future are not made in factories, but just on the soil, but algae's that are spread on the soil before or simultaneously with sowing.

Glass technology: As element prices skyrocking, silica and glass (sand based) technologies will become more and more important. Elements and energy scarceness and high prices will lead to substitute material technologies. Just because both production and economic processes that are based on low element/energy prices will face a difficult period in times of PeakOil. Element use has double head wind: rising element source prices and on top of that rising energy prices. This because the purifying process of natural appearance of elements to commercial/use state takes a lot of energy. New glass technology will replace iron and aluminum a lot because the commodities that are used in glass manufacturing are widely (as in: unlimited) available everywhere in the world. The

desert states will become the new China of the world: producing al kid of glass products (there is enough sand and cheap CSP energy in the deserts). Glass technology is certainly a major economic development in times of rising element shortages.

Finance model: Financial engineering is needed and already done. The Finance Model attached to this analysis will give you information about a global model for instant huge energy investments (both large central, as massive decentral) in large numbers worldwide for the total amount of one year world GDP. In a model that is realizable in a severe by subprime caused down writing hit financial market. It's based on a combination of backwards guarantees, forwards guarantees, specification focused fixed amount tendering and performance bonds, all covered with governmental and commercial insurances. Making Action Plans is one thing: Knowing how to address it and stimulate the needed changes. Knowing how to finance the investments needed for these changes is an other thing. This analysis has a Finance Model attached. Use it to make your Finance Plan for the transition of your economy, government, company and household. The attached Finance Model is suitable, even in times of a wounded financial world by the American Credit Bubble Crisis. The Finance Model is based on both backwards and forwards guarantees, backed up by commercial and governmental guarantees. It's the only model is suitable of facilitating the huge capital demand needed for global transition away from Expensive Carbons. The attached Finance Model has two main benefits: 1) facilitating the finance of huge central energy investments for each economy worldwide and 2) by financial engineering attached to those huge central investments also creating a national equity fund of the same huge size as the huge central investments for making financing massive decentral investments possible.

Scenarios

Doing nothing
Extending the past
Reinventing prosperity

Doing nothing: In times of sharp prices rise of energy and materials continuing in doing what we did in times of cheap energy and cheap materials is not a very rational valid option, but yet we still do it. What we are doing currently is completely designed for / based on cheap energy and cheap materials. When these two pillars are going the building that is based on those two is due to collapse. Absorbing this two huge (world changing) facts into our minds, companies and governments takes time. Filling our economic 'car' gets more expensive each day, leaving less purchase power for other economic 'things' in all budgets and the road we're currently on is ending and gets more less better / more rockier each day. This is shocking. We need some time to adapt this. But it is so simple. When everything we do is based on cheap energy, and cheap energy is gone, doing things differently seems the (only) right thing to do. Everybody not in denial of the fact that cheap energy is over will approve this. There are not many believers in cheap energy left, not in science, not in corporations, not in governments. Everybody agrees that energy will be severe more expensive in the future than it was in the past. That's quite something. Without awareness nothing happens ever. Awareness is the birth ground of any action. But not everybody (only some early adapters) has thought over the consequences of this expensive energy fact. We just know it only yet for several months and had also to go trough the denial phase first. Excepting the fact that the fundamentals of our current prosperity / economic system have gone away is not an easy thing to do. We have fight a stupid fight, not in solving it, but in denial, ignoring and joking around it, as the cheap energy based economic building is collapsing above our heads. It looks we are became stupid by denial. Giving our brains a blank spot holiday on the huge effect of energy prises/shortages on our lives. But the price reality has guide us very quick trough it. Prices don't lie, they educate. What if we do nothing? Just (against better knowledge in: cheap energy is gone) imaging that nothing needs to be done. Just let's do this now. Waiting for governments is stupid: they as slow as turtles if they ever will move. Our economies will collapse (higher energy prices, less other purchase power, end of economic growth, smaller economies). Our governments (and social/health/ public transportation systems are over due to 1) enormous economic stress 2) weak governments with no answers that live in the past 3) enormous amounts of geopolitical stress. The huge prosperity growth of the last decades is (beside to the availability of cheap energy) also due to the relatively geopolitical rest that was on the earth. The European countries has become prosperous when they stop fighting to each other. This geopolitical rest is one of the main environmental drives behind the recent prosperity boom. Like political environmental changes has boomed Russia and China. But 1) When financial markets collapse due the housing bubble and many banks/currencies will go bankrupt due to their investments into the US financial system and the US arrange a collapse of the dollar so that they not have to pay their debts, these countries will seize all US foreign assets and all US transport equipments (ships/planes) like USSR assets were seized globally after the collapse of the USSR, literally hold/brake global trade severely. 2) When energy and material prices first double and than triple and economies get into serious decline, the nations with a strong army (and the ability to pay for that army: not the same: see the USSR army around 1990) maybe will go to war, to 'get' the energy and materials they needed. Doing nothing ends in national chaos and international war. Period. Wishful thinking will not change this perspective. Take away

the energy and our economies/societies stand still the same day and collapse the next day.

Extending the past: Extending the past in times that the conditions of the past are gone can only be done with enforcing severely (not teasing, but hitting/smashing) military/economic/political power. The global consequences are severe and it still is a dead end street that just will be enlarged by / gets some extra time. The fight to sustain the unsustainable is unsustainable. Carbon based energy is becoming scarce and is finite and will burden any economic process that use it intensively. It's not that other nations consumes 'our' energy and resources we though we could buy abroad cheap. Finite resources are finite. It's so simple, yet proven yet hard to understand (or must we say: hard to accept?). The past equals not the future. Just because the main thing that powers the past is not available in the future: cheap carbon energy. Extending the past equals invading Afghanistan, Iraq, Iran and Venezuela. Extending the past is cutting in / severe damaging future perspectives. The choice for extending the past is easy to understand: we know what we have (or must we say: had), we don't know what we will get. But realism must tells us that the global carbon resources are below half level /over their top and that the carbon road is getting rocker each day for our 'economic SUV', buying 'gas' become more expensive each day, there are less 'gas stations' each day and the change we run out our 'gas' or are confronted with physical 'gas' shortages for our current 'economic SUV' grows each day. An 'economic SUV' with supply/affordable gas do not move very slow, but just don't move. Extending the past has no future.

Reinventing prosperity: The current economic model that was (not is) fueled by cheap and abundant energy is bound to be replaced with a low energy model or it will collapse automatically by energy prices/deficits. Transition to a new economy, based on low energy demand is what we need if we want to reduce turbulence and abolish collapse. Maybe we find a new cheap/abundant source of energy in the future, that should be nice, but for now we must deal with the current situation and maintain as much as possible prosperity in energy expensive times. After decades that growth in prosperity equals has risen with growth in energy demand, we must find maximal prosperity against lowest energy demand. This by the price rise of energy. Energy prices are damaging / are contrary to prosperity. Energy gives economic growth, energy prices give economic decline. This must change if the wants prosperity. The price of energy we can not control very good (only by technology), but economic models we can change (not with state forced power, but just by choices based on energy prices). Is low energy prosperity possible? Yes, but we need to a lot of things quite different than we do today. Major changes? Transport and Travel. Local prosperity will be the economic concept of the 21st century.

Solutions

Awareness
Policy
Reduction
Conservation
Efficiency
Changes
Technology
Management
Finance
Models

Awareness: Without awareness just the market (demand and supply) is leading and will hit hard out of the bleu. Awareness give the possibility to research and react. Awareness about PeakX (Peak Everything) is the door to maintain prosperity. Without awareness just the situation (sometimes luck, but by PeakX mainly bad luck) runs the show.

Policy: Governments have a huge obligation to tell their economies (companies and households) the truth about PeakX. The problem is that the above mentioned problems (less awareness, much simplicity, misplaced focus, passive policy and absent drive) are double in size by governments. Governments have the habit solving the problems of the yesterday today and are well-known of their lack of actual or future analysing capacities. We don't need visionary governments: actual governments would be a major positive change, than the current yesterday cuddling administrations. And yes, of course we need smart governments that leads threats into opportunities, but we all know that's only wishful thinking. Governments only can steer, not power changes. Governments that don't see the difference between those two will not be able to address this huge issue. Dear yesterday addressing governments, air travel/transport and traffic congestion are over soon due too high energy costs of travel/transport. Forget new airports, new harbours and new highways: they are answers on the questions of yesterday. Cooping with a transformation to a wealthy low energy economy is the main theme from now on. How to do it? Make the governmental advertising agency and the media rich by quick intensive info campaigns? First: Governments better stop throwing with money (as severe difficult times are ahead). Second: Governments and information is called propaganda and if you loose your attention a second the next thing they tell you that Solzhenitsyn is a bad man (USSR) or Bin Laden did 9/11 (USA). Governmental propaganda cost taxpayers money in times of budget problems and we must not get used to a communicating government even if this time the message is alright. How to get the word out that the time of cheap energy is over and that only less energy use guarantees prosperity from now on? Governments can just propose one law: speed limit reducing legislation. If they do so the media and opinion makers will take the awareness from there on over. And the speed limit reducing legislation? We don't need that: filling up the car hurts already everyone, people drive already severe less due the high gasoline/diesel/LPG prices.

Reduction: The most simple and basic reaction is using less of everything. But without changes that leads to less prosperity and less welfare. Reduction and conservation are important, but are not capable to change any substantial size in demand. Reduction will

always be powered by economic reasons: current level becomes to expensive. Reduction is not the answer, it's the result.

Conservation: Conservation is beautiful: give the same prosperity/welfare for less energy/resources, but conservation only have marginal effects. Example: an airplane that uses 10% less fuel is a huge improvement, but that 90% fuel use will still be too expensive in time of expensive energy. An airco that operates by a complete different technological concept that uses 75/90% less energy is a huge improvement (see the Outliners section of this report for some data on the inventor). These type (25-10%) of energy quantities can be harvested in a sustainable prosperity focused environment. Conservation is not the real answer, it's just an nice side effect of high prices. Operational/technological changes hold the real answers.

Efficiency: Efficiency is about improving devices that they will do the same job with less energy. Efficiency is mostly about technology, but also about organization. There are two types of efficiency: the gradually improving type and the huge steps forward type. The gradually improving one we get for free: every technology improves itself on time. The huge steps forward is about total different approaches that leads to real big improvements of efficiency at once. This type of efficiency improvements demands for free spirits that are not comfortable on the by every one taken roads. We need these people more than ever, but they are (due to their -needed- characteristics) also difficult to handle (as in bad in group culture and bad in communication). Still each company and each government must cherish these type of people, as they are the once that could explore whole new roads in technology/organization.

Changes: The real answer is changes. Changes that conserve prosperity and welfare by less energy and resources use. Changes are the real challenge. Chosen changes are/feel positive. Forced changes are/feel negative. Example: stopping with commuting will generate a huge budget space and give as bonus more free time and less exhaustion each single new day again. Both prosperity and welfare increases by this change.

Technology: For reduction, conservation, efficiency and changes we need new technologies, technologies that serve our needs/demands/wishes. A simple example: a new design of the airco for the not tropical part of the world uses only 10-25% of the energy used in old design airco's. An other example: remote desktop (or xml based) office technologies combined with VOIP/videocalling makes geographically distribution of office work possible, making office production location independent, preventing commuting, making or homework, or work in local shared office possible. Commuting to an office in the city is no longer needed by these technologies. We need new technologies and we need to start use/implement already existing technologies.

Management: Changes (organizational and technological) needs management. Real management, not only the type that 'just runs the store', but leadership direction management, changing handling management and operational management. Current more operational focused management culture has a leak of direction leadership and a lack of changing handling management. So we need to breed/attract the two other needed management types/cultures. This is a problem, as all three types of management are conflicting with each other, yet things only go right if these 3 different types of management will find a modus to work with each other. Only true natural born leaders

can achieved this impossibility. Management is the most hard challenge in the transition processes we need to undertake due the Energy Crisis.

Finance: As we must change our energy use and invest in energy harvesting, we need finance. Not expensive finance, but affordable finance. The Energy Crisis is the biggest challenge for the financial industry. An industry that is terminal ill due the Credit Crisis. Solving the Credit Crisis is needed to be able to address the investments caused by the Energy Crisis. Energy investments is where the Credit Crisis meets the Energy Crisis. Later on in this report solutions for the Credit Crisis are listed, but we need an Energy Fund, guarantying banks for XX till 100% the energy investments their customers made. The solution for the Energy Crisis is 1) don't expecting that everything stays as it is (transport and mobility will be reduce very much, due to the energy intensively of both, which make them contra economic/prosperous), 2) heavy energy investments by each company, household and municipal. Finance gives decentral power production capacities, makes economies strong and resilient. The only way to overcome the Energy Crisis is massive local energy harvesting investments.

Models: Models offers instant applicable solutions. The right directions with all needed instructions and documents attached. The benefits are huge. Compare it with publishing. These days you can publish instantly. You don't have to invent a computer, a keyboard, a screen, a mouse, nor a text processor, a webpage builder, an email program and a printer: you just use them: they are invented yet and are being improved daily by a crowd of specialists worldwide. The same applies to models: They are concentrated, pre-produced, already adjusted and debugged knowledge and experience in one. One simple example: you want to build a windmill in your village/city, or you want to make it possible that each house/building owner in your village/city will have the opportunity to install solar/wind power technology with the highest output for the lowest price, or you want to build huge items like a nuclear power plant, an new technology based heavy crude oil refinery, a huge windmill park or a huge CSP desert farm: Models will give you the knowledge, technological options, designs, instructions, contracts, finance models and documents you'll need. From A to Z, from alpha to omega, from idea via realization till maintenance. Models are open source knowledge and experience openly public audited by specialists (with room for all remarks of the users). Models speed up changes enormously, without loose of quality. An other example: contracts: If there where standard contracts, legal costs will be reduced severely, without any quality setback, but with even quality improvement.

Actions

Basic
Generic
Specified
Facilities

Basic: Actually the basic 'to do list' can have just only one item: tell your company/government/household that the energy prices will triple at least. The rest goes from there. People are intelligent, the solutions to ease the pain will come forwards massive after that. See the basic to do list with it's one item as the trunk of the tree. The enhanced to do list are the branches of the tree. The specified to do list are the sub branches of the branches of the tree. Or in computer terms: root, folder, file. It all start with just one thing: telling that energy prices are tripled and that they will double each year till for the next years. The easiest way to do this (as in start the discussion): just only talk as government on two items that could hit the budget/behavior of people/companies: 1) roadpricing by gas tax increasing (not by any expensive not needed -as PeakOil will lead the way very soon- technology) 2) energy pricing realized by the energy companies (not by any expensive not needed -as PeakOil will lead the way very soon- technology) or 3) by installing reducing the maximum speed limit with 5 km (not more, the purpose is just initiating the discussion, not the speed limit). All three items are not really needed -as PeakOil driven price increasing will lead the way very soon-, so only mentioning these 3 (in phases: gives 3 changes) is enough. The only purpose is getting peoples/companies attention to the energy problem and communicating about it. People/companies/municipals are all smart enough to take it from there. Advertising campaigns of the government are expensive, takes more time to initiated, needs total political support (can not be initiated by just one party), less shorter and has less impact. Just telling people the truth about the Energy Crisis by just tipping 3 subjects, without any propaganda characteristics. And yes, in the Communication Model are more advanced ways of communication describe: from a schoolkid infobox (with energy generic and conservation information and an age adjusted book and a cheap solar power battery loader as physical communication item), to a household infobox (with commuting reduction and energy reduction information and a cheap solar battery loader as physical communication item) and a corporate infobox (with commuting reduction and energy reduction information and a cheap solar battery loader as physical communication item).

Generic: Planck Foundation has attached to the Global Future Analysis and the Global Resources Analysis the development of 12 Generic Models that can lead and support governments and companies in actual changes: the Action Model, the Communication Model, the Localization Model, the Production Model, the Mobility Model, the Transport Model, the Currency Model, the Privacy Model, the Peace Model, the Political Model, the Knowledge Model and the Finance Model. These ten generic models facilitate/support a quick transition from high energy prosperous economies to low energy prosperous economies. They are basically very simple (and therefore very practical): Where we use energy and can we avoid this by using other models that shorten physical distances and/or technologies that prevent travel/transport. Examples? Commuting is a not wanted side product of prosperity: it's a waste of energy, plus time plus money, so how we: skip the need for it by bringing the job back to town, job exchange models, remote desktop technology, sub urban joint office buildings? Airtravel will become to expensive for Joe

Doo: how we give Joe Doo and his family the best holyday they have ever had more close to home, so without the energy expensive 747 engines involvement?

Specified: Each industry will have its own challenges in dealing with the Credit Crisis, the Energy Crisis, the Water Crisis and all the attached/associated crises. Planck Foundation offers all companies and types of industries to start their own company or industry platform in just a few minutes. Companies can join the industry platforms they're interested in, also can company employees do so privately.

Facilities: Planck Foundation wants to support the accessibility and use all these three type of actions (basic, generic and specified). Not only by research/production/distribution of the Analysis and the attached Models, but also by putting serving Facilities online. The Facilities are an online technological environment that serves all both local as sector based initiatives.

Results

Peace
Prosperity
Welfare

Peace: When economies are transited to low energy economies, the demand for energy reduce, the reasons for possible energy conflict reduce, the chance for energy conflicts reduce, the number of actual energy conflicts will reduce.

Prosperity: When cheap oil defaulted, prosperity can still be available, but only when the old high energy economic model will replaced by low energy economic models. Future prosperity than certainly can be maintained. Adjusted sustainable prosperity than will replace temporary cheap oil prosperity.

Welfare: Prosperity is not only about procession. Prosperity is also about having a good life, having time to relax, to maintain relations. Economy has been too long single focused. The low energy economy is per definition a more welfare focused economy (as energy and materials are more expensive).

Directions

Advanced localization
Advanced globalization
Finance solutions
Energy technology
Bio technology
Food technology
Water technology
Silicon technology
Mineral technology
Knowledge pollination
Geopolitical downsizing

Advanced localization: As energy will become expensive due the Energy Crisis, the most recognizable change will be: shorter distances. Transport and travel are very energy intensive and thereby will be considered as not economic. These two simple lines will create a whole new concept of economy/society. Local which was only the local we sleep, will become the location where we live, work, relax, entertain, etc, etc. Our world. And we will make it a good world. Local communities/economies will enhance severely. Local will be equal to vibrant, to value for money. In times of high energy prices: Less travel is more to spend. Less transport is lower prices. Less time demand for travel will boost time to live. Food (good: high quality and abundant in flavors) will become more important. Eating will become equal to advanced/relaxed social life. Advanced localization economies have more time for advanced societies. Playing soccer and all other sports will gain enormous in popularity. Music and the pub will regain enormous in popularity. Local governments will become the most important governmental layer. Any governmental layer above the local level will be seen as just servicing. The power will be local. Any product or service will be produced as close to the demand as possible. Local assemblage of global designed products will be leading. China will no longer be the workplace of the world as energy (and not labor) will become the most important cost factor. The jobs will be brought home due to this. Literally. To the hometowns of the world. Both quality of innovation and life will become the focus areas of any town. How to build and maintain local low energy prosperity. Live in times after cheap energy will be different, but certainly don't have to be less prosperous and even can be better than in times of cheap energy, if we do the right things. The river will have a rocky part for a while, but good local teams with good captains will guide their local ships to new economic destinations.

Advanced globalization: As energy prices rise, the current globalization model will collapse. What is the value of free trade if transport is to expensive? The rising energy prices has rose import barriers to never seen high levels before. Not by governmental protectionistic import legislation, but by transport costs (due the high energy price). And why produce on the other end of the world if the main production cost swifts from labor to energy, which has a global price? Air travel (business and leisure) will become a very expensive habit. The price mechanism will reduce the demand for air travel severely. Airlines, airports, seaports, containerships and trucking are 'no go zones' for smart investors, shareholders and banks. The Energy Crisis is the end of the old globalization model. No government recognize this and they all expanding airport and seaport facilities, giving them in the future repayment and interest burdens without turnover driven payment power. Will globalization end? No it will find a new model. Energy will be the driven force behind this new model. The current USA politics is a (not very nice)

example of this. Energy deficit nations will go in to bilateral relations with energy surplus nations. Water (as in: food) deficit nations will go in to bilateral relations with water surplus nations. Mineral deficit nations will go into bilateral relations with mineral surplus nations. Bilateral as in: good for both. What has the deficit nations the surplus nations to offer? Not simple markets, as markets require currencies, payment power, and de deficit nations will have less, less and less of it. The deficit nations has to offer: New knowledge/education, mature organization models (management), mature marketing models (brands, regardless the 'no logo' movement), mature political models (democracy, not by war, but by choice), credit (?) and equipment. Equipment is the main trade enabler of the future for deficit nations: difficult to produce (not easy to copy), small changes gives much better performance (technological headstart), easy (relatively cheap) to transport and capital intensive (as in: giving much purchase power for the deficits). The deficits are not markets, but trading partners. In PeakX, everybody is a market, but the more important question is who has the purchase/payment power, due economy like the whole world or due currency/credit (like the US, who can buy without real economy, just based on currency/credit)? The market polarity change regarding energy, mineral and concentrated water (food) is something that has no place yet in the minds/perception of the deficit countries, but will hit them severely, just for the reason the they don't see it and thereby don't anticipate to it. What is advanced globalization more than market polarity change, rise of commodities, transfer of wealth, rise of new powers, new winners, new losers, major decline of the supra national structures, major rise of bilaterals and bringing the jobs back home (the rise of national production as energy not labor becomes the main production cost facet)? It's about 1) Communication: Mainly about video communication. Video calling and video conferencing will rise parallel with the energy price rise. 2) Models: As global production based structures face energy price rise that undermines their profits and market shares, the global brands will turn to virtualization/fragmentation. The global brand/marketing will stand, although global brands are threatened by rapidly increasing consumer lifestyle fragmentation/segmentation: the one brand fits them all times are over). The global design/innovation within a brand/manufacturer will stand. The production/logistics will change. Fragmentation in production locations: much more, as close by the markets as possible. Multinationals must reinvent themselves in a new global/local production (and even brand) balance or they will die.

Finance solutions: As the dust of the Credit Crisis falls down and the air start to clear, vision/sight get better. The balance sheet damage caused by the Credit Crisis to the financials will become clear. Cooking the books is a time limited art of accounting. Everything will be done to keep the contract hubs (collection places of financial damage) in the air, the in terms of real valuating completely unreal 'Ambac and Fannie Mae show' must go on, stopping it would be fatal. In reality the damage 'has hit the structure'. Greenspan has the US government advised to initiate a financial 'A Team'. As the damage will come to the surface financials will fall in numbers like apples from a tree in a storm. First due the Credit Crisis balance issues and second due payment defaults caused economic turbulence/decline due to the combination of the Energy Crisis and the Credit Crisis. Governments will one way or the other pay the bill of each and every burned asset. The US government (in her effort of preventing damage explosions) even pays on this moment the cash for paying dividend to the stockholders of Fannie Mae (dividend payments while a wave of looses come to the surface and the balance sheets are a fruitcake: just to prevent a stock price collapse). By all these (huge) governmental inventions, currencies will get less value (inflation we call that) and in case of a bankruptcy of the USA (and the attached fall of the dollar) many other currencies with loads of virtual dollar backing will go down either. Solving the consequences of the Credit Crisis will burden the USA and the dollar more than possible/reasonable. And this

happens in a time of an Energy Crisis and an upcoming (agriculture downsizing) Water Crisis. It's not the USA who decides to initiate and manage by themselves a Chapter 11 model, but (as the US needs foreign capital every day like oxygen) it are the lenders who will stop lending at a certain time. Than the Open Market Committee will be the only buyer of US treasuries with phony digital/printed money, causing mega inflation in a time of already stagflation. The purchases of the Open Market Committee is the reason why the fall of the US and the fall of the dollar will be at the same time. When the dollar collapse (taking governmental and GSE issues bonds with them), many other currencies that has invested in those (like the Euro) will go down to. Out of this chaos a new financial system must be born. Led by the BIS (Bank of International Settlements). The US will do anything to get in the driver seat of this new solution and/or profit maximal of it, offering premiums to the old dollar asset owners (fruitcaking the new currency on its birthday already: nothing will ever change), but the world will no longer the power/moral of the US concerning maintaining financial stability, while at the end of each period other nations has to pay the bill of the US expenses. The new financial markets will be fragmented, with values closer to the realities. Not transparent securitized values will have no attraction at all anymore. The dual system (central bank ran by bankers and government ran by treasuries) will be abandoned. Two captains on the same ship leads to problems and it's always the fault of the other. Joined responsibility is no accountability at all. Than central banks will not buy treasuries anymore (and thereby governments will not pay a large part of tax income to the central bankers as interest). Cities will create their own currencies. Or the kWh will be the value, a value that only can be eroded by more energy availability. Energy as central role in money creation. 100% exact to measure, transportable, digital transferable. There will be public database registers with kWh debts, preventing more debts than affordable. Money creation will be done by the fact that a third party will be accountable for the debt. The fractional banking system will be abandoned. An other possible (not energy attached) model could be that city governments will (limited by own legislation) create money (take care of the money supply) by their investments and spending (no taxes and if they do right, less inflation). Governments (national, regional, local) that have no currency/financial backup plan in case of the collapse of the US and the dollar will experience the smash against the wall when it's needed. Just like no energy policy will give the same effect: a big smash against the energy wall. Financial solutions will cover, currency (easy value traffic), finance (credit), savings (people's trust in it will be very low) and governmental income/tax (unneeded expensive projects and wasting money on local scale will not be possible). Governments will reconsider their tasks and act more wisely/smarter. Government for money will be the slogan (achieving large effects by smart less input by choosing right policies). Government will be about: how to get the best society (with no compromising quality standards) by organize internal local society. Governmental budgets (as in: taxation) will be severe lower. Financing will be done completely by the Raiffeisen model: only good investments will get the actual needed backing of people with actual financial values, so that people with actual liquidity surplus can facilitate the capital with low risk.

Energy technology: As carbon energy gets more and more expensive, it's logical that energy technology will become a booming sector of the economy. Development of technology that harvests (taps) other forms of energy will explode. Driven by the greatest changing force on earth in everybody's live and in every economy: capital drain reduction. The expensive carbon energy will drain each and every life, household, business, government and economy. Energy technology will be more diverse as any other technology ever, which is explainable by the fact that everything we do/use demands energy. Maintaining the huge energy demands of the interstate highway traffic and interstate/international airplane traffic will not be possible on post carbon energy

harvesting: these two are too energy consuming and are designed on an oil price of $ 10 per barrel and will thereby abandoned by oil (and thereby related: energy) prices of $250-$500. Activities that are to energy intensive will be lowered in times of expensive energy. As earlier the availability of cheap and abundant energy fuelled our prosperity, we will enter a phase where we will learn the art of low energy prosperity. We face a boom of energy technology that or conserve, economize and recycle energy, or harvest energy out of other sources. Almost all these technologies will be local focused: facilitating the its installation environment. Maybe we will find ways to 'tap' new abundant energy sources a low price. Than energy will become cheap and abundant again, see Sources part of this Global Future Analysis for descriptions of these technology. But for now: energy will be scare and thereby expensive and energy technology booming. And yes mankind will find a way to tap earth's energy pools, and energy will become cheap again and the hydrogen economy will come some times. But for now: we face very expensive energy and therefore major energy use reductions in households and by companies, other economic/societal models and a wide variety of energy technology.

Bio technology: The only bio technology that really matters is the one that by algae/bacteria takes N out of the air (abundant available there) and put in the ground (where is a shortage of it). As the future of the current way of producing fertilizer gets darker every day by the high energy demand of its production process. Mankind must find an other way to get the N (abundant available in the air) from the air into the soil (where it's needed for food grow processes), or face famine. Period. Everybody who understand current agriculture and current fertilizer production understand/underwrite this. The smartest way is to 'move' the production process to the location where the N is needed: the soil. Finding, isolate and grow algae/bacteria that are capable to do this should be the salvation of our food production. The holy grail of food. Leaving all fancy gen modification muddle far behind. Algae/bacteria that duplicate themselves in/on the soil (!), use solar light and its conversion into warmth as dual facet sun fuelled power sources (!) and just do the job in fertilizing the soil by capturing N from the air into the soil, without any carbon fuel demand. Spraying it before/during sowing on the soil or by giving seed an algae/bacteria containing starch based 'jacket' before sowing. Natural selection based algae/bacteria research/selection technology will be very high tech assisted by catalysts, by energy (lasers, frequencies, voltages, resonances). Algae/bacteria technology based on GM (gene modification) is too stupid for words and will only be done by biotech gamblers with no sense for any consequences. GMO should be forbidden by international law. That algae/bacteria technology is possible is showed by the yeast industry that already over a century delivers 'local' micro biology in bread all around the world.

Food technology: As economies go local, the demand for high quality and very diverse local produced food (vegetables, fruit, herbs, but also fish and things like flowers) grows severely. Low energy demanding and low space demanding food producing technology will rise. This development will be lead by the Grow|OS. An open source agricultural operating system for high tech greenhouses. Grow|OS is based on 'crop profiles' which are the best grow variable of all grow facets placed in a time line. As in: than x, in value y for period z. And this of all grow facets. The knowledge of the farmer caught in a digital file. Grow|OS interfaces between the crop profiles and the installed greenhouse equipment. By Grow|OS, crop profile manufacturers don't have to address all tens of thousands types of equipment, but just can feed general value settings (temperature, light color, light intensity, air flow, etc, etc, etc) to Grow|OS and on the other hand: greenhouse device manufactures (sensors and grow facet influencers) just can interface

very simple to only one OS, instead of the need to interface to tens of thousands of crop profiles. Grow|OS will give abundant, low energy demand, low space demand, so cheap and very diverse food production. The diversity is also because Grow|OS can divide greenhouse in small apartments, making a very diverse crop assortment available and because Grow|OS can let plants grow off-season and off-climate. Both the crop growth knowledge as the crop maximization knowledge are 'caught' in one digital file. Fish will be grown local in fish farms. Meat cattle will be held local, but very expensive (due the cereal/meat ratio of 5:1). Bio industry based meat will become very expensive due the cereal/meat ratio of 5:1. Global cities will import meat from countries with a lot of land and water where the cattle eat only grasses and no cereals (like Argentina, Australia, New Zealand and Russia), if the have the purchase power for it. Meat replacers will become more popular as the price of meat goes to high levels. The old ones and also new types will both accelerate in market supply/demand.

Water technology: As local sweat clean water becomes more scare, it become more important. Roof water will be stored in large underground concrete tanks and used by households and companies. Sewage water will be cleaned by household/company based waste water purification units and be used for watering of gardens. The functioning waste water systems will be certified by a certification model and controlled each year by the supplier or his replacement. Households and offices and industries will have solar or geo thermal water warmth/cold solutions. Agricultural water irrigation systems will be more intelligent, with drop irrigation beneath the surface and the frequency of drops adjusted to the outside temperature. Grow|OS will also make growing vegetables and fruits in tropical regions under ground with low water demand as artificial light by LED becomes more and more energy efficient and thereby cheap.

Silicon technology: Silicon is the second most available element on earth (25.7% of all mass on earth is silicon) in the form of soil and rocks. Current silicon technology is just a baby in size, with glass as most wide know and famous result. When other minerals are becoming more and more scare, we will find many new ways to utilize the most abundant element on earth. Silicon technology is only just started. Silicon (Si) will replace iron (Fe) and aluminium (Al) more and more. A big push in new silicon development will be the building of CSP (Concentrated Solar Power) plants/farms in the desert, where the plant will be build out of the silicon of the sand of the desert. Cement (and it's deferred form: concrete) is an already more than 150 years existing Si/Ca based technology. Glass fibers will replace iron in concrete structures more and more. The Petronas Twin Towers in Kuala Lumpur are two very high rise sky scrapers build without a traditional steel core, based on a special high pressure resistant type of concrete. A more popular word for silicon is glass. Glass technology will give mankind very cheap abundant availability/utilization of silicon as building material.

Mineral technology: As minerals become more and more scare and thereby expensive (due to universal market supply and demand reasons) seawater technology will grow. The sea is just a diluted liquid form of anything available on the planet. Exploration of these diluted but very abundant source of minerals/elements will not be done by distillation of seawater. This because water molecules absorb very much energy per 1 degree temperature rise and due the fact that energy will be expensive and the dilution is quite severe. Seawater technology will focus on alternative ways of harvesting these diluted minerals/elements, developing mineral/element 'magnet' technology. Technology that will attract a specific kind of mineral/element. This could be by catalysts, by energy (lasers, frequencies, voltages, resonances) and/or by natural selection based algae

research/selection. Sea silk will the name of the organism based type of sea mineral harvesting method. Mineral harvesting algae technology based on GM (gene modification) is too stupid for words and will only be done by biotech gamblers with no sense for any consequences. GMO (Genetically Modified Organisms) should be forbidden by international law.

Knowledge pollination: Knowledge, innovations and inventions is what we need by entering a new (low energy based prosperity) chapter in the history of mankind. Loads of knowledge, innovations and inventions. How to pollinate innovations and inventions with knowledge. How to bridge the gap between the academic world and the business society? The first solution is to cut budgets of the academic structure severely, as will be done as nations gets into financial problems by the Credit Crisis, the Energy Crisis and all the attached other crises like the Currency Crisis and the Governmental Crisis. It's very clear that budgets and knowledge, innovations and inventions are not linear lines. The academic world and the business world don't speak the same language. Not bad, as long that there are good interfaces between both worlds. The optical compact disk (CD) is not invented by Philips, but by a Canadian professor. Philips has used his blueprint for optimizing his technological model. The next decades will be like the last decades of the 19th century: very much focused on both general science as actual devices build on the new general science discoveries.

Geopolitical downsizing: As local economies/societies will become the major facet of peoples lives, national politics will become less important and geopolitical issues will become almost irrelevant. Globalization as we know it will be redefined. Concerning information, music and knowledge we will be more international than ever, but funding wars will become to hard to do. The military flame will be extinguished by the effects of both the Credit Crisis and the Energy Crisis. Local governments will not fund geopolitical wars where they never will get any benefit from so ever. War is business and if there no business in war, there is no war. In an advanced local driven/fuelled economy/society, geopolitical wars are just considered a 20th century curiosity. Stupid nations will fight for the last barrel of oil, smart nations invent oil/gas/carbon independent prosperity. When almost everything needed by the above developments for the lowest price and the best quality local/regional can be produced, international trade will only be done in equipment.

Outliners

- Introduction
- Heinberg
- Kunstler
- Klare
- Faber
- Simmons
- Pickens
- Gandhi
- Mandela
- Wijffels
- Gore
- Gorbashev
- Putin
- Reagan
- Thatcher
- Hubbert
- Friedman
- Klein
- Paul
- Kucinich
- Huebner
- Nadar
- Orwell
- Shi
- Vogtländer
- Eberhard
- Vandy
- Tabaksblat
- Rifkin
- Lee
- Dendermonde
- Ludlum
- Solzhenitsyn
- Haggag
- Cerf
- Berners-Lee
- Birn
- Al-Issawi
- Torvalds
- Bonhoeffer
- Shiva
- Hopkins
- Lawson
- Dylan
- Rogers
- Soros
- Bentham
- Xuren
- Radman
- Al Suwaidi
- Leistra

Sarkozy
Chávez
Rockefeller
Koppelaar
Campbell
Deffeyes
Middelkoop
De Putter
Murphy
Quinn
Planck
Einstein
Tesla
Kawaga
Derksen
Allen
Schumacher
Raiffeisen
Drafting

Introduction: The scientists/leaders who deserve certainly credit as awakeners, standtakers and/or future blueprinters/outliners in the eye of Planck Foundation are listed below. Just researching their work and weighting it by your own background/ situation/vision can result in finding several new important ingredients of our economic/societal future. This list of outliners is not a left wing or right wing collection, but just a list of people who have or has have a changing influence for the best.

Heinberg: An actual American, ecologist, Peak Everything analyst, writer/speaker/thinker/analyzer and a little too pessimistic on the powers within local finance and low energy economic models and low energy technology.

Kunstler: An actual American sociologist, writer and also a little too pessimistic on the powers within local finance and low energy economic models and low energy technology.

Klare: An actual American geopolitical science professor who has analyzed very deep the future consequences of current economic developments.

Faber: An actual critical Swiss economist, who has a good view on behavior/importance of financials, commodities and governments. Has describe the economic live cycle of gloom, boom -and the overstretching and mental power slowdown attached to boom that both undermines boom- and doom.

Simmons: An actual American energy investor who dare to take and defend a PeakOil stand based on industry data and started investing big in renewables. Also a major critical of the official foreign governmental oil reserve data, which in his view are inflated to increase their OPEC production quotas, or to improve their chances of getting loans from the financial world.

Pickens: The current 'godfather' of the energy industry, 81 years old, who really has done the media job of PeakOil and promoting real huge wind/solar energy generation plans.

Gandhi: An Indian leader and statesman in decolonization effected changing times, empowering local people and local economies back in the 20th century.

Mandela: A South African former freedom fighter, prisoner and later statesman, empowering all different types of population in a less conflict economic growth process at the end of the 20th century.

Wijffels: A board member of the WorldBank who has the courage to chair the investigation into Paul Wolfowitz's ethics that ultimately led to his ouster as president, regardless Wolfowitz was specially appointed by the Bush Administration and Wolfowitz was an important member of unilateral focused but very influential PNAC (Project for a New American Century). Wijffels promotes ethics in both leadership and in global banking. Wijffels is also putting effort in transforming the WorldBank to a less political favored organization, arguing that whenever a country was being discussed at the WorldBank where U.S. interests were at stake, everyone would "skirt the issues" and that these attitude effects development possibilities of nations.

Gore: An former American politician, plays a major role in the re-awakening of the fact that there are borders, unfortunately offering not any practical solution or economic blueprint, but doing once again a terrific job with the 'We" awareness campaign for realizing a carbon free US within 10 years.

Gorbashev: The leader of the USSR as this nation got bankrupted, who had chosen not to end the fallen empire with geopolitical violence but with geopolitical détente, an example some current empire leaders certainly should consider. The USSR has external failed by their participation in the weapon race, Afghanistan and low oil price. The USSR has internal failed by the fact that the political organization get overloaded with faxes from around the country that pictured a different (official party reporters by-passed) picture of the state the nation was in.

Putin: An Russian statesman, very pragmatically, called the day after his inauguration the people who put him in power and told them friendly/resolute that the Russian state needs income from the resources former governments has sold to them for symbolic figures and put Russia and the Russian people economic back on the map, and had as a very absolute -with all it's backsides- leader the wisdom to put a more democrat minded successor in his seat for building more democracy, more freedom (of press) and economic development after restructuring resources and government and paying -literally- overnight all foreign debts caused by former presidents. Under Putin, Russia abandon military power (no more than just a flight when there a NATO drill) and gain economic/political (as in gas/food and later-on maybe also water export) power. Russia and Brazil are the winners of the 21st century: the have abundant everything a nation needs, from energy, by water to food. Putin's pragmatically attitude is best shown in his response when the US builds digital SDI bases near Russia: he called Havana and

mention building bases again on Cuba. Putin has pulled Russia out of the post-communism misery that NATO not address in 1989. Putin was not very nice for media, opposition and the businesses/businessmen in natural resources who don't want to give the state a controlling 51% state share in their operations. By putting the young and dynamic Medvedev to the front as his successor Putin signals that Russia maybe will get back its media/politic diversity it has in the '90ties again.

Reagan: An US president in the '80, persistent in policies to drive the inefficient socialistic economy USSR into bankruptcy by 1) a weapon race and by 2) manipulating the oil price to lowest level possible by a pact with the Saudi royal family. Ending/winning the cold war by this and gave the post WW II world a new chance. If timing was different Reagan certainly has helped Gorbashev overcoming the internal post Cold War / post communism issues (see Reagan's Let Poland be Poland initiative), something the Reagan's successor (President H.W. Bush) unfortunately hasn't done. On the other hand is the Reagan Administration responsible for the stop of any non-carbon energy research and tax credits for solar/wind the Carter Administration had initiated based on the 'Global 2000 Report to the President' report. The huge reservoirs of Alaska's Prudhoe Bay, the European Continental Shelf and the Mexican Cantarell came online and the Western World goes into sleep for a generation till oil production stop rising in 2005 and was real crude awaked at the end of 2007 when oil prices flirted with $ 100 per barrel barrier and mid 2008 when oil prices flirted with the $ 150 per barrel barrier.

Thatcher: An female English PM with who had severe personality orientated power, who broke the back of the unions, who had in those days reached a too powerful level and non constructive attitude, by which they in a time of economic headwind made the situation more severe than it was already, by doing this purifying the union world from non constructive power play just for the power.

Hubbert: A post WW II American geologist who was the first who really understood carbon depletion and make very reliable calculation models for it, the founder of the PeakOil theory, which has calculated in 1956 accurately by his model both the US Peak in 1970 and the World Peak on oil production 'in approximately half a century', since 2005 the oil production levels are not much risen but the oil price did severely since than. Was very well know in the US during the 1973 oil crisis and the 1979 oil crisis and had severe influence on the Cater Administration. Has been forgotten as Reagan took over Office and Prudhoe Bay in Alaska, Cantarell in Mexico and the Continental Shelf in Europe came online. Hubbert has been re-discovered by Campbell and his ASPO.

Friedman: A very famous American economist, a major influencer of economic politics of governments in the last quarter of the 20th century. Received the Nobel Memorial Prize in Economic Science in 1976. In Friedman's view governments only could disturb economic process for the worse. Friedman can be seen as the counter weight of Keynes who promote the concept of governments being the economic motors instead of the market. Friedman's success is directly related with the defaults of earlier over-Keynesian governmental policies and the fall of communism as it final climax. The re-awareness that the market (the economy) and not the government is the motor of any sustainable economic system is very much accountable to Friedman. His semi-followers has mould his economic view with total opposite (Keynesian) influences. Leading to not a retracting less activities managing (the market more space giving) government, but to

governmental funded privatization (as in: one 100% Keynesian) which was even worse than before.

Klein: An actual American/Canadian sociologist/writer which has written some very important analyses on modern society, No Logo and the Shock Doctrine are her two master pieces, you don't have to agree with her conclusions to be intellectual feed by her analysis.

Paul: An actual American senator who wants to abolish income tax (as in: no longer working 3 or 4 months each year just for paying the government the money that they spend), by reduce the impact of government on society/economy severely in redefining the governmental functions and has no interest at all in 'being the voluntary police man of the world' with its attached price. Want small governments that honors both markets and people by honoring people's earnings.

Kucinich: An actual American democratic Representative who has filled in June 2008 35 articles of impeachment of President Bush and stated: "President Bush deliberately created a massive propaganda campaign to sell the war in Iraq to the American people and the charges detailed in this impeachment resolution indicate an unprecedented abuse of executive power.".

Huebner: An American physicist working at the Pentagon's Naval Air Warfare Center in China Lake, California. According to his research on patent numbers in relation to inhabitant numbers the rate of technological innovation reached a peak a century ago and has been declining ever since. Huebner sees the end of innovation looming dead ahead. His study is published in Technological Forecasting and Social Change.

Nadar: An independent (non Republican and non Democrat) American politician who has stated over and over again that both the Democrats and the Republicans are over-lobbied and therefore severe malfunctioning in his point of view. His message is mainly pro virgin like characteristics of government, serving the people and not serving the interest of lobbyists. Nader wants to reduce federal power in favor of more 'short distance' power, as the more power has a distance to the voters, the more power gets accessible for lobbyists and erodes from its mission and the less it serves the voters. Votes for Nadar is the reason that Al Gore was not elected in 2000, Kerry not in 2004 and will maybe the reason that Obama will not be elected in 2008. Maybe the Republicans must fix the 2000-2008 created/started issues in 2008-2012 and Democrats must not want to do this, because they are too huge for policy changes and Democrats could face issues they don't want to face. And if the Republicans and Democrats don't discover low energy prosperity, than maybe Nader will be elected as president in 2012 (or earlier as the next Administration could not fix the in 2000-2008 created/started issues), Focus on low energy driven high prosperity local development is the huge white spot in the US electoral map, that gains overwhelming size with every dollar the oil price rises.

Orwell: A post WW II English novelist, writer of the two classics Big Brother and Animal Farm who has learn the postwar world that state control is always only beneficial for a small leading group and is a threat to an open on fair competition based innovative

society, he described very well the hunger of states for control and not for on freedom of thinking based innovation. Maybe the most important line in his 1984 book is the one where one of the characters says: 'maybe there is no war out their, maybe they just make it up'. A line to remember in times where all civilian rights are have been broken down due the War on Terror. Don't loose what you've fight for in centuries. Freedom is lack of fear for the government. Freedom is the basic requirement for building prosperity. Freedom is not a nasty word. It has been the goal of the founding fathers, the reason they left their former homelands.

Shi: An actual Chinese businessman. The founder and CEO of SunTechPower. The richest man of Mainland China. Wants to build the biggest sustainable energy corporation of the world. Produce both for export and domestic use. Domestic sales has boosted by the Chinese Renewable Energy Laws.

Vogtländer: The chairman of the National Energy Counsel of Holland. Has a scientifically view on energy sources, use, conservation and diversity. Able to explain all of this in a way everybody understand. Is a governmental energy policy advisor.

Eberhard: The founder of the Tesla Motor Company. The first company that attracts a lot or media exposure with the concept of electrical powered driving. Also the company that has made electrical driven cars 'sexy', by making a beautiful high level sports car as their first series. From there the want to downsize in luxury and to upscale in market volume. Their business plan has perfect stages.

Vandy: An actual English/Dutch inventor in water technology, who understand the sanitation improvement and food production impact of water on the world very good. Inventor of the most compact low space taking (big internal surface creation) waste water purifying technology. His technology purifies any type of waste water till even 95% at the source of the waste water with low energy costs and low space demands. His invention can give each house globally a green productive garden by invisible watering and invisible fertilizing it. Something that will gain huge popularity as food prices will skyrocking.

Tabaksblat: The chairman of a Corporate Governance Code Counsel in Holland which has made a corporate governance model to which more and more international corporations that are operating in Holland applies to. The need for some kind of corporate governance came clear due to some excesses. The last CEO of Fokker sold the company to EADS, filled for bankruptcy of the company as DASA (now Airbus/EADS) didn't support the company and thereby removed a continental competitor for DASA by the Trojan Horse trick), and after this just went to a new job CEO by Daimler Benz (which was the main DASA shareholder) in Brazil. The last CEO of KLM sold the company to Air France for an amount that was in cash available in the company, so Air France got a huge and profitable company just for free. The last CEO of World Online did a similar deal with the cash loaded company World Online. The last CEO of ABN Amro (after years of strategically bad management and also a building up of an e 81 billion US mortgages related CDO asset) decided that the end of his regime also the end of the independence of the 9th largest bank of the world should be. All these CEOs just used their positions in strong companies just for their own benefit (as in: huge exit bonuses) as they where the owners and not the managers of the corporations they lead and showed no compassion

at all for the corporations and the customers, employees and shareholders they were responsible for. Tabaksblat his corporate governance code was a response to these egoistic corporate governance excesses, where malfunctioning just hired-in CEOs walked away with bonuses 20 times their year wage while wrecking the companies they're supposed to care for. A more simple solution than a complex corporate governance code had been just a direct stop on any one time bonuses, switching to just life time bonuses. CEOs than will practice both short term and long term corporate policies and start to address issues like the effects of the Credit Crisis, the Energy Crisis and the Water Crisis, as they (similar to customers, employees, financiers, shareholders) have an interest by the long term health of the corporations they served.

Rifkin: An actual American scientist (also author, speaker and advisor of governments) who promotes a massive decentral renewable energy production model and a hydrogen/HVDC/HST based global energy storage/transport/transmission model.

Lee: An African American female Representative that has the courage to vote all alone against rushing into a war after 9/11. She had more 'balls' than any man ever will have, or otherwise she is recalcitrant to the bones. She is notable as the only person in either chamber of Congress who voted against the authorization of use of force following the September 11, 2001 attacks, which isolate her back than severely, these days the cards lay different. Lee has vocal since than critic of the Afghan War and the Iraq War.

Dendermonde: An American/Dutch novelist, who wrote in 1963 the classic 'The world goes down by assiduousness', which is an ironic written plea for sustainable prosperity and life quality.

Ludlum: An American author who has written a lot of novels mainly on the relation between technology and power. His last book 'The Prometheus Deception' is published in 2000 and was about powers that purchased database related companies to get information on politicians to blackmail them and force them to cooperate with them. Ludlum illustrates in novel style the dangers when technology joins power, of a digital DDR.

Solzhenitsyn: An Russian writer that was famous in the 20th century in both the USSR as in the rest of the world. He had the courage to criticize a powerful totalitarian regime from within and was abandoned to Siberia and later-on exiled. Under Gorbashev returned to his motherland.

Haggag: An Egyptian Ambassador related to the African Society who has really an empowering vision on Africa and on political/economic independency for African nations.

Cerf: An American computer network protocol programmer who together with Bob Kahn wrote the TCP/IP protocol, which blast packet switched networks. No expensive fixed point to point connections where needed anymore, networks became cheaper and more redundant in connection paths.

Berners-Lee: An English computer scientist who invented the HTML tags and by this invented the World Wide Web of computer pages as we know these days. HTML made also Web 2.0 (characterized by the fact that ordinary people supplies the content) possible and Web 2.0 can be seen as the first real power to the people technology by its media democracy characteristics. Mass media are replaced by media engines based on Web 2.0. Mass media gets less and less media consumption time in favor of strongly fragmented sub group based Web 2.0 engines like YouTube, Google, FaceBook, etc.

Birn: An American internet database programmer who started Google together with Larry Page. Powered by the rise of the Internet they have made information more accessible then ever seen, facilitating an exponential blast of human knowledge. Unfortunately they cooperate in national censorship programs.

Al-Issawi: An Quatrain businessman who founded El Jazeera in 1996 and did a very good job in realizing a new facet to global media diversity.

Torvalds: A software engineer from Finland who has wrote/cooperate in realizing the Linux OS since 1988, which was the break trough of the open source software platform.

Bonhoeffer: An German traditional pastor that had the courage to resist the Nazi ideology and practices from within Germany. Someone who dared to name wrong things wrong under a very repressive regime.

Shiva: An Indian female activist who promotes biodiversity (and thereby also social diversity) as the best concept of using the world and give nature back the resistance against crop diseases.

Hopkins: An actual English author/thinker in the field of enhanced local low energy prosperity. Writer of the Transition Handbook (ISBN 978 1 90032218 8). Started in 2006 in the town of Tottness (8,000 inhabitants) in the UK a local prosperity movement based on transition away from carbon.

Lawson: An English famous chef that promotes quality in food, cooking as satisfaction and eating ambiance the same time at home with family and friends. Quality food, cooking and eating ambiance will gain enormous in popularity due to PeakOil as people will less travel and more will enjoy local life.

Dylan: An American singer/songwriter who was famous in the second part of the 20th century and make music again to something close to people. Music close to people is something that will gain severely in importance in times of advanced local economies. Music will become a more important facet of life than it is right now.

Rogers: An actual American investor. Rogers and Soros had together the first investment fund which results give them both a load of capital. Rogers is a critical observer of both Wallstreet (loads of employees in Maserati: the signal that somebody's money is burned

without any moral/value look on money) and the FED (wrecking the dollar and fuelled a non fundamental driven boom). Rogers looks to real values/fundamentals instead to trends. Rogers view on commodities and agriculture is full fundamentals based. His view on Airlines and China are to optimistic (two no go areas: due the same fundamentals). His view on commodities is actual and clear: structural up with sometimes some dips in this (driven by supply and demand) continue to higher levels going prices.

Soros: An actual American/Hungarian billionaire who use substantial parts of his capital to support the building free and open societies in former communistic countries the old fashion ways (not digitally by Web 2.0), but by centers) where free and open is not granted the way it should be. Money meets vision. Digitally achievement by Web 2.0 technology could multiply the reach and efforts of the Open Society Institute and the Soros Foundation Network severely.

Bentham: An actual English board member of Shell. Who was in charge of the production of the 'scramble or blueprint' energy future scenarios of Shell. Blueprints will not happen: Why? 1) the blueprint scenario total ignores the market driven reality of energy (more demand than supply). 2) the blueprint scenario total ignores the proven incapability of governments to create a global mutual understanding and to define global mutual policies in the current structures. The blueprint scenario is an unrealistic dream. The blueprint scenario is in concept even more a nightmare than a dream: only a world government could realize it and also/right then fairness will be disappear. Not according Orwell, but according history. Scramble is just reality and the smartest way to go. The smartest always are the winners. Socialism has proven to be the most inefficient way to reach economic goals, or, the most efficient way to reach only fractional parts of the targets. Competition is the answer. In carbon purchase contracts and carbon purchase relations, in transition away from carbon, in conservation, in developing low energy prosperity and in exploring new energy sources. Only competition gives progress in adequate solutions. Shell's call for the blueprint scenario is the most undemocratic action ever made by Shell.

Xuren: The actual Chinese Minister of Finance. Blocking actively any more Chinese capital injections to technical bankrupted financials (see the PingAn/Fortis case) and thereby the only outlook on loads of fresh capital of the banks (the Arabs will not act anymore as the Chinese have stopped acting: therefore is the Chinese trade knowledge too high valuated. Demanding almost weekly from the US federal government treasurer (Paulson) the assurance that the Chinese investments in US treasury bonds and GSE bonds will we protected. The man who literally holds the future of the USA federal government in his one hand and the value of the dollar in his other hand. When he stops buying US treasuries, the US government will run out of money without one month. When he starts to actively more diversify his assets, the dollar will collapse instantly. So much for American Independency. Making debts doesn't equal independency anymore, that was back in the old days, when the US dominated the oil trade. Cash is king. Xuren is the real president of the USA. Xuren will not accept an US own initiated/managed Chapter 11 scenario, that will clean the US debt overnight. Xuren is also the man who sees the bill of the energy capital drain of China each day and thereby the man who will force the Chinese government and economy into new energy technology. The man who will not rest before China will be equal to new energy technology and the energy capital drain will stop.

Radman: An actual English/Yemeni banker, board member of Tadhamon International Bank, who promotes the Islamic Banking model globally on seminars for the banking industry. Islamic Banking is a banking method characterized by the absolute absence of interest, so mainly a full equity driven way of finance: Providing risk capital in exchange of a share of the profits for a period. Or leasing equipment and real estate. Islamic banking doesn't need the fractional banking rule to exist. In a world with limits, fractional banking is no sustainable answer due the fact that is based on a continuous local economic growth process (for creating interest payment capacities). Islamic Banking could also develop a Raiffeisen like model, in which Islamic Banking and local development finds each other. Islamic Banking could certainly contribute to the corporate finance instruments worldwide.

Al Suwaidi: An Abu Dhabian financer who heads the biggest Sovereign Wealth Fund (SWF) of the world (Abu Dhabi Investment Authority). SWFs are mainly funded by oil/gas export incomes and their capital assets therefore could rise yet much more further the next years. SWFs are walking away of foreign debt paper as main assets and more and more invest in global corporate shares and industries based on carbon energy like oil refineries and fertilizer plants. Moves of the SWF are (by their capital size) major market moves in the global financial world. SWFs slowly invest more and more of their carbon income in non carbon (renewable) energy facilities as most their nations has a lot of sun and a lot of desert. When SWF step major into renewables (as they will do when oil reach its maximal affordable value, when that ever maybe), the sustainable energy world would find a huge partner in the SWFs.

Leistra: An European inventor who has made the traditional airco for land climate environments 75-90% more energy efficient by a combination of a diabetic and non-diabetic cooling process.

Sarkozy: The actual French PM that al by himself blew up the future of the EU by his initiative for the Mediterranean Union. Ending the unity of the EU by giving many EU countries a partnership in a comparative union. The power of the EU can be divided in before (strong) and after (weak) July 13, 2008. Real benefits are starting to play more and more the major role in regional politics and geopolitics.

Chávez: The actual President of Venezuela. A man of (national and international) conflict, but also a man that has empowered Central and South America in his fight against neo-colonialism of both the USA and Europe on the South American continent. Also the man that has nationalized every major industry, fought with Exxon on the value of their nationalized assets in courts in different place of the world. In charge of the largest oil reserves outside the Arabic World. Has said that he would stop the export of oil to the USA is they will attack Iran. Road creator for Arabian and Asian influence in South America. A man with a discussed reputation, but national as international, but certainly a man that has changed the geopolitical map of the world very intense.

Rockefeller: Neva Rockefeller is an American economist and a fourth generation member of the Rockefeller family and by this also shareholder in Exxon Mobil (as one of the companies that was formed after the anti-trust legislation driven split-up of Standard Oil in) She is also the director of the Global Development and Environment Institute. She is the initiator of a shareholder driven strategy change of Exxon ("the current management

has nothing in common with the company founder"). She wants to change the strategy of Exxon and by this changing the current oil companies into renewable/sustainable energy companies.

Koppelaar: A young Dutch geologist which has founded PeakOil Netherlands, maintains peakoil.nl (each top level and/or language should have a PeakOil related site) and publish every month "Oil Watch Monthly". An example/leader of a new generation that will steer to a post carbon era. Co-author of the book 'The Permanent Oil Crisis'.

Campbell: A German/English geologist which dust off Hubbert's peak-oil/bell-curve theory for the current generation (after it was forgotten during the Reagan Administration and the Alaska and North Sea oil reserves exploitation) by publishing 'The Coming Oil Crisis' together with Jean Laherrère in 1998. Founded the ASPO (Association for the Study of Peak Oil and Gas) in 2000. Organized the first annually ASPO in 2002. Campbell will go into history as the main Peak-Oil awakener and has already in 1989 warned for the economic effects of Peak-Oil with an adequate transition policy away from oil.

Deffeyes: An American geological professor at Princeton who wrote in 2001 the book 'Hubbert's Peak' and in 2005 'Beyond Oil' and was leading in bringing Peak Oil back on the US agenda.

Middelkoop: An actual economic anchorman of a daily economic news program on Dutch Television. Early adapter/researcher on the effects of dollar value decline and commodity price rises on economies, governments and businesses. Co-author of the book 'The Permanent Oil Crisis'.

De Putter: An actual Dutch documentary maker who has made several documentaries on energy, capital, directions and geopolitics which has been aired globally. Putter can be seen as a documentary maker of actual happening future development.

Murphy: An actual American environmentalist, the Executive Director of the Arthur Morgan Institute for Community Solutions and the author of "Plan C – Community Survival Strategies for Peak Oil and Climate Change". Runs an organization that promotes local solutions for peak-oil related issues.

Quinn: An actual American writer and documentary maker. She co-wrote and co-produced the documentary, The Power of Community: How Cuba Survived Peak Oil. A documentary about Cuba's artificial Peak-Oil in the early '90ties, caused by the collapse of the USSR. The documentary can be found on YouTube by searching for "cuba peakoil". Cuba went into some difficult years (and by the US import legislation was unable to earn import power by exports) but survived. In her documentary she shows historical what the effects of Peak-Oil are on an economy and on companies and households.

Planck: A passed away German scientist, the founding father of the quantum theory which is the foundation of all the not warmth based energy technology for the 21st

century and 'discoverer' of Einstein, who used his own position to give Einstein much of his audience.

Einstein: A passed away German/American scientist in the 20th century, a brilliant mind who dared to think in complete freedom and than by backwards engineering tries to find proof / backing concepts for his imaginary visions, unfortunately not many scientists have the gift of imagination and the courage to use it before getting / during being scientific, Einstein his imagination caused a jump in science.

Tesla: A passed away Serbian/American scientist on the break of the 19th and 20th century, a brilliant mind who invented AC power, the electrical grid (before the AC grid invention of Tesla, the DC grid needs a power generation station every 2 miles), the electro motor (just draw the design in the sand with a stick during a conversation with a friend in the park), radio -as confirmed in a Supreme Court decision some months after his dead in 1943 was Tesla several years earlier with radio than Marconi and had Marconi copied Tesla's technologies-, microwave, neon, seismology, remote control, robot technology, radar, high efficient hydro electro turbines, energy weapons, SDI, HAARP and many, many more devices we or use today or never want to use ever, truly the father of the Second Industrial Revolution by the fact that he designed both the conduction/electro motor and the electrical AC grid that powered it, leaving coal/steam behind, the guy who before the 20th century started just almost by his self designed the main technologies that could/would drive that new century, an opponent to Einstein's vision on quantum energy, very interesting and could change our total view on quantum physics ones again, both the Casmir effect and the proven zeropoint energy -proven by the fact that Helium stays liquid on to absolute minimum temperature- are two of the supporters of Tesla his quantum science direction-, by his more than people could handle intelligence, some strange neurotic habits and the fact that he could sit for hours and days completely 'into' the phenomena of electricity, sitting between the fascinating high voltage flashes he created by his coils in his lab, that also was located in an area with also many thunderstorms with many thunderbolts, theorizing to understand electricity, he was by this all more and more often called the mad scientist -even pictured in a Superman carton feature movie in 1941 as such-, in reality he was his time almost 100 year ahead, understood the science and potential concepts of energy as not many after him, his views and visions on energy, ionosphere, solarwind and the quantum theory has gain more and more research in the last decade and his focused on renewable energy more than 100 years ago was unique.

Kawaga: A passed away very unknown Japanese aristocratic scientist 20th century who studied on Princeton in the US in 1914-1916 when Einstein was very well analyzed at Princeton, who designed (and not actively promoted) a remarkable quantum model, argued that atoms of elements were only/just organized energy: ahead of his time, he brook totally with the physical concept in the quantum science, promoting his vision that physical science and chemical science just different types of energy science are, turned his back to his aristocratic background, stayed scientific active but became common known in Japan as he choose to for impacting society instead of impacting science. Became a famous poet and the father of the Japanese labor unions, the Japanese coops plus and funded the Japanese Anti-War Movement in 1928. Was the leading anti-war pacifist during a very heavy by military powers dominate WWII phase in Japanese history, which was protected by his aristocratic background and the sympathy of the people.

Derksen: A professor at Radboud University Nijmegen in Holland, which is very passionate about finding -and thereby researching- quantum based answers to the Energy Crisis. In his vision/model the whole universe is an energy model with compressions and dilutions, compressions we call mass and dilutions we call vacuum, by enough energy compression mass the characteristics of touchable matters, the zero-point field is the highest form of dilution / lowest energy value that is possible by the current size of the universe, quantum physics and the universe describes very much similar energy fields, energy harvesting is about utilizing the energy differences between these compressions and dilutions, by the second law of thermodynamics energy always flows downstream -from high to low-, energy potential is within the energy difference and some of it maybe can be harvested, this is the reason why converting mass -compression- into warmth -dilution- releases so much energy.

Allen: An UK professor lecturing on the School of Oriental and African studies of the University of London, who has made the world on a scientifically way clear that agriculture export is just concentrated water use export, by introducing the virtual water science: a way of measurement of the water that is embedded in the production of foods and industrial products. A measuring theoretical science that will severely will practical influence the global production locations of meat (from bio industrial wheat based to open field grass based). He has received the 2008 Stockholm Water Prize Laureate. Quote from the SOAS website: "Water rich nations, such as the US, Argentina and Brazil 'export' billions of liters of water each year in exports, while others like Japan, Egypt and Italy, achieve water and food security by 'importing' that water."

Schumacher: A passed away German/English, economist, advisor to British National Coal Board from 1950 till 1970 and also a writer, his economic concepts are very suitable (almost even designed) for a low energy economy, because his view was that each industry should develop the most close to local model/size and that production design and actual production could be separated (back than a revolutionary concept) for giving it the best of two worlds (large and small, national and local, international and national).

Raiffeisen: A passed away German major of first a small rural village and later on a city and accidental inventor of local banking back in the 19th century: Raiffeisen had severe more influence on the world than Marx: Without Raiffeisen cities could not grown the way they did: by Raiffeisen his banking model rural area's start to produce severe food surpluses. His impact on the 21st century will be again certainly very huge: his finance model is what the local focused economies need.

Drafting: Dig into to the work and publications of the outliners (if there is info of them available online -not always the case: some have died long before the internet began, others are not publishers- by Google, Wikipedia and YouTube). Draft the outline for your city and nation. Invite the alive outliners that can guide your companies, organizations, universities, municipals, governmental structures in the creation of the own future outlines. Most of them are very busy, so make clear why you need them to come to your conference to draw their part of your future outline.

Credit

Definition
History
PeakCredit
Crunch
Causes
Solution
Timing
Future
Geopolitics
Replacement
Proposal
Alternatives
Barters

Definition: What is credit? Credit is the possibility to buy goods/service without having the capital for it. In short: extension of the possibility to own/consume. It's evident that before we can understand both the nature and the effects of a Credit Crisis, we must understand what credit is. One of the strangest things in modern society is that almost 98% of the people knows nothing about on of the most important influences on their life: the thing called money. Where does money come from? A question each kid asks his/her parents around the 10th year of their life. In 98% the parents must say: we don't know. This lack of crucial knowledge on one of the most important facets of economic life must be addressed first. If we don't know credit, we don't understand the Credit Crisis. Credit is about capital supply. Capital supply is about money supply. Money is about currency. A good currency is about a widely accepted/valued money type/standard. A bad currency is about a not widely accepted/valued money type/standard. A good currency has just the right level of money supply. What is the right level of money supply? The level that any by two parties wanted transactions can be done easily in that currency. What is a too low level of money supply? As transactions will be done in other that the wanted currency because the wanted currency is not available enough due a shortage in supply (relative to demand). What is a too high level of money supply? As there is more money in the market than transactions needed, and the value of money starts to decline by this oversupply. Oversupply always lower the value and price of anything. Oversupply of money also lowers the value and price of money. What is the value of money? The fact that you can do transactions with it. What is the price of money? The price of money is called interest. A percentage per year you get from if or pay to the bank (depending if your balance by the bank is positive or negative). Capital is about possession. Capital can have several appearances: real estate, goods, rights, services and money. Non money capital (real estate, goods, rights and services) can be easily exchanged for money: that's the function of money: easy exchange of goods and services by a commodity (money) everybody wants. Why do we want money? Because it's easy to transport and we can exchange it any time we like easily for products and services. Why do we want capital? Because it gives us use/comfort/image or interest/profit in return for the ownership. We can let other people do the work and profit from it. Here capital comes very clear to energy, as by energy we multiplies man labor hours severely: energy use is poor man's capital. Credit is borrowed capital in a currency.

History: How does money supply work? Where does money come from? In our current fractional banking system money comes from credit. From Credit? Yes, from Credit.

Governments has installed bank legislation (a set of norms any bank must apply to). In the fractional banking based system you go to the bank and ask for credit. The bank researches your credit records (by credit without collateral/pledge) and/or coverage collaterals (by credit with coverage of collaterals/pledges) and approves your loan and than just puts the loan facility to your account. Was this money there earlier? No, it didn't exist till than. Will the money be there as you paid back the loan? No, than it stop to exist again. You've got your loan and you can spend it. So in the fractional banking based system, money supply (money creation) is done by loans by banks. You spend the loan, but not entire (or maybe totally not) by customers of the bank. Most banks have an account by each other, and if not (in case of the situation that the receiver has an account by a strange foreign bank) they know an other bank who has mutual accounts by each other. You pay interest to your bank, your bank pays interest to the bank where the money is transferred to. Banks each day balance all this interbanking accounts or by triangle transfers or by international banks like BIS (Bank of International Settlements). So the bank that issued you the loan created the money, but got in return a debt by the banks or the people you spend you're the loaned money, on which your bank must pay an interest if this amounts can be mutual balanced direct or anytime in the future. Of course the BIS wants every Central Bank in the world to join BIS. This because accounts to banks that are not by covered by a connected Central Bank must be settled always, real instead of virtual values flows out of the system (and out of the BIS transaction universe). Joins a Central Bank the BIS than the BIS decides when and who accounts are settled. The incidental/temperately eaters of not contractual allowed credit (as in: are forced to the IMF and its regime for balancing their accounts. The historical 'structural big eaters' of credit (as in: US) can no longer be forced to pay, or their credits are pushed/tempted to buy US governmental bonds for their account settlement request. The US has some severe attractive financial tools no empire ever had: 1) A currency where that has a huge place in international trade (dollar was the oil currency) in a growing global economy and whereby is a huge global demand and thereby continuous more money could be brought in circulation without very less negative effects. 2) A deal with some bankers (installation of the FED in 1913) that they would print the money (and gets in return the interest on), if they by trading keep the market and thereby the demand of US Treasuries alive (something a government could not do by themselves as it than will considered as monopolistic market influence under the anti trust laws), this cause inflation, but guarantees sale of any issued governmental bond. 3) A huge influence on the Central Bankers Bank (the BIS) so that accounting debts to foreign banks could be settled by pushing US Treasuries/Bonds as payment. Each empire taxes the world, the USA empire her taxation of the world is called dollar, US Treasury Bonds, the FED and the BIS. It's no coincident that the nations that want to abolish the dollar or doesn't want to loose their own policy in demanding settlements of accounting debts and therefore doesn't want to join the BIS regime are called the axes of evil: they undermine the financial roots of the empire as they undermine the role of the dollar and demand for daily payment of accounts and are not in the BIS 'honor for paper' culture. They are the leaks in the system. The Credit Crisis of the early 80ties was not solved by re-payments of the debts, but by the Arab world joining the BIS, making the first PetroDollar wealth of the Arab world (the bank account statements) more virtual. The owners of the FED and later-on also the BIS are the real rulers of the world, democratic political structures just may wash the car, but not drive him. For the real powers in the finance industry banks and currencies are not assets, but more production tools. Real values for them are in political seizing and currency valuating untouchable relatively easy movable assets mainly in over the world stored gold and a little in diamonds (the emergency 'cash' in a very small black velvet bag). The FED and the BIS are the big pushers of the dollar and US Treasuries, watering each currency and each balance sheet globally. Of course the bankers take their fee on each transaction. Of course the by them run (in some countries not owned) Central Banks donate a symbolic profit fee to the government that has

chartered them, but the real profits are in the transactions (both voluminous and profitable) and foreknowledge (both voluminous and profitable and not in the operation. Foreknowledge is a huge income source of the BIS members: it gives them the opportunity to earn riskless lots of money of for example the decline of the dollar in August/September 2008 in a way nobody else could do. Just by the fact that only they knows and the world doesn't know yet the fact that the dollar would be supported by Euro en Yen sales of the Dollar. Demanding transparency of the Central Banks and the BIS administration is without purpose, as the profits made are in the deals. Demanding transparency of the Central Banks on meeting reports is without purpose as from then on the meetings doesn't cover the real issues any more, and the real issues will be set in an other location, time and setting. The Credit Crisis is more about the unwillingness of (foreign) banks to extend account levels to yet higher levels and the unwillingness of (foreign) banks to buy dollars of treasuries for these debts. This possibility was the reason that the US always has growth more than any other nation, they had 3 huge tailwinds, tailwinds that now are weakening. Foreign reserve currencies can adopt dollars and US Treasuries till 100%, but after that on that front the grow is not longer possible. Foreign banks can accept dollars and US Treasuries to only the level the can sell to their customers. The FED and the BIS where just one big oiled wholesale/distribution organization of US governmental/banking debt with the shareholders earning on each transaction. Any manufacturer and/or brandowner (even super distributor/brander Coca Cola) can only dream about such a well functioning product distribution system. This is the real reason behind the Credit Crisis. Therefore the Credit Crisis can only be solved where it has grown: in/by the US. A new president could both fix the Credit Crisis as break the fee engine of the banks and do that with causing chaos. The owners/runners of the Central banks are not the only people who can design financial engineering (financial intellect is common, not contained in boardrooms of banks). The (financial engineered) way out of the Credit Crisis without chaos is described in the proposal part below. We must avoid the chaos of a crash, as in crashes some value will be lost, but most of the values just will be transferred, robbing ordinary people of their assets, life savings and pension funds. Crashes do not effect wealth of real bankers (as they only own the banks as a device not as their wealth). Crashes makes the real rich substantial more richer as real assets outside money can be bought very cheap in times of crashes. One nice fact on this subject: Russia has paid its debt overnight and doesn't want to do anything with the BIS politics. An other nice fact: the importance of the dollar (future lower importance of trade) is under siege of the importance of energy (future growing importance of energy). Energy is the currency of the future, as international trade will be lowered severely (due to energy prices) and energy thereby become the most important international commodity (beside commodity food and equipment). Money will loose the battle with energy. The Credit Crisis is all about drying up of the foreign feed of wealth to the US (global GDP growth, dollar market share, reaching the plateau of new Central Bank connections to the BIS, maximal dollar levels in other currencies reserves, maximal dollar exposure of commercial banks and pension funds). The dollar will not be the currency of energy, robbing the US of one of its imperial taxes. For more on credit, the players, the cards and the rules: Perform your own research: Put some time in YouTube, Wikipedia and Google for researching history FED, history money, history credit, history currencies, history BIS, bank international settlements, etc. Indian women holds 13% of the worlds gold, for pension purposes: making them the riches middle class of the world in real, untouchable/ and easy moveable assets and/or purchase power. No fancy salesmen in fancy cars, no fancy offices, no fancy marketing, no fancy boards and no wrong investments eats out their pensions. Less down side risks and much upside gains. The real powers in the financial industry have interest in stimulating general economic wealth, as this increasing the transaction fee volume and the debt (and so: interest) volume. The real powers in the financial industry sees economic processes like the business cycle of their processes: grow/operational phases and decline/harvest phases:

anticipating by foreknowledge based sales and profiting by foreknowledge based speculation and by cheap purchases due value collapsing. The whole gold standard discussion is not valid. A currency is all/only about trust in a) a government that issues the currency or b) a group of bankers that issues the currency. Mixture of both gives responsibility at all (shared responsibility is no actual responsibility at all). The gold standard discussion is only used in economic dire straits to seize public owned gold. The USA has done that in 1933 (everybody must turn-in their gold). Just forcing people to put their wealth full into local assets and local/foreign currencies (as in: into the by the financial industry orchestrated system). The history of the Central Banks is a research object on its own. In the US the history is: A bill initial drafted by the main bankers passed in Congress on Christmas Eve (when almost everybody was on Christmas Holiday) after Wilson already has agreed to sign the bill after that. A quote from one of the FED history pages on the Internet: "The Glass Bill (the House version of the final Federal Reserve Act) had passed the House on September 18, 1913 by 287 to 85. On December 19, 1913, the Senate passed their version by a vote of 54-34. More than forty important differences in the House and Senate versions remained to be settled, and the opponents of the bill in both houses of Congress were led to believe that many weeks would yet elapse before the Conference bill would be ready for consideration. The Congressmen prepared to leave Washington for the annual Christmas recess, assured that the Conference bill would not be brought up until the following year. Now the money creators prepared and executed the most brilliant stroke of their plan. In a single day, they ironed out all forty of the disputed passages in the bill and quickly brought it to a vote. On Monday, December 22, 1913, the bill was passed by the House 282-60 and the Senate 43-23." The bill transferred the right on money creation from the Government to the FED. Instead that the government could create money (and if they do that wisely -as in: don't finance expensive wars with it- could benefit the state and the economy), now the banks could create money. The largest customer of the banks where the national states. While the national states before the installation of Central Banks could create money by themselves for free and without interest, now they have to pay interest and must repay the 'loans'. The installation instrument of Revenue Tax (and later-on the Inheritance Tax) and the IRS as collecting agency in the months before the Federal Reserve Act was needed for this, as governments needs other types of income as the money creation was taken away from them. The Revenue Act was passed in Congress in 1909, and ratified (historical research shows that this ratification has had at least some errors: Kentucky voted against and was listed as in favor, and many states hasn't even vote, so the 75% of the states ratification demand is based on voting records never accomplished) in 1913, two months for the Federal Reserve Act, giving the Federal State the tool of income tax. Making the circle round: lending the State money and providing the State with interest payment and loan repayment capabilities. Very soon the governments spend almost the whole IRS income on paying interest and borrow the actual budget as extra loan. Making the FED the final destination of most of the taxpayers money. "Let me issue and control a nation's money and I care not who writes the laws." (Mayer Amschel Rothschild). The best illustration that the powers within the banking industry are more powerful than political powers are the Depression Year: The whole banking industry put their cards on Hitler Germany (a brutal, but active spending/lending/robbing government), leaving the rest of the world with shorten money circulation in depression. There is one power more powerful than the powers in the banking industry and that is intelligence (not in human intelligence, but in gathering information). Governments with well functioning secret services or secret services on their own who controls telecommunication tapping manufactures (only two countries has such an industry) are the real superpowers as the can confront and/or blackmail the powers in the banking industry with the decisions governments and/or the economy/public will not appreciate (as in: speculation based on foreknowledge). Everywhere power cooperate there a hierarchical structures. The two interesting

questions concerning the financial/real power in the world for interested people and interested governments is: who is the boss of the bosses in the financial industry (as in: who is the financial czar of the world) and who are the ones that knows / has access to the communication of these bosses and their boss (as all real global policies are made in interaction between those two). Never less, it's time the FED will be seized, instead that the current owners taxes Americans for average the income of 4 of the 12 months of their work income each year and on top of that lowering the assets/savings of each American by money supply driven inflation. It's no surprise that consuming credit was an attractive option for American considering 4 months labor for the State each year plus the invisible taxation by inflation. Americans must go work again for themselves. Start to produce. Producing builds a nations and ensures the future of the children. Credit wrecks a nation and the future of its children. There is nothing Federal on the Federal Reserves and there are no Reserves by the Federal Reserve. Only a smart chosen name must give both emotions without the actual real coverage of both. The only governmental influence of the FED is the appointment of its president by the President and the fact that the FED pays its profit (artificial low calculated by increasing other factors) symbolic to the government. The FED appoints their own directors, makes their own policies, is owned by some banks. All other banks were or taken over or went broke short after the installation of the FED: a clean-up of competitors was the first set and achieved target. An other quote from the Internet: "Woodrow Wilson wrote in 1916, National Economy and the Banking System, Sen. Doc. No. 3, No. 223, 76th Congress, 1st session, 1939: "Our system of credit is concentrated (in the Federal Reserve System). The growth of the nation, therefore, and all our activities, are in the hands of a few men." The least the FED could do is publishing the stockholders on the 'About the FED' parts of its website. In Europe there are similar stories to tell about the BIS (Bank of International Settlements: the Central Bank for the Central Banks) and the EMI/ECB. The ownership of the BIS stocks are also not disclosed on the "About the BIS' part of the BIS website. Some Google, Wikipedia and YouTube gives a lot of information. Just research, select based on sources and draw your own analysis of the BIS/EMI/ECB. One of the stories is that Germany and France as initiators of the Euro has giving themselves a discount exchange value, something the small countries have paid. The importance of the BIS is everywhere underestimated. The rise of the dollar from $ 1.60 to $ 1.40 in one month time is designed by at the BIS (Europe and Japan have sold Euro's and Yens and purchased dollars in large amounts). The BIS is certainly a major global economic power, some say the biggest economic power ever. It's strange that we know so little of the facet that influence our life so much (money: capital/currency). This is certainly a huge shortcoming of the (economic) media. Certainly in times of a Credit Crisis, they must write less about sun/rain and more about the climate (researching/communicating driving factors and not only the developments of just today). The BIS is the bank above the Central Banks (owned by the Central Banks, who are in some countries -like the US- also are privately owned). The BIS is the winning competitor of the (more open, more democratic) WorldBank and it collecting agency IMF. Within the BIS the discrepancies created by the loan based money creating system are addressed. Banks that have to much debt by other banks must be steered in opposite directions or turn-in additional securities. The Euro is born within the BIS: Designed as a split-up that would make the BIS more focused on global monetary issues. To realize this the General Manager of the BIS Lamfalussy resigned in 1995 to become the General Manager of the EMI, which was the forerunner of the European Central Bank (ECB). If there will be a global currency proposal it will be certainly originated and/ore directed by the BIS. A lot of power for a closed non democratic controlled organization. The new banking norms (Basel II) are also written within the BIS. Basel I and Basel II are just guidelines as the 1/9 ratio has been made flexible by creative asset valuating on bank balance sheets all around the world. These guidelines are 100% facultative as long auditing is done by auditors that are paid by the party that must be audited. Independent auditing is a (science)fiction in

this system. All bank balance sheets are fruitcakes and they are all 'audited' and signed by 'external' auditors. The real value of the bank assets is the real issue, not the theoretically 1/9 ration or other ratio's. In 2008 it's the hour of the truth for real values, as more and more banks has build huge debts by other banks (the basic cause of the Credit Crisis). Internal books can be cooked, but external balances and payment power tell the naked truth, despite fancy full of polished assets balance sheets. The real situation of which banks are health and which banks are broke is only know at BIS headquarters in Basel. The WorldBank and the IMF only play a marginal role in international finance and no role in international monetary policies. Privatizing profits and socializing debts. That's everybody's goal everywhere and anytime. Just research by YouTube, Wikipedia and Google for history fed, history money, history credit, history currencies etc. The FED is just a by legislation installed cartel, giving fore knowledge information and special conditions. A direct attack to a free/open/fair market. An independent, not democratic controlled huge economic power, that operates under Federal National Flag, but the Flag doesn't cover the operation. Governments and FED can blame each other for occurring problems. Two captains on one ship certainly will lead to not reaching the wanted destination (as there are two captains and thereby two agenda's/destinations). Governments and FED has facilitated each other, living in symbiosis with each other. The FED could be installed after several governmental failures in printing to much money. Research also by Google on quotes fed. A very impressive one: "The colonies would gladly have borne the little tax on tea and other matters had it not been that England took away from the colonies their money, which created unemployment and dissatisfaction. The inability of the colonists to get power to issue their own money permanently out of the hands of George III and the international bankers was the prime reason for the Revolutionary War." (Benjamin Franklin in his autobiography). The roots of the independency of the US from England lays in the freedom desire of the people of the US. The roots of the US are right. This is certainly a huge advance. Freedom and initiative make very good economic soil together. There are no many countries with such major freedom, initiative, work, invention forces in their genes combined in one population. Black and white of the USA has a history of all those 4. This is the huge promise (or better said: hidden power) of the USA. The roots/genes of the USA can be described in two words: freedom and initiative. The freedom is the huge assets of the US, the initiative drive of the US has been changed/mutated in expansion drive, this will be changed in local initiative, as expansion is no longer an option and energy becomes scare/expensive. The new currency/economy/politically independent never losing baseload values of the future are energy (as in: prosperity) and water (as in: food), will exist besides the old/proven ones: mainly in gold and a little (the emergency transportable 'cash') in diamonds.

PeakCredit: Credit is an artificial resource and was in theory capable to grow further for yet an other decade or two (as long as there where economies in a grow phase), but the artificial resource Credit has been overstretched. Credit could grow as long an economy grows. When an economy reaches it peak, credit should have become more expensive to brake the growth of credit as growth of an economy slows down. Economic growth is finite, something we don't want to hear, but we live on a planet with limited and finite resources. Endless growth is thereby not possible: we only have one earth with its limited capacity. One thing we must understand is that credit also has its peak moment. As credit is based on money creation by loans (and there is in this system of money creation no money created for interest). Our current financial system only could be healthy in times of continuous growth. If growth stops and every asset is already mortgaged, money creating stops and there is no new money created for paying the interest on the existing loans. Use the WorldBank and the IMF only for the less attractive assets (as in: debts).

Crunch: The Credit Crunch (often called the Credit Crisis) is not about the fact that banks can't just type new loans in their computers. Banks can put anything in their computers, they just need to stay in their books within governmental own equity demands in their books for each type of credit (this is 0% for governmental credits, 4% for mortgages, 8% for blank uncovered consumer credit, etc). Just in their books, with auditing by auditing company that is paid by them. This who audit the banks is the huge weak spot in current banking system. Banks are so complex and have so much ways to 'cook the books' (produce the desired figures) that this governmental legislation more can be seen as an advice, just due the fact that there are in accounting more than thousand ways to Rome. The required Tier One (bank own equity) capital is therefore just something of a good basic theory. Any auditor (paid by the bank, not by the legislation enforcer) can provide the bank one thousand new ways to get the desired Tier One capital level, and as these on 1000 ways and the 1000 ways of the auditors to cook the books are not enough there is always the SIV (Special Investment Vehicle) capable of clean up / distress any stressed bank balance sheet: the final (suitable for any purpose) magic book cooking device. The SIV is a partial by the bank owned company that holds assets (as in: holds debts, as in: debt is just a temperately negative appearing status of an asset). The amount the other partners has to pay for their share is related to the hurry the bank has with cleaning up her balance sheets. There are SIVs that hold no real value anymore but just stay alive as channeling taking looses for the shareholders. Instead of taking the looses into the balance sheets, they value the assets according to 'historical valuation' and even make 'profit' by adding the interest of loans up to the loans. Financials are the fruitcakes of the world. Managed by people who has lost their sense of for the value of money and for real assets and real profits. Capital is a long term economic facility and it's managed mostly by people who have short term visions and motivations (as in: their own this years bonus). So the Credit Crisis is not about banks that not where any more able just to type new loans in the computers, but about the fact that the engine behind that justifies all that (rise of house prices) stopped and the whole financial system that was build on endless growth of house prices got derailed by that. It's the mystery of our decade how on earth a complete industry really was able to believe in such a thing as endless accelerating home price growth. Intelligent people where blinded. What causes the stop of the engine that justifies rapid loan creation? In 2006 the US house prices stopped to rise. Not strange. There is a limit to everything, and there is certainly a limit to the amount of interest a household can pay and therefore a limit to the purchase amount of a house. The financials where so brilliant that not anyone in the whole industry say that if house prices rise more sharply than the economy (as in: purchase power, as in: payment power) that there is an end to this as this difference reach maximal tension. The financial industry has even build their whole business model on it: Customer, pay this year almost nothing, pay next year, but if you than re negotiate your mortgage based on the value than, you can pay the next year once again almost nothing (of course we add the cost of re entering a new mortgage to the new mortgage), just sign now and pay never, just become part of our financial game. Not strange that this kind of behavior lead to top prices (something quite different than value) of houses. Not strange that 75% of the people working (or must we say: worked) in the finance selling industry in Florida are convicted inhabitants (criminals is such a stigmatizing word, so we don't use it). Arranging the right documentation was the slogan. No passport? They take care for it. Bad credit record? They fix it for you within a few days and for a 'few' dollars. Higher valuation report? No problem, consider it as done (the costs of all these services are of course paid by the mortgage on credit). Buy a house, let it empty, get a signing fee each year when you rearrange the mortgage. Take debts and consuming your future now, that's the way to do this. All right, home prices could not rise any more, even the above fake market has eventually it's limitations. So the home prices didn't go up since

2006. So people couldn't arrange a new higher mortgage, so people must start actual to pay for mortgage, something they haven't done for more than a decade. That was certainly a new experience. Certainly for the whole breed of new home owners. And certainly for those who had take a first year interest discount, (how to sell some something he/she can't afford: sell it with credit on their interest on their credit -this is no a typo, it's is as it is written-) and where 'suddenly' faced in the second year with 10-15% interest rates an huge home purchase amount with all the costs on top of it. A market that can no longer up, goes down. First slowing, than standing still and than going down in a much higher speed than it has gone up. Debt that hurts the state of mind/household. Consuming the future was yesterday nice, but today it isn't and tomorrow it will hurt. Foreclosures became a facet of life in the US. First the foreclosure prices where just a little lower, and they didn't disturbed the market prices (giving the foreclosure traders still a good margin), but as demand stopped (not demand: nobody want to stop the game, but finance possibilities dried up and by that demand), the foreclosure prices where driven down till sometimes 50% of the purchase value and even than almost 50% of the forecloses didn't find a buyer in their public offering, bringing the US an new modern words top 10 word: bankowned. If several objects in a neighborhood are sold for 50% of their initial 'value' and many other objects in a neighborhood are bankowned, the prices of the other objects in the neighborhood will be minus 40% on 60%. Where is the bottom of this? The bottom is when there are no bankowned homes more in the market. Meanwhile the American economy fuelled by this artificial housing bubble starts to slow down by the more and more redrawing of this artificial fuel. Suddenly the US economy is no longer about 72% consuming and only 28% producing. Everyone with any sense could tell this, but strangely nobody really saw that this was just a short kick of overstretched fun, that requires a long period of correction. Meanly an other problem grows: we all had bought a SUV that consumed a lot of gas and we have bought all big (really big) homes far away from our workplaces. Big cars take a lot of gasoline, riding big distances in big cars even more, big homes take a lot of heating oil. But oil was getting each year doubled in price. We lost purchase power, foreign nations start to 'tax' our oil addiction at a different price. Strange that the SIV and the SUV has both wrecked us and the SUV has wrecked the SIV. So home prices severely down, purchase power (as in: payment power) severely. People starts to pay later, the heaviest gambling SIV goes down first: two of Bear Stearns and one of Carlyle: they barely could not take a month payment delay of they customers and when the lenders did their margin call (correction payment in the tight framework of their debt to asset value ratio) they defaulted and where tear down by their lenders. As example the Carlyle case: Carlyle Capital literally said in their prospectus that investments in Carlyle Capital had a high risk exposure. On top of that the CEO of Carlyle Capital said in an interview in a financial newspaper on their IPO day in Amsterdam: "there are and always will be bigger fools" and yes they were: the whole offered stocked is bought by European pension funds, who lost it 2 years later (of course the shares are still valuated in their balance sheets). Carlyle used Carlyle Capital to unload Carlyle Group of their whole CDO exposure. There where bigger fools. The pension funds that provided the equity and the banks that provide (30 times equity sized) margin loans based on it. For the Carlyle it is just waiting till lawyers will confront them with 'planned and organized deception' which will be the end of the Carlyle Group, forced by claims or they liquidate just before that. Back to why lending dried up (home prices stop growing). Back to why some financials defaulted (to low equity to resist any payment delay of the borrowers). Back to why banks don't trust each other (they know their own skill in cooking the books, no bank knows the real situation of their counter partners). The Credit Crisis is therefore also about a not any longer smooth operating interbanking credit system. Banks don't trust each other anymore. It takes one to know one. What are the consequences of the fact that they don't trust each other (demanding immediately settling of all open accounts)? The gamblers got in to trouble, and the FED give them the money the need for paying

their overexposed debts. Why? First of all otherwise other banks should fall instantly like domino stones. In the view of the FED was the salvation of one, the salvation of all. But the trouble (as in: 1) fall of the house prices and 2) percentage of overdue mortgage payments (due high mortgage and high interest rates) was not over. Both facets growth steady bigger and bigger. The real impact of the Credit Crisis begins to enfold to everyone bit by bit. Some even start to calculate the estimated size. Some (the less smartest) says the problem is over, while the home prices still drop and the overdue rate on mortgages still rise: these people see markets as the weather and have no capacity to look to the causes of this all. The US Administration is well aware of the current size of the problem and the fact that the problem gets bigger every day and has choose to socialize the debts. No strong leadership, but just throwing both governmental and FED money at it. But the fire is bigger than and require more water than the US Administration and the FED can give without causing severe negative consequences for both the USA Government and the Federal Reserve. After the CDO troubles a complete new wave of troubles is on our way: the CDS (Credit Default Swaps) problems. The CDO and CDS market together are $ 64 trillion in size (according to the Bank of International Settlements). Their real value is unclear. After that the muni's (Municipal Bonds) will come into trouble. And the Treasuries will not a problem anytime (as the OMC of the FED can buy this as much as they want with printed money). All these fake values are the reason why any solution for the financial industry must let this whole house of cards completely untouched: no one card may default, otherwise the consequences are total collapse of the whole system. All values must stay in the books valuated against historical values. The whole financial industry has shifted to a complete unrealistic model. The only real payers in this value bubble are the taxpayers and the pension fund payers. Both situations can not go on for much longer. The USA needs a Gorbashev who just say: we're broke, let's stop keeping up appearances of this unreal value issue and work out a real solution. That solution will be that all banks, financials and pension funds can sale each stressed/worthless asset for purchase price to a governmental bailout fund (socializing debts) combined with a guarantee that foreign assets owners can trade this debts against real produced products produced in the US. Than everybody got what they want and nothing collapse, maybe not even the dollar than. This is the only clean way out and success not guaranteed. The Credit Crisis is about insolvent banks, that not even have day to day liquidity anymore, bit must borrow that from the Central Banks, caused by both overcooked balance sheets and structural declining payment power of the borrowers. The Credit Crisis is about the current economic status of the USA: its real (not artificial) economic value (as in: actual purchase/payment power).

Causes: What's the background of this? The current USA only wants the positive facets of capitalism, the negative facets they don't like very much. For example: Each economy moves -and improves continuously- in 7 years quite up and than 7 years some correction (as in slower growth). These cycles of 7 years give an economy both growth and firmness, just like summer and winter take care of the growth and the stabilization of that growth as can be seen in the grow rings of a tree. A short (kind of) recession after a time of boom is good. It wipes out the wrong developments, gives a solid bottom to build further on, avoids unsustainable developments build on quick sand, that will collapse. Governments must educate more. Not in propaganda, but in education. General economics is the less exposed science on schools/universities. Than people would know the endless returning 7 year cycles and understand the recurring grow/stabilization/grow/stabilization phases. And maybe growth becomes less important and stabilization more important (due limited resources of the world). The USA has find ways (dollar, tech boom, housing boom) to push these years of slower growth and stabilization into the future. Making that period when it is not longer avoidable much more tougher. So the gamblers got in to trouble by their stupid short term high risk high

gains games and the get the money they need to settle their bills from the FED, otherwise other banks would fall. But this bailing out is just started and (according to Greenspan) not even close to the end. The largest economy of the world (average $ 10 trillion GDP a year) has gone 20 years ago the wrong road and is by that been fuelled/build on consumption based on credit instead of on production. Which percentage of these 20 times $ 10 trillion = $ 200 trillion was fake growth based consumption is up to anybody to say. But a figure between 10% and 20% will do the job. One big huge figure where everybody that holds the related debts must pay for in down writing sometime, somewhere, somehow. The amount of write downs will be severely higher than we have seen. The US has to drive back to where they took the wrong road and start there again. This in a quite more difficult environment. The US Administration (as spending more than they earn -sound familiar in this context-) is concerned about their 'brand' in loaning. The world must stay increasing their dollar reserves by buying US Treasuries and US GSE Bonds, but there is a limit on all of this. The Credit Crisis is the last global event where the US was leading. The US is moving more and more out of the center of the world market. There are new more beautiful girls in town. So the gambling banks (those who did the short term high risk deals) needed money. They've got it. They will need money again tomorrow and they will got it than again. There is $ 50 billion cash left in the US bank emergency fund, this will stay there. The FED will borrow any bank any amount, bank failures is something the US can't use right now. So the banks don't trust each other and this makes debt by each other a little different till impossible. The FED has fixed this minor problem. And the problem was also more the fact that many banks just had to much debt and just hadn't the liquidity they suppose to have by their books, this is why the short term this measure flagged loans, are quietly changed in long term loans. The what is the real problem? 1) The books of the banks are cooked (they were this already before the Credit Crisis and since than cooking the books explode: balance sheet holds value levels that no longer are out their in the real world). 2) The underlying values of the bank real estate assets (actual mortgages, MBSs and CDOs) will shrink to 50% of the current balance sheet values. 3) They have issued to much credit and therefore the credit is 'out of stock' (it is not longer possible to create money based on current actual pledge values). Money supply by issuing loans is a beautiful system and stand for a long period if a) the growth periods will cycle with stabilization focused periods (stabilization is no party, but certainly necessary) and b) economic factors stays the same. Credit Oversupply and Peak Everything both has ruined this party. Other nations also want some prosperity and as energy and minerals are finite resources this drives prices of energy, minerals and food much more higher. Causing non money supply caused stagflation and burdens the stabilization process severely. But the system of money creation by loan creation can't go on for ever. This as only the money for the loan is created and not the money for the interest payments. These must come from the money supply of tomorrow. Money supply by loan creation can only stay alive in an endless growing economy, but endless growth is not possible on world with finite resources. This is the reason why most of the retired national/global topbankers (who understand these issues better than everybody else) are not positive on the current situation. It had could gone further some decades, but it has managed not wisely and is maybe now at its end. A facet that makes the situation more worse is that banks holds also shares in each other. A success multiplier in times of tailwind, but a severe troubles multiplier in times of headwind. Governments that just follow the economic waves, just enforce both the tops and the sags of an economy. If a government wants to spend some money, and they do it in good times, they fuel a boom even more when the boom doesn't need it, when they retract this spending in sag times, they enforce the depth of the sag. Good governments take back action/drive in their own spending when an economy drives good and increase if an economy slows down. Than they really make capitalistic less painful in the right way. Friedman in times of gloom/boom, Keynes in times of doom. Than the tops are lower, the corrections are less severe and the sag

depths also. Russia has become capitalistic in their genes (just doing good mutual business deals based actual production) and the USA has become socialistic in their genes (living on credit, more consuming than producing and in addressing the Credit Crisis in privatizing profits and socializing debts). On top of these very a good market driven sharp economy weakening socializing debts issue, there are Stasi/KGB like structures (DHS) initiated and already operational. So much for a free open dynamic market driven efficient innovative society. Does anybody read history anymore (WW II, low efficient communism and state driven public opinions with it 'thought police' institutions)? Innovation needs freedom and markets. If there is any thing this momentum needs than is that innovations and markets. Not state driven, but people/companies driven. No innovation, no future, so simple can the Energy Crisis be defined. Russia is more capitalistic than the USA. And where the state controls in Russia it is in the long term benefit of the nation. The USA has experimented with painless capitalism and the results are severely bad. Painless capitalism cause later-on a huge economic earthquake. Move economic pain into the future is not only collecting economic pain of sometimes, but also multiplying it. Only weak, short sighted, economic systems don't understanding leaders doesn't follow the summer/winter seasons of the economy. Every tree has each year thick/soft grow rings and thin/strong stabilization rings. Recession wipes out the wrong directions. Moving recession into the future is giving wrong directions/developments more grow time/energy and therefore the correction will not only collect all the collected needed correction in to the future, it also gives more to correct by longer existing wrong corrections.

Solution: What is the solution to this all? Shareholders doesn't want to fund equity problems of financials anymore (as dividends will not paid and stock values decline: the two reasons why shareholders want to provide equity). They are to big to be solved by equity. To much looses are held 'up in the air' waiting for better times. The monolines (designed for individual case collapse, not for general market collapse) and the GSEs (über fruitcakes, holders of the most risks direct after the monolines, therefore just on governmental oxygen) are technically dead, yet still alive. The monolines are held in live by the banks who don't collect insurance coverage (as this will lead to collapse of the monolines and thereby of the collapse of the insuring result demander). Who will supply the money for these major looses? The FED will use the Open Market Committee to support all banks for the market invisible (as the actions of the OMC are not published). All assets of all banks will go to the FED. Accounting is flexible, so is auditing. In the early '80ties all western banks (beside the cooperative organized and on Raiffeisen based ones like the Rabobank) had negative equity positions (technically bankrupted). The government give them the legal opportunity to create an external fund where assets cold be parked (called the Calamity Fund). In these 'funds' where the stressed assets placed and the bank books where artificial and 'legal' (as in: governmental approved, but not in true nature published) beautiful. What are the ways out? The problem is too big, there is just one way out: the FED must facilitate all the air in the books and all the value decline of the house, watering the dollar severely by this. The only tail wind in this is that a lower dollar enforces the position of US products on the world market, the down side is that energy will become (due the decline of the dollar) even more expansive than it already will become. Any other solution than the OMC of the FED silently feed the dollars into the market (as she already does in creating artificial demand for US Treasuries by buying them with printed dollars) has more damage to the US and the world. Stabilization by bringing the balances sheets values easy or sometime at once back to real payment power levels is no option. No bank would stay in business. So what is the Credit Crisis? Credit has been oversupplied and is now short. Short in a way that it's not possible to let credit grow (as it is already grown to big). Credit that is short is not necessary expensive credit. In the '90ties were interest rates in Japan almost near zero

percent, but their was no demand, because everybody had pain by buying US assets to expensive (sounds familiar). The Credit Crisis has not hit Japanese banks: they have learn their lesson back in the '90ties, which are always called the last decade of Japan. But any debt with short term adjustable rates will become very expensive. The Credit Crisis is about oversupply of credit and thereby 1) substantial drop in balance sheet values (actual values are only 50%) and 2) many defaulting borrowers. So trouble on the balance and trouble in the daily account. These two problem with one reason (over supply of money) must be bottomed before we can aspect anything substantial of the financials. They're just crippled now. And thanks to Murphy's Law: these correction will not be a joyride, but will hit the economy severely. Leading the financials into a new (bankruptcy of companies and persons drive) write down wave. And on top of that as desert: sharp price rises of energy and minerals hits the economies severely, just as they should give the financials to power to recover. Financials will not stand all these headwinds by themselves. They need governmental support. This can be done by nationalization as they default (scarifying the shareholders) or by real substantial governmental equity support (not burning the shareholder, but only stopping paying dividend till the sky is blue again). If they will be nationalized, stock of financials will be worthless, times that the Fannie Mae shareholders gets dividend even when the company is brook will soon be over. Regards the method (nationalized or governmental equity) it will cost a lot. The US Administration will let their own taxpayers (higher debt) and the world (less value, higher risk) pay the bill instead of decades of recovery. The main question in all of this is: how long will the world stay funding the now 482 billion (half a trillion) governmental budget shortage of the US Administration? And will the world finance all the governmental equity that comes on top of this huge yearly deficit? Otherwise the funding of the government and the problems of the financials can only be down by dollar watering, which will cause inflation as governmental burden on top of income tax, in a time that everything due to Peak Everything already has become more expensive. In short: Credit is the possibility to purchase when you don't have the capital. The Credit Crisis is the situation after a period where this beautiful tool has been used excessively with no relation to real economic values. That's the credit crisis in the early '80ties and that's the credit crisis today. Only the current Credit Crisis is beyond expectation big in size and can not be solved as done in the '80ties. The current Credit Crisis needs severe heavier treatment. The changes that the Credit Crisis will lead to a Currency Crisis (fall of the dollar) and/or a Governmental Crisis (individual States that leave the federal USA) as result of that are big. The problem just can't be treated by normal economic grow/healing due the size of it, it needs governmental capital otherwise the financial world of the US will collapse, but in return it could lead to the collapse of the USA. The Credit Crisis is mainly about pushing good things to far. Banks has made some management improve proposals, where the replacement of the initial bonus of the CEO by a long term (proven real realized profits) bonus one of the more than fifty future crises preventing measures is. Where to go from the situation that all banks are feed (live on and live by) governmental funded equity? This between face can not be held for long. The government will buy any asset the banks want to loose. The whole industry will be washed from their debts. There is no other solution to it without less bigger economic treats to the economy. It's gambling with the dollar, but maintaining the USA brand in the world. The capital demands to the restructured banks will be created with printed money to prevent foreign SWF's (Sovereign Wealth Funds) to take over the whole US banking industry for a dime. The future for the restructured banks is not good due to the Energy Crisis. The fact that due to the Energy Crisis the main economy activities will move to local economies is something the are not prepare and suitable for. Only the banks that are able to facilitate local branch offices will survive longer than 5 years their rebirth, the other just will dye a silenced dead, like an old man who used to be great, but isn't anymore. Everybody with a mortgage that could not pay for it will get a mortgage payment rescheduling. But as the economy slows down, jobs are cut, house builders lay

off all jobs (houses enough in the US for the next decade), the impact of the Energy Crisis grows and destroys the complete mobility industries of car makers, car dealers, truck makers, truck dealers, transport companies, plane builders and airlines for the start. This payment rescheduling will hit almost any US mortgage and some mortgages will have multiple of these reschedules. It's gambling with the future of the US, but it's the only solution. The real gambling with the future has been done in the two and half decades before 2007, when the US left their production focus and start to focus excessively on consumption by credit. The problems only came to surface in 2007, they were made in the two and a half decades before 2007.

Timing: As described in the Energy part of the report the world faces in the next years a never seen before investment wave. Besides the needed huge installbase changing investment wave (replaying fossil fuel driven cars by electric cars etc, etc, etc, etc), the world also will face the coming years huge investment waves in energy exploration/generation/harvesting/distribution. All these investments waves reach us at a momentum that the financial industry is terminal sick treated on the ER department. When we really needed financial flexibility (as in: credit), we are faced with a situation that credit is overused and overexposed. This need for financial solutions will speed up the bail-out of all the stressed assets of all financials worldwide by the governments. An action that will reshuffle the power of the separate currencies by the size of their stressed debt over-valuated purchase exposure.

Future: If nationalizing/socializing all stressed 'assets' of the banks and deflating all the other cooked air on their balance sheets succeed depends on the fact of the US economy will be able to start produce again. Only than the US economy can pay the huge load of debt and interest. The FED (now a private enterprice, without any accountability so ever) will be nationalized, her balance sheets will become public. The same will happen with all other central banks globally. In the pre-nationalizing process of the central banks there will be the same robbery as took place in Russia in the pre-privatizing process when communism was abundant. Only if all the global dollar asset (treasuries and bonds) holders (central banks, pension funds and sovereign wealth funds) will start to exchange their dollars debt papers for actual products (an by the FED organized US bonds for US products program), this could have good effects. This development could certainly support the US economy and is the only nice way out for both the parties and of course the repurchases of the Treasury Bonds not silence by the Open Market Committee (their will not be other buyers), but openly by the FED. It can have a severe declining effect on the dollar, but this development will be softened a little by the fact that the purchases in dollars certainly will support the US economy. This is best solution for both the US and the world. The capitalistic model of letting failing banks just fail is no option in the current situation. That's sure the right thing to do in an environment where bank failure is an incidental occurring. But in the current situation it is no option: things has grown to long, to fast, with to much power wrong. The whole dollar banking industry globally is wrecked. Not choosing for a bailout would be equal to choosing for certain economic/societal collapse. There for a bailout combined with convertibility of dollar debt paper to US industry order is the only way out. If this fails, the next possible solution is abandon the dollar and fix everything overnight (with no more friends anywhere in the world in the morning). Of course the USA will try to get the currency replacement done in a 'Mutual Agreement' (as in: let us do the same trick again with a new currency that replaces both our and your currency), not implemented by the FED but by the BIS (Bank of International Settlements), but the US imago in the world concerning financial values has to bad for such a trick. Only a few nation will fall for that solution, the rest just will be angry and write down the assets and the US for ever. The year 2008 is not the year

1971, times are changing since than. There is no Cold War more outside. The US is this time not the leader and protector of countries (accept of some strategically located small sized countries with small economies like Georgia). The dollar asset holding nations are more diverse than back than. There is no ideological bounding issue any more. There is no common enemy this time. The War on Terror has not been able to replace the old 'bounding' Cold War facet. Times are changing. The bandwidth/playground/movement of the US is limited. The opinion of the former Comptroller General of the United States (a fancy name for the director of the national governmental budgets accountant/auditor) and thereby former head of the GAO is interesting. His official (as in: spoken while he was still in office) view on the US debt can be found on YouTube. "Walker last year issued an unusually downbeat assessment of his country's future in a report that drew parallels with the end of the Roman empire. He had warned that the US government was on a "burning platform" of unsustainable policies and practices with fiscal deficits, chronic healthcare underfunding, immigration and overseas military commitments threatening a crisis if action was not taken soon. There were "striking similarities" between America's current situation and the factors that brought down Rome, he had said. These included "declining moral values and political civility at home, an over-confident and over-extended military in foreign lands and fiscal irresponsibility by the central government." It's a fact that the man's job was to be pessimistic, but the figures he presents are certainly not nice. An other very important YouTube footage on the US debts, budgets and corruption is the Rumsfeld press meeting in the Pentagon on the morning of September 10, 2001 (the day before) with the message that (not even deep) research has showed that at least $ 2.3 trillion (with a t) of transactions we're unaccountable within the Pentagon (25% of each yearly budget). This CBS footage can be found by searching for Rumsfeld Pentagon Trillion on YouTube. It's clear that debts/budgets/corruption are related subjects, these three has a lot in common and are connected by private greed at expense of society. Private focused entrepreneurship within the government, parasiting governmental funding for own private benefit. Gorbashev fought the last years of the USSR against the same problems: corruption on budgets, corruption on positions and over-lobbied structures by institutional/corporate interest groups. The three things that severely damage the function and legitimately of any government anywhere and anytime, regardless its ideological flavor. Privatizing governmental budgets, privatizing profits, socializing debts. Decades of artificial tailwind has fuelled also this wrong three developments without the needed correction. All foreign US assets owners knows that only a conversion of debt papers against real products is the solution that can bring the US back on its feet. On the other hand all US debt owners knows that when it goes down it goes down by 1) the bank/trade deficits (as the FED can issue and buy as many US debt paper with printed money as foreign buyers goes on purchase strike) or by 2) a very deferred but massive 'going short' action on both the dollar and the US debt paper holders (profiting overnight as much on decline as they have lost in the last years on decline), lifting all there exposure overnight into safe harbors. Wallstreet will be associated with losses by the losers of this end game. One thing is clear: the coming decade there will be one of a bubble resistance, a real value appreciation and a huge sustainable prosperity drive. Precious metals will rise severely as becoming the safe harbor for people who wants to shift their capital out of the currencies before they will decline due the bailout of the financials. And importing will become very expensive for all countries and certainly for the US.

Geopolitics: Credit and currency has become more and more a geopolitical issue. The USA is using any mean possible to increase dollar reserves within any currency. This growth will end when this level reaches 100% (more than 100% is not possible), but there yet much reserves to gain for the dollar. The US uses a triple play method: commercial (producing nice figures), political (giving security to ruling powers: Saudi

Arabia) and financial (FED/BIS based pushing of both the dollar and US Treasuries). As long there is demand for the dollar and US Treasuries, the US can spend more than they earn. In this light is Iraq, Iran and Venezuela explainable: they has/have active dollar replacement policies in oil trade.

Replacement: The fractional banking system with its money supply by virtual loan creation will be abundant as it only works in economies that are severely growing. The world needs a new sustainable banking system, that facilitates sustainable prosperity. Not longer FED/BIS based but tied to real values (kWh?), also working in no longer growing economies that are focused on sustainable prosperity. Growth is the target of the 20th century. Sustainable prosperity the target of the 21st century. As due to PeakOil economies 'retract in distance', local banks will gain near 100% of the banking market. Local banking is the banking way of the future. The Raiffeisen local bank design (covered by own joint regional/national structures) will be leading for any bank in economies which are restructured due PeakOil. The connection between asset and value will be faceable. Bank directors granting themselves high bonuses on fake profits (that later-on will proven real losses) will be something only mentioned in history books. A local board or owners will certainly not allow this and if they decide to give themselves a bonus, they will be kicked out by the real bank owners: the customers.

Proposal: What is the one and only good solution out of all this? A combination of the installation of a Super Debt SIV, a swift of money creation from the FED back to the Federal Government, an Export Finance Fund, an Energy Fund and a Municipal Finance Fund. The Super Debt SIV: The creation of a super Debt SIV that can purchase all stressed bank debts. Resistance in bailout the airline industry and the car industry directly (as their problems are global, not specific US, and have other causes). Some kind of sanctioning for the banks that sell 'assets' to this Super Debt SIV. A stop on interest can be put in place, but this will face global resistance, and is therefore maybe not wise to propose. On the other hand: the debt has two parties: the financials as debtors and the owners as lenders. Maybe this Super Debt SIV only must purchase only debts with mutual agreement between both debtor and lender. Than the sanction for the banks and the conditions for the owner can be set in mutual agreement (by a standard not negotiating model). Demands of the Super Debt SIV to the banks? 1) Production of honest balance sheets based on actual values (based on published financial measures). 2) Shares reshuffling based on real values (as it is a refinance tool). 3) The Super Debt SIV gets share equal to the refinanced debt (with recalculation if later on new balance sheets prove that the old once where not good and an extra fine for that). 4) Lenders must agree in transfer the debt to the Super Debt SIV. Demands if the Super Debt SIV? A) Agreement on the transfer of the debt to the Super Debt SIV. B) Lower interest rate or even interest stop (a general mandatory rule, not negotiable). C) A mandatory convertibility of 20% of the debt a year into purchase of US produced goods. D) A default option of 50% payment and 50% goods (if the second part of this proposal -the FED part- also is done). A short period will prevent full interexchange between debts and the current order flow, because that will not lead to extra orders and would not boost the demand for US production and the US would not gain payment power again). The other part of the solution is the return of the money creation to the government. The FED has in her 95 years of existence never granted any auditing request of the Congress. The current dollar is already fiat (not by anything backed) currency. The Gold in Fort Knox is never full audited since 1954. So it's not clear if there is any gold there and if there is left some gold there who owned it. The commission that advised Reagan on the gold standard possibilities write in their report that the gold that still is left in Fort Knox had been in ownership changed to the FED 'due collateral reasons' of the state debt. Both the

resistance of FED book auditing and the resistance of an one day full gold absent and ownership auditing at Fort Knox tells enough. The FED must be seized overnight and assets that has been moved or let off must be corrected. Private ownership of the money creation system was a stupid idea, installing a bank cartel that lend the government the money the government has allowed them to print. Paying interest by the government on debts that are based on fiat created money is to odd for words. Seizing the FED. Gradually paying the governmental debts by the new created money with equally retracting the fractional bank ratio's so that the same amount of money stays in the system. Tight regulation on the governmental money creation capacity. Legislation that forbids any seized FED official to be involved in the BIS (Bank of International Settlements) as the BIS being a non-democratic and non-governmental financial body that holds to much (not politically controlled) international economic power. We don't need old bros based networks any more, we need open democratic transparency. This solution could use also additional an Export Finance Fund, an Energy Fund and a Municipal Finance Fund. Europe and China could realize a same set of solutions, if the Euro and the European banks and the Renminbi and the Chinese banks are too much effected by the US situation. Results? No debts anymore, no fractional banking any more (more stable economy), less income tax (as the IRS tax we pay now almost completely is used to pay interest on the federal governmental debt, with will be gone than), no inflation anymore and municipals can address the PeakOil related problems of making their local economies vibrant prosperous. If this set of solutions not is taken, we will face collapses and chaos. The future of the 21st century is local due the fact that local models has the best energy/prosperity ratio's. This transition can be done gradually by the above described solution of will be born out of chaos (much more headwind for everybody). Local currencies and local taxes are the two words of the 21st century. Federal can gradually flow into local, or federal will be abolished with an economic/financial big bang. The weak spot in the FED is dangers of the Sherman Anti Trust Act of 1890 for the owners. That that FED is a cartel is a 100% proven fact. That the cartel has used it power to abolish their competition right after the incorporation in 1914 is also a proven fact. That the cartel influence the market movements by money circulation contraction/extension also. That the cartel has used the money circulation contraction to buy assets (companies, land, stocks: see the few FED meeting transcriptions that are leaked out) for stressed/lower prices also (their view on economy is like a farmer: let it grow, profit meanwhile of it, but certainly harvest when a boom reaches its top). That the FED used it force to seize all the gold held by US citizens in 1933 also. That the FED keep artificial money supply shorten in the 30ties (because outside the USA in a certain European country was more profit to gain in that period). The FED is about profiting/taxiing a nation by a private company. The FED is about insight trader profits by negative bets (put options) when it's not betting, but the results are ensured by fore knowledge. All it takes is just load of civilians who file a Sherman Act complaint against the FED. That's acting real patriotism, really freeing both Government of their debts, and giving people only 1 instead of 4 month a year 'working for taxation'. The procedure for this can be found on the internet by googling for 'Sherman Act'. Then the US government will get the money supply back, could buy back the Treasuries, while contracting the high risk fractional banking ratio's so that money supply stays the same. The dollar is already a total 'fiat' (not by anything backed) currency, that its value totally gets on the common trust in the currency. Then the US Government will be debt free, the US citizens can use the earnings of 4 months work a year they now pay in taxes (100% used by the Government to pay the interest on the Federal State debt, new things are paid by debt extension) for paying of their debts. Municipals can be also brought out of debt by the Federal Government. The new president really can make a difference. If he does not. He will be like someone who attend to a party at 06.00 when all that's left is empty bottles and a mess on the floor while the caterer is demanding payment for the cost of the party. The new president (republican or democrat) really can lead the US to a new debt

free future, lead the Federal Government, the citizens, the States and the Municipals out of debt. Assisted/backed by the Sherman Act, immediately effected by or an own written new Executive Order, or by use of the EO 11110 that Kennedy already has signed on June 4, 1963, he could take back the money supply to where it belong: by the government and not by a private owned cartel. The US would get out its debt without a own crash and without a global economic crash. Any other solution will certainly lead to a global economic crash where the hard working middle class loose / get ripped off their savings and pensions, but this time on global scale. Only an EO will work, giving no time for destroying archives and attractive business closing deals for the current owners. As mathematically correct: in economic crashes less real value is lost, values are only transferred to the bargain buyers who has cleared their positions earlier. The results? No collapse (as collapse is not about lost of values/assets, but only transfer of values/assets to insight knowledge), less income taxes (as the State Debt will disappear: so more household wealth and corporate strength), less debt (so less interest payments: so more household wealth). The US citizen faces today to mayor financial pressures related to FED designed interest: 1) Income Tax: that is used 100% for interest payments on the unnecessary interest on federal governmental debt (the new expenses are funding by higher debt), as the federal government has giving away in 1913 her own right to issue money to the FED, who now can let her shareholders/beneficiaries charge interest on the printed money for the governmental debt. Each American works 3 till 4 months a year (30.8% GDP according to the Tax Foundation) to pay the interest on the governmental debt to a company that has seized the right to issue this debt from the government in 1913. 2) Debt Interest: as Income Tax takes away 3 till 4 months (30.8% GDP according to the Tax Foundation) of each income, going into debt is a logical consequence / appealing temptation. But debt costs interest. If the invisible taxation of currency users by the currency issuers due to inflation (increased money supply, more money issuing) also is also taken into account, than it's mathematically safe to say that each American works 50% of the year just because Wilson in 1913 pushed the FED law trough Congress on Christmas Eve. This is a modern time version part-time slavery, something that will no longer accepted in the 21st century. The governments will take money supply back into their hands, the money system will not gold backed, but will be 100% fiat/trust based currency. There will be a constitutional amendment that prevents that one president/administration can blow up the currency by outlining moneysupply borders. Taxes will be sever lower (as they not longer used to pay interest on the federal debt), people will have less debts (as they have less taxes to pay and the fractional banking ratio's are lowered the same time). In nations with good governments there will no inflation and no taxes and they still will be able to provide good government. This is no weird fairytale, but a actual proposal. Just do the math concerning taxes, money supply, governmental budgets, inflation, interest and money supply. Any university should do this. Of course being the policeman of the world, or fighting wars is not possible in this system, as governments their spending directly negative influence their own currency position. An other big advantage that comes for free as side effect of this system. As for the driving forces in the banking industry. Good business men knows when to stop. The taxation/inflation based cow is old, has given enough milk in the 20th century, but is due. Times to leave the currency/credit path of the forefathers. Time to change operations from central banking completely into energy generation: that's the 21st century version of currency/credit. Universities: do the math. Both pro and contra. This Planck Proposal fits also a goodbye to fractional banking. As fractional banking needs endless growth and that's not possible on a limited earth. Shortening the banking leash in equity ratio's, auditing and bonuses is crucial. Equity ratio's must be driven back to normal levels, equity/volume ration's of 1 to even 100 as they are now, back to 1 on 1, as fractional banking must be abandoned by legislation. Bank CEO/staff bonuses may only be done in lifetime benefits, preventing short term gambling. Bank asset values, equity ratio's and bonuses must be controlled/audited with bank auditing by a new organization of

banks/governments/companies/consumers. Banks are no islands in economy/society, they are the bridges and needs to be audited objectively. This should be part of the license, self regulation has failed severely. This Planck Proposal momentum also can be used to cut all artificial data inflation out of all governmental reported statistics. No artificial low inflation figures any more, no artificial high GDP figures anymore. There is no need more for lying on status data. As the financial problems are solved by changing the system of money supply, the USA doesn't have the need to dress-up figures just to keep the lenders buying Treasuries. Real values. That will be the motto of the 21st century.

Alternatives: If the above (only) solution is not realized, there will be a collapse due the combination of the Credit Crisis and the Energy Crisis and the Water (as in: Food) Crisis. If it's realized, there will be room for governmental funds and governmental guarantees to cope with these Crises. If there is a collapse people will loose completely their trust in any far away structure. This (together with the reach/distance contraction due the rising energy prices caused by the Credit Crisis) will stimulate local economies even more. Is there room for new models? Yes. Local currencies will gain enormous popularity. Local (global?) barter systems/currencies will gain enormous popularity (people offering goods/services in the 'point currency' of the barter system, tax and currency free. Also gold banks (gold as currency: not effected by inflation, but certainly 'more upstream than downstream' in valuation) will rise. And of course energy banks (kWh as currency: not effected by inflation, but certainly 'more upstream than downstream' in valuation) will rise severely. Local banks will be audited each week, both by professionals and by customers. In the near future will have more currencies that the only one they have today. One way or the other: most of the people (regardless if they have lost values or not) will be through with not visual, artificial values/figures/systems/models/banks/currencies.

Barters: Bilateral international bartering will grow severely. There will also be huge long term barter deals within bilaterals (between two nations who wants to help each other). Barter deals ensures the interest of both parties. Bilateral bartering will be a part of the granting distribution model that will become in place as resources will reach their maximum market price and the market price distribution has reached its maximum and demand still will be much higher than supply. A country as Venezuela has taken the lead in this. Oil for doctors (deal with Cuba), Oil for knowledge (deal with Portugal), etc. China is also very active with it. This type of mostly currencies and market prices independent (mutual interesting) deals will become a payment method as resources deficit nations will loose their purchase/payment power. This international bartering system will be a severe salvation for the former first world.

Energy

Definition
Reserves
PeakOil
Exploration
Impact
Crunch
Geopolitics
Denial
Price
Cost price
Export taxes
Price volatility
Conservation
Transition
Distance
Models
Localization
Supply
Climate
View
Installbase
Investments
Governments
Characteristics
Theory
Science
Inventions
Military
Currency
Refineries
Power
Storage
Management
Hydrogen
Infrastructure
Transport
Industries
Food
Carbon
Future
Integration

Definition: Energy is similar to credit a major facet of our economies/companies/households/lives. Our economy/society and we self don't know much about energy, still is it the main facet of our economy. What is energy? Energy was something we used for cooking and heating, and was mainly wood burning driven. Energy is the potential to produce anything trough devices. It can have several sources and appearances, but it 1) powers direct or (via power plants or other huge energy form transformer) indirect our devices and 2) extent our reach (extent the distances of all goods/services). Take energy away from our economy/society and all our devices would

stop working and we could not transport/travel anymore. Energy is the source of both life support (explained by impact) and prosperity. Our main energy sources in the 20th century was (and still is today) carbon/fossil based energy resources.

Reserves: Global carbon energy reserves are severely overrated/inflated. This done for OPEC quota reasons: if you're allowed only to pump up a certain percentage of your reserves: you start to produce inflated reserves figures, something that's done in the last part of the '80ties (caused by the Saudi swing capacity on request of the USA to break the back of the USSR economic as last/final/effective Cold War strategy: it robbed the USSR from its international purchase power) when oil prices where so low the national budgets if the oil countries came in danger. An other reason for this overrating/inflation of reserve figures is that it's convenient for international loan acquisition (the more reserves, the higher the loans and the lower the interests). One of the things the WorldBank could do is just initiate a free to join international oil reserves auditing model. Countries than give voluntary an international auditing committee all the reserve data and gets an official reserves statement. The WorldBank could decide otherwise not to grand any loan anymore to countries who doesn't applies to this objective auditing. Not joining this yearly renewed auditing method will become equal to overrated reserve figures. A simple example: own national industry newsletters indicates that Kuwait has only 50% of the official stated reserves. Reserves figures has 3 categories: 1P has a 80-90% confidence of the possibility to explore, 2P has only a 50% confidence of the possibility to explore and 3P has only a 10% confidence of the possibility to explore. The world needs an audited tank meter (how much oil is left, how far can we drive), only gamblers drives a car when the contents of the tank is uncertain. We're now build on quick sand. Not much of a foundation. We are all gamblers. Gamblers with our future and the future of our children (we -just only?- say we love so much). We keep driving without any clue on reserves. And 3P is not a useful figure. We just must take the real reserves (as in 85% of 1p, 50% of 2P and 10% op 3P), and we need to know of these figures and the classifications are correct. Furthermore we don't only need quantity figures, but also quality figures and the net exploration figures must be stated (tarsand and shales use a lot of their own energy to produce a barrel of tradable energy). Than we will see that easy oil is running out and al the happy days are back again voices doesn't wreck the perspectives on any energy investment anymore. This is so important: energy investments will never get initiated as the should be, just because some no-no's keep talking that there is no problem. For the sake of the no-no's and for the sake of the future of the world economy and mankind the WorldBank should certainly initiate this auditing structure, with as bonus to the nations that joins it, a certain backup funding (insurer of the insurers) of an energy investment program. The whole reserve data status is beyond any intelligent way of thinking. So much for the wise Western World. We're just a bunch of wild west cowboys, hoping for the best. Smart on actual data based policies is nothing for us: than we maybe should start to change our way of life by ourselves and that's something we don't like: we rather face the smash against the wall: much more convenient now, but certainly much less convenient than. Of course oil exploration technology improves a lot, but basically it is no more than just pumping huge loads of seawater into oilfields. If this is done to fast it has a reverse effect (water is heavier than oil, but oil has a higher viscosity, the water must be injected low and slow). In Saudi Arabia the water injections in the oil fields has strong increased. A side effect of oil field exploration extension technology is the pumped up substance has an oil/water proportion. an oil field dies if the oil/water proportion starts to become only a few oil and almost all water and the recovery of the oil becomes to expensive. A few years (if the water has completely find it's way to the bottom of an oil field) the field has a short last production phase. Injections of air/gas is also an oil field recovering technology: gravity than works more direct: oil is pushed to the bottom on an oil field, but it has small local

earth quake dangers attached to it, water injection doesn't have this danger. In Mexico a N (nitrogen) based gas injection technology is used to explore oil from the sharp (14%) declining Cantarell field maximal. Current status of carbon energy reserves: What is left of the global carbon energy reserves is very difficult to explore, heavy (not the light version we need: we need complete new refineries to deal with this type of oil), polluted (sulfur: we need large extensions to our refineries to extract the pollutions) and cost a lot of energy to extract (oil in tarsand and in shales are till only 20% energy effective: it takes 5 barrels equivalents to produce 1 commercial barrel).

PeakOil: Carbon based fuels are currently the major suppliers of energy. In only one decade time 3 billion new carbon energy users have entered the global prosperity class (household income of more than $ 7000) and the energy consumption of those 3 billion is only just started. Demand is exploding. This by anybody unforeseen demand explosion has as consequence that the PeakOil moment has come much more earlier than almost anybody expected. PeakOil is about having used half of the available oil reservoirs in the world. As carbon sources are finite (only a limited quantity is out there and can be used, there are no new capacities formed). This situation has some consequences: 1) Our supply will not grow, but starts to decline (the Hubbert curve/peak) (market supply/demand inequality driven price explosion). 2) We have first used the easy to explore reservoirs, what's left is much more difficult to explore which takes loads of investments to explore (exploration cost driven price explosion). 3) We have first used the light/sweet/clean/free reservoirs, what's left is heavy/sour/contaminated/bounded reservoirs which takes loads of investments/energy (refining cost drive price explosion). 4) Our suppliers of carbon energy sees demand accelerating, supply tightening more and more, are very aware of the finite characteristic of their natural resources and see the prices rise and rise and rise. This has impact on their production/exploration policies: why produce this year as producing next year give higher prices. If production next year double attractive than production this year, it's not a tough choice for the producing nations. The result is that carbon supplying nations are no longer front runners in investments: next year everything is severe more beautiful than this year. So why doing it this year? They do more and more this year just the production/investments they need for funding the needs of this year and making next years production possible. Next year they will do the production that addresses the needs of next year and the investments for the year after. 5) The yearly currency erosion on the capital achieved with former sales of resources, doesn't stimulate actual production increasing. Why sell this year when next year the for the sale received capital only has less value. Producing less oil this year and more oil next year is just an easy way of protecting against dollar value decline/erosion exposure. Why sale and get dollars for it which loose their value each month as they are in storage/use). 6) Resources rich countries choose more and more for attracting industries instead of exporting plain energy. Attracting industries gives besides the actual world market price an extra benefit for the resources owning countries: extra economic income and diversity of their economies, with all the extra economic spin-offs of that. 7) The energy consumption in energy resources rich countries is exploding as they mostly subsidize energy as compensating other not so nice facets of their regimes. The export/exploration ration is dropping year after year and last years severely. 8) We discover for each 5 barrels we consume, 1 new barrel. This 5 to 1 ratio has a huge impact. 9) The 5 barrel we use are easy oil and the 1 barrel we discover is difficult oil. So PeakOil is about a) an exploding demand, b) an ending road (finite source of energy) and c) continuous climbing carbon energy price driven by the above mentioned 9 facets. PeakOil has two definitions: The first is 'the moment we've used 50% of the oil', the second is 'the moment that production no longer increases'. The first definition is not correct and it also doesn't underline the fact that exploration is getting more difficult and expensive. An other facet is that the peak maybe will a plateau for some year and after

that a very hard (much more heavier than any current projection) decline. The bell curve shape is just a theory, the reality drafts its own curve, with maybe some attractive facets (like the plateau) and less attractive facets (like a very rapid decline speed). This is maybe the reason that coal miners and oil majors will move to each other (major to miner development). In coal beds there is gas to explore.

Exploration: In exploration efficiency is the major facet. In the start of the oil industry was only 1 barrel of oil needed to explore 100 barrel of oil. This energy ratio has dropped. Today every 5 barrels of oil requires 1 barrel for exploration. This drop in net result makes energy continuous more expensive. The driving facet behind this figure is that we of course first explorer the easy oil first. Why doing difficult and expensive if it could be done cheap at low cost. This is the huge danger of PeakOil. Reaching the top of production (the first 50%: the first/rising part of the bell curve) is about easy oil, after that what is left (the last 50%: the last/declining part of the bell curve) is difficult (and so expensive) to explore and the energy efficiency with drop each year till it reaches 1 to 2 or something and exploration can not longer be done profitable. In both energy reserve forecasts (PeakOil) and energy price forecasts this logical quick sanding of net energy output and excessively rise of exploration costs are two facets that are heavenly forgotten. When energy ratio's drop to 1 to 2 and/or exploring investment/operation costs are to high energy sources are only theoretically/physically present, but will not contribute one kWh/joule to the global economy. And due the fact that we first have explored the easy sources, we will face huge decline of 1P/2P/3P energy reserves in any energy reserve calculations as we actually will try to harvest much of these reserves. A lot of the hydro carbon energy assets on the global balance sheets we will not be able to harvest them in an economic way. We have been blind and believed in that the delusion we temperately enjoyed was our future, forgetting any economic facet, just living the live we lived. This consumption based/originated blindness for real data is one of the miracles of the 80ties and 90ties.

Impact: So energy is the potential to produce anything though devices (as said in the definition). Better said: the possibility of using external energy sources has brought us prosperity. The availability of cheap energy has boost our prosperity severely. Reversed said: if the energy becomes more expensive, prosperity levels will decline, if external energy resources are running out, prosperity will be gone. But what is energy really? People mostly will describe energy by the source they're using. In the days before mass industrialization the answer should be: wood (you burn it and you've got heat), horsepower (just feed them, and they the heavy part work for you if you manage them) and windmills (just build and operate them and they work for you). After that period (in the days of the first mass industrialization) the answer will be: coal (it fuelled heating and steam engines). Since the 20th century the answer will be crude oil, coal, tarsands, gas, biofuels and uranium (and we use the oil, gas and electricity for running all devices in our economies/societies/households). As the sources of these three energy streams are finite resources, and the world population and world prosperity (as in: energy demand by those two) grows energy gets more and more expensive and this start to threaten global prosperity. We need to find new energy sources, a longer walk on the oil, coal, tarsands, gas (fossil) and uranium (fission nuclear) road will bring us in severe problems and could end our economies/societies and give a world that is only capable of feeding 2 billion instead of the current 6.7 billion and the future 9 billion. They growth curve of the population is almost identical to the growth curve of the population. The reversed look to it gives the hard conclusion that if we don't find/explore other sources of energy the world population will go back to the 2 billion level of before the energy availability explosion. And this simple line stands for famine, chaos and enormous loads

of human suffering. Energy doesn't only give prosperity, it also is the maintainer of life conditions.

Crunch: What is the Energy Crunch (often called the Energy Crisis)? An situation where the demand for energy outstrips the supply of energy and energy prices starts to rise severely to economies burdening/burning/threatening levels, with the additional risk of even physical shortages (as in: everything stops, because everything uses energy). Is an Energy Crisis something that effects only the energy industry or does it effect society? The Energy Crisis will not effect negative the energy companies (their turnover figures only got better and better), an Energy Crisis will certainly effect very severely negative an economy. Energy is not just a side facet of each economy, it's the motor (as credit is the fuel). The Energy Crisis is about the fact that energy becomes to expensive for the high energy use economic model we have build. When energy becomes too expensive, everything becomes too expensive, as we use energy for everything. The 'music' will go play slower as energy costs will burden each budget. Higher prices will inflation. Higher prices with no economic growth will give stagflation (a friendly world for recession of an Economic Crisis). Economies will retract, bleeding bankruptcies and jobcuts. A self empowering downwards spiral, just like cheap energy was a self empowering upwards spiral. The Energy Crisis and the Economic Crisis it will cause will lead to huge international tensions and even wars. Afghanistan (gas pipeline), Iraq (oil), Iran (gas and oil) and Georgia (pipelines) are examples of this. War is an economic waste. The prosperity of the last decades is very much due to the absence of war. War burn economies and people and have very huge afterwards price components (due to economic damages, family destructions, physical and psychological damages, etc, etc). Fighting a war is not producing services and goods. War is economic negative. The energy crisis will also lead to more nuclear energy. Nuclear energy is severely asking for trouble: a relative small (5%) and temporally (max 15 years) solution with much bigger problems and risks into it. Building more reactors on one site is multiplying risks.

Geopolitics: There is no facet that influence geopolitics more than energy, energy is the dynamite on the table while everybody is smoking in the room. Energy explains almost any bilateral relation/agreement: USA – Saudi Arabia, USA – Afghanistan, USA – Irak, USA – Iran, USA – Georgia (Rose Revolution), USA – Venezuela, USA – Mexico, USA – Canada, USA – Bolivia, USA – Libya, Russia – Georgia, Russia – Algeria, Russia – Eni/Italy, etc, etc, etc. All the easy carbon fields are like beautiful girls: everybody wants to enjoy them. Or by flirting, or by marriage or by rape. The world has seen in one decade its first pipeline driven war (Afghanistan and the Unicoal pipeline), its first oil and currency driven war (Iraq and their abandoning of the dollar for their oil sales) and its second pipeline war (Georgia). Georgia that tries to invading two of her autonomic provinces and get kicked out by Russia. This all is not about and in Georgia's interest, but about the struggle for the control of the major strategically geographical position of Georgia by both the US and Russia for both their pipeline plans. One huge benefit of the Georgian War is that it has reduced the chance for a new oil/gas/currency driven war (Iran) severely, as now both superpowers has drawn the line for each other. The Georgia incident has made the world a safer place. Russia will win the pipeline war without very much effort, because Russia has delegated the matter to her governmental controlled businessmen (as in: Gazprom). While Europe and the US just talks about pipelines, the Russians get the signatures under their contracts: just by being active and offering good national industry support plans and finance to the national governments involved in the pipe line countries. Mammoth tankers of the enemy will be attacked in wartimes, causing a lot of local environmental damage. Later on the tankers will just been seized. Unstable regimes will fall. In Saudi Arabia the Royal Family (and thereby the US influence) fall and

the country will be divided in Shi'a state and a Sunni state. Iraq (never been a country: just a product of drawing boards of Western Nations) will be divided in a Kurdish state in the north, a Sunni state in the midst of the country and a Sunni state in the south (where people even speaks Persian) with close ties with Iran. The Kurds are the only real friends (government plus population) the USA have in the region. Therefore Georgia is of crucial importance for the USA. China and Russia will as close as many deals as they can with Central Asia and the Middle East. The Americas will be crucial for USA energy purchases, but the USA had some old pain to work though with almost al the South American nations (just like Russia has in Central Europe and Central Asia). The Middle East, Central Asia and North Africa will exporting power by power lines and maybe hydrogen by tankers to Europe, Russia and China. China will loose a lot of her export possibilities due the high energy prices, as they outstrips the labor cost of production. Geopolitics equals energy. Period. Nothing more, nothing less.

Denial: PeakEnergy denial is understandable. Denial is just one of the psychological phases we must go trough in our separation process from cheap abundant carbon energy. Denial gets dangerous as it makes us blind. This is what is happening right now. The denialers are still our hero's, they have a sexy message, we like to hear them talking, they make us happy and self-ensured, now PeakOil has become mainstream. There is no problem, the whole energy situation is a bubble. Speculators doesn't try to make a buck on higher prices, they cause them. Ban the speculators and the problem is over. And these 'low tech' nationalized oil companies, they don't know how to produce. Just de-nationalize the oil reserves again and the sun starts to shine again. The whole denial thing totally ignores that the subject involved (carbon energy) is a finite resource, that first the easy to find (and thereby to explore) oil has been found (and thereby explored), that actual produced supply doesn't grow very much and that demand is accelerating in some countries with huge populations. Denial is not based on actual data and an actual view on or analysis of the world. Denial is based on outdated historical data and ditto view on and analysis of the world. The problem with denial is: 1) It is not based on data, but on emotion (so we like to hear it and give it a lot of weight). 2) It totally runes our future by robbing even the short transition time we have. The denialers will be the jokers and in our history books of the future. People who just ruin mankind's future and caused major tragedies. Denial of riding to a cliff is not wise or funny. It is just stupid and dangerous. Denial quick sands every energy investment and transition effort. Let's find actual data and kick the denials than as facts and developments ignoring low-brained jokers out of the public debate. As long as denial lives, our future is at stake, because we will not act, as long influence rich knowledge poor people will tell us that PeakOil is only a problem between our ears and not really a problem.

Price: The price of energy we calculate our energy investments on is totally historical. This is a huge problem. Making calculations for the future, based on prices of yesterday. Cheap oil is over, what's left is declining, more expensive to produce (heavy, dirty, difficult to extract and expense to refine), more expensive to transport, is left in countries with an other agenda than the energy deficit countries, has a much lower net energy efficiency ratio (exploring it cost will cost more and more produced energy) and global demand will grow (even when the global economy will suffer severely under high energy prices). The reasons are mentioned above, there is no need to point out them again. Energy will become in the next years 2 till 5 times more expensive than it is today. Any technological analyst who draw the energy price curve will say that with knowing any of the above mentioned fundamentals. If it will be 2 or 5 times more expensive depends on the effect of the higher prices on the global economy. The solution for high prices is high prices: high prices kills demand more effective than any

conservation campaign ever could. When investors analyze the global energy situation they know that further income calculation must be made on energy prices of at least $ 250 a barrel oil. The problem is that the general consciences in the financial world (due to denial) is a calculation based on $ 80 per barrel oil. We must leave all energy fairytales: the will bring us in severe problem. Coal is not cheap. All energy prices leveling each other. When the one becomes expensive, the others will follow. Coal has risen more than oil the last years, but nobody knows and nobody use the actual price of coal in their calculations. As coal to power plants are dedicated to coal, they have no way of diversify their fuel. They just need coal. The amount of currently in production coal plant is so giant that the price of coal will explode in the next years. Everybody is building coal plants without any long term purchase contract (no in terms of supply and certainly not in terms of price). Where must all that coal come from? The miners doesn't know it. If they doesn't know it, who will know it. The price of energy will explode. There will be actual physical shortages. Future energy price calculations needs a wake-up call. If the future price reality is rolling in the energy investment calculations. Energy investments will explode and become huge in both financial volume as in financial performance. The only thing future energy investments needs is actual/future energy data/perspective on energy supply/demand and thereby on energy prices. The market situation (supply and demand) is one facet of the energy price.

Cost price: Separate (or on top of) the market driven price rise, there is a severe cost price increase. As the average age of movable drilling units rises severe and new investments are not made (due to PeakOil), the cost of movable drilling units rise severely. As the demand for high skilled oil and geological employees grows and there are not much are scares (due to PeakOil), the cost of specialists rises tremendously. Almost all specialists in the oil/gas sector has resigned their jobs and rent themselves to specialistic headhunter-like agencies to the highest bidder. Most of these specialists who makes $ 500,000 to $ 1,000,000 a year. This also gives a knowledge/brain drain from the private international/global operators to the state owned national operators. As the easy to explore and high quality oil is used (the first 50% till PeakOil), the rest is difficult (as in: expensive) to explore and has low quality (as in: expensive in refining). The cost structure of energy (total independent of the market situation) has only one way: up, up and further up. Easy to explore oil is something of the past and with it low cost prices. Only the Middle east has still relatively low cost prices due much easy to explore oil/gas reserves: they will earn the most per barrel. The rest of the oil of the world faces a severe cost prices rise.

Export taxes: As oil prices rise, governments not only nationalize (partial) the oil/gas companies and there assets, they also install huge export taxes (or if that is not possible by trade agreements as in Canada: a water tax special designed for the tarsand industry). In Russia mid 2008 the export tax was $ 85.10, this while mid September 2008 the export price in the export harbor Primorsk was $ 85.70. The export tax in Russia will be lowered on October 1, 2008 to $ 66.10. With the old export tax the exporters in the Siberian city of Nizhnevartovsk would post an operating loss of $13 per exported barrel after costs and taxes are taken into account, as they have purchased against higher prices.

Price volatility: The price volatility is a huge problem in the energy market. Only back to back operating trading parties will survive, the others will win a lot upwards, but will be hit downwards. The downwards price from $ 147 per barrel (July 2008) to even under $ 90 a barrel (September 2008). This 35% price drop has whipped out many high risks

taking trading parties in just only 2 months. For many investors (and many investment banks) this was the final blow. Price volatility is also the reason that energy investments are difficult when only calculated on (recent) historical prices. Price volatility has a lot to do with the short term acceleration/slowdown (perspective) of the global economy. For long term energy investments, the availability of the fuel and its price fixation are crucial. This is the reason why renewable energy certainly will win of carbon and nuclear energy. The cost price of renewable is in design very fixed will the wind/sun doesn't send daily fuel bills ever. Renewable energy is non volatile in cost price (as long if the interest rate is fixed).

Conservation: What is the solution? Very simple: First we must conserve energy maximally on each facet where we can. Conservation in terms of more energy effective/efficient equipment (using less energy using for performing the same tasks) and just lower use of energy (when something become expensive demand will go down) will we get automatically just as side effect of the higher energy prices, it are the benefits that comes for free by high energy prices. The solution for high prices is high prices: high prices kills demand severely both by less use and higher technological efficiency, for both this ways of conservation is not any governmental policy needed: the market will solve this by it own: high prices are the best educators/changers there are and ever will be. But just using less (by new technologies and less usage) will not solve the problem (the fact that our current sources of energy are running out).

Transition: As our current energy resources gets more expensive and even sometimes will not be available, we need to transite to other/new energy resources. Transition is not about doing the same as we do today only with an other type of fuel (and therefore with the need for new devices). The interstate and international flights we will loose due the combination of the high energy demand of this and the high energy prices. The same applies to the interstate highways. Energy will become expensive and anything that uses a lot of energy will become a luxurious item to use. So transition is not about cars/trucks/planes. We will loose them anyway: we ill not be able and willing to fund the future expensive energy use of them anyway. The will eat to much out of our prosperity. Transition is about where we work (working in the city will become to expensive by the drive to it) and how we live (our houses). Transition is about a new economic model (localization due to energy prices) with all it's advantages and disadvantages. We must reinvent our economies and our prosperity. Transition is about a new way of using energy at home. We will not only purchase electricity from the grid, we will produce it by ourselves, we will less shower and use more the sauna (as that demand less energy). Transition is about redesigning our economies and our way of life, when cheap energy has left us.

Distance: In the definition of energy the facet of extending reach/distance is mentioned separately, although transport/mobility devices are just devices of course, but they don't contribute to actual production of goods/services, yet consumes 50% of the energy. Transport/mobility use 50% of all energy consumed and have no other contribution to our prosperity than extending reach. When energy gets expensive and starts to burden economies, reducing reach is a huge cost reduction potential. Reducing reach give severe cost reduction in times of high energy costs. When energy gets expensive distances/reach contracts to shorter/smaller values (reversed said: prosperity can survive when the reach gets smaller. In plain English: a vibrant local prosperity focused economy is the best performing economic model in times of expensive energy. Or: transport/mobility takes more energy than it contributes to prosperity. Or: how shorter

the reach, how higher the prosperity. Higher energy prices let the factor distances/reach melt like snow in the sun.

Models: Designing and implanting of new economic/business/technological operational (office/production) models are the complete undiscovered pearls of conversation: They just cut out severe loads of energy demand in economies/societies. Al these models have on thing in common: they cut out the physical distance facet out of traditional models without touching reach (in other words: the benefits of reach will still be available without the time/cost burdens attached to physical distances). New models cut severe the energy demands of officework and production. But just using less (by designing/implementation these new operational economic/business/technological operational models) will not solve the problem (the fact that our current sources of energy are running out).

Localization: As earlier stated: Transportation/mobility (as in traveling distances by products and people) doesn't contribute to prosperity, but just burden it with the costs of time, energy and transport devices. When energy gets expensive distances will retract to smaller values. In plain English: local economies will gain severely in importance.

Supply: As demand for energy rises by population growth and prosperity growth we have been confronted with a supply problem (and the by the market mechanism of supply and demand generated higher energy prices). This will literally burn our economies/prosperity. Therefore we must find, develop, bring to cost effective production and bring online all types of new energy sources as soon as we can get in any possible quantity. We must take care of any form of current available (and by these new high prices affordable) energy resources online. Diversifying of energy sources (also an important price and supply stabilizing factor) is one of the automatically occurring effects of these new sources exploitation drive, so it is not necessary to focus on that specific (gives us better focus: just bringing online every thing we can bring affordable online.

Climate: The climate discussion will undergo two major changes: First due the energy demand it will loose completely its power (as in: becoming no decision facet anymore). The struggle for keeping supply as closed as possible to demand will lead to use of huge loads of carbon based energy, also heavy use of even the nastiest as oil, heavy oil, sulfur oil, coals, tarsands and shales. The last two carbon sources (tarsands and shales) have only a 50% to even 20% efficiency (20% efficiency: 5 units of that energy source needed for producing 1 commercial transportable unit of that energy). On the other hand the CO^2 will be supported huge by the fact that in the struggle for realizing new affordable energy capacities huge economic affordable renewable energy stream will come online. As carbon energy prices rise, carbon free renewable energy will become the most affordable energy source.

View: Our view on both energy in general and energy sources specific is formed historical. This is understandable, yet not adequate, because the energy situation in general is changed severely the last years. Views based on former situations don't fit in totally changed current situations. We need a new view, based on the facets of the actual situation. The historical view was that energy was carbon, abundant available, in attractive great qualities, in attractive good qualities, with low exploration costs, low refinery costs and low distribution costs. This view has become outdated: a photo of a

former world. The price facet has awakened us globally and additional in some countries (South Africa, China, India, Nepal, etc, etc) also suddenly and/or controlled (few hours a day) blackouts changed our attitude of taking energy for granted. For the Western World this is unthinkable, but according to the Energy Commissions of more a more western nations something that lays ahead within 5 years. We need a new look on energy. Energy is something that is expensive and which continuity is no longer the default state of quality of service. We need an other view on energy sources. Carbon/fossil based energy is no longer the only affordable energy source due the high prices of it. Energy from alternatives has become equal priced that energy that has a carbon/fossil origin, and as carbon/fossil prices continue to rise by the above in PeakOil mentioned facets, alternatives will even become cheaper than carbon/fossil energy. But the demand for carbon/fossil energy will grow, the reason is that our complete installbase (as in: devices) is carbon/fossil based. Example: We currently don't have electrical cars, but we have current carbon/fossil fueled ones. Energy in the future is direct electricity or hydrogen based warmth/explosion/electricity.

Installbase: As we will change to other sources of energy, we will also change to other types or energy. This is an additional problem. Our current devices are not suitable for these adjusted types of energy. Our cars don't run on electricity, but on gasoline, LPG or diesel. We need a complete new installbase. A complete new range of devices. From heating, to cooking, to mobility (scooters, bikes, cars, trains, agricultural machinery, planes, etc). As economies really will suffers under high energy prices, economies will face a complete extra needed investment wave: the installbase (most of our devices). This in a time that the financial system is 'down for maintenance". If we every need a good financial system, it was the next years, but we must do without it. In the whole installbase transition we have one huge 'tailwind'. Not all devices will go with us to the next phase. Cars and planes are two huge capital intensive installbases that we don't need to transite: they use so much energy that we just use less of them and by this the old installbase will perform till they are technological or economic dead.

Investments: Besides the needed huge installbase investment wave, there also other huge investment waves needed in energy exploration/generation/harvesting/distribution. As said already: all these investments waves reach us at a momentum that the financial industry is terminal sick treated on the ER department. When we really needed financial flexibility (as in: credit), we are faced with a situation that credit is overused and overexposed. This need for financial solutions will speed up the bail-out of all the stressed assets of all financials worldwide by the governments. An action that will reshuffle the power of the separate currencies on the globe by the size of there stressed debt over-valuated purchase exposure.

Governments: Governments are not quite actual in their energy perceptions. Expecting that national/state or federal governments will take the lead in addressing the Energy Crisis is like expecting grandfather to win the New York Marathon. The only governmental layer you can expect a lot from is the local governmental layer. Governments has a whole toolbox to address the Energy Crisis, but if they will use them is certainly the question. If you don't get the problem, who you should address it. The toolbox of governments contains eight powerful tools: 1) Propaganda (not a negative word, just a description of governmental originated information). The quickest, easiest and cheapest way to do this is, just proposing a speed limit law. The newspapers and public discussion will handle the rest of that. An other smart way of propaganda in the installation of an energy Department with an Energy Minister (if both aren't yet already installed). Also

here the media, the business community and the public will take over the proclamation for the state. 2) Initiatives. Governments are not very well known for their initiative capacities. It's also a question if taking initiatives can be considered as a governmental responsibility. Governments and action smells like the USSR economy. Proven not very effective. But the situation is emerging, should this change this? It would be the worst thing to do. Everybody will except the solution than from the governments and they'll not be able to provide it. The best thing governments could do is just saying: there is nothing we can do, the only ones that can help you are you and yourself. Than everybody well take adequate action, measurements will be multiplied, passive policies prevented. 3) Subsidies. The problem with subsidies is that they disturb the healthy mechanism of a free market and demand for control mechanism for preventing abuse. If subsidies will play a role they must be channeled by market parties. For example: A government can subsidize energy adjustment investments in housing by paying a part of the interest. The administration than is completely pushed to the banks, who welcomes this possibility to give their customers an interest discount certainly. Subsidizing also has effects on (already much overstretched) governmental budgets. Some governments therefore take money by extra taxation on carbon energy and put that in renewable energy. Germany is an example of this model and it has made Germany a leading technological nation in research and sales of renewable energy technology. Furthermore is cutting any subsidy that increases energy use a good thing to do. 4) Taxation. Taxation is a tool governments like a lot. The more the better. But government is an artificial resource and has its own optimal balance point (under it: heading for national chaos, above it: heading for national economic and freedom decline). Taxation of carbons that only feed the general budget could speed up transition, but certainly will not make the government popular. Taxation of carbons that facilitates renewable subsidy budgets could be an idea. But may taxation is a tool governments has already to much. Working several months a year for the government is not a sign of high development, but just a modern and more civilized form of slavery, something that will no longer accepted in the 21st century. Cutting each tax deduction that encourage energy use is certainly a good thing to do. Cutting in subsidizing (by tax deduction) of long work/home distances is a good thing to do tool within taxation. Maybe movement subsidy by tax deduction if people move closer to their work, of (better) a tax deduction if people stop commuting by remote office technology or taking a job more close to home (moving the jobs, virtualizing office spaces is better than expensive movement subsidies). 5) Legislation. Governments has used legislation already heavenly as tool for addressing other issues. Legislation is mend to enforce behavior. Maybe we not must use enforcement not for addressing this issue, although it's certainly a very severe issue. A speed limit legislation proposal is the best (quickest, easiest, cheapest, most open) governmental propaganda ever possible concerning the Energy Crisis. 6) Energy Department. Not any country has yet an Energy Department and an Energy Minister. Energy is the main thing in economies (and therefore also in governmental budget funding). A nation without an Energy Department and Energy Minister has less economic future. 7) Budget focusing. Current budgets can be steered very easily in the energy research/education/investments direction, by just demanding that a certain percentage must be spend on energy research/education/investments. Just one simple steering issue, that will have a huge and very diverse impact. 8) Guarantees. Guarantees are a major powerful tool for governments, as they don't burden current budgets. Instant mega effects and an administration that is done by the market. If a national/federal government says: energy become expensive, solve it companies/households, we will guarantee the bank that will lend you the money the investment. Than a government will only have to make a simple legislation, that has two parts: one in the form of an A4 for the text of the legislation that addresses the companies/households and one a little more extended version for the banks. The investment wave than will boom, without any problem. Guarantees are just perfect, because they only give an off-balance liability and

by the energy price development the contra inflation characteristics of the energy price, makes guarantees and energy investments to a perfect created for each other couple. Concluding: What can governments do to address very quick and very easy the Energy Crisis? 1) Just propose (not essay bring in place) a speed limit legislation (the media and the public does the communication on the Energy Crisis from their better than any government ever could do). 2) Guarantee energy investments (the companies and households will do a better job than any government ever could do, and the market price of energy takes care that the liability very less will be actual draw). Governments also has both a legislative and a guarantying task in energy infrastructures. Governments that are trying to initiate energy infrastructures. The Nabucco pipeline from Central Asia to Central Europe is a perfect example: governments are to slow for business deals. Gazproms comparative South Stream pipeline has (although started later) already build up much more advantage in signed national deals. Russia plays the energy card, but not by government, but by governmental supported businessmen. This is why Russia gets the deals: businessmen understand doing business, they are good in compromises and are focused on getting a deal signed. Governmental officials have other blood. Russia plays two types of cards, the Nabucco initiative only one (the governmental card). One huge disadvantage of Europe is their colonial genes. This late ticket of colonialism has damages Europe's foreign policy a lot and still will: Europe is high hearted in negotiations: but these times are over. Just like the bullish attitude of the US has damaged them already a lot and will damage them even more in the future. Self esteem drives the 'new' nations, they will do business with everyone that honors them really and the same time will really support them in the issues that are important for them.

Characteristics: Energy her characteristics are researched/described in/by the thermodynamics science: 1) energy can not be lost (reversed said: can not be generated) only be processed/harvested 2) these energy processes/harvesting are/is never 100% the wanted results efficient, other energy facets will always occur and burdens the process efficiency (example: the light bulb, give not only the wanted light but also lots of unwanted warmth) 3) energy always flows automatically from high values to low values (example: when 1 room is cold and 1 room is hot, and a door is opened between the two rooms both rooms become warm, the heat of the hot rooms will flow into the cold room till they both have equal temperatures).

Theory: So our current view on energy is narrowed by our current use of sources of energy. This is understandable, but not an objective way to look to energy. We need a new look on energy. We must loose the carbon/nuclear spectacles. We first need a complete new energy theory, only than we will be able to see new opportunities. Why had people like Tesla and Einstein such a huge effect on energy science? They look to it from a total different perspective. We must start to see that there is no mass at all. Everything is just organized energy. Than we're open to accept that the whole universe is an energy model with compressions and dilutions. Compressions we call mass and dilutions we call vacuum. By enough energy compression mass gets the characteristics of touchable matters. The zero-point field is the highest form of dilution / lowest energy value that is possible by the current size of the universe. Quantum physics and the universe describes very much similar energy fields. Energy harvesting is about utilizing the energy differences between these compressions and dilutions. By the second law of thermodynamics energy always flows downstream -from high to low-. Energy potential is within the energy difference and some of it maybe can be harvested, this is the reason why converting mass -compression- into warmth -dilution- releases so much energy. Than we enter the energy room by a complete other door and are able to see complete

new things by this new perspective. We need a new perspective on energy. Otherwise we just recycled yesterdays knowledge.

Science: The total new perspective on energy we likely not will get from the scientifically world. The scientifically world shows major characteristics of fossils (once alive, now just a capture of that former life in stone). The science world has become more about career and less about science. The science world has got a reactionary attitude/ambiance. Science needs explorers. People who have the courage and the capabilities to explore new things. We wants to jump mile ahead and than work their way back. Science today is like Verdun: much digging, less progress. Science must loose a few pounds to get dynamic again. Science in the 21st century (as in: today) needs people like Tesla and Einstein: we dare to jump and look to things from other perspectives. Science needs more Columbus type of people. To many scientists have mortgages. To less scientists are really 'taken' by something. Emotion for something is considered not scientifically. Science needs a wakeup call. The most easy way to do this is cutting budgets. Budgets and science are contrary. Very much contrary. Scientists that demands more budget are not the most brilliant scientists, but more managers. Science has become to specialistic. Science needs a new science: comprehensive science. Energy science can be that science. As everything is just organized energy, than energy could be the comprehensive science: combining biology, chemistry and physics into one new knowledge area. What maid Tesla and Einstein so brilliant? They saw this and could by science jump miles in years. Imagination is everything (Einstein). Tesla lived in his own state of mind, driven by his passion for energy. They where discovering scientists. A mix of defense and discovery backed by a scientifically approach. No longer just defense, no longer is only yesterday leading, but tomorrow gets 50% of the time/resources.

Inventions: The most world changing inventions have not been made in labs, but in the study and the garages. Behind all world changing inventions was a total new approach. Tesla draw his concept of the induction motor just with a bough of a tree in a park for a friend with he had a discussion on the use of electricity to power the engines in the factories of the world. The world needs inventors. The Energy Crisis needs inventors. Inventors that make energy more cheap. If we don't get them, we're in serious very deep problems. Inventors needs scientists. Inventors and scientists come from different planets, they speak an other language. Scientists don't want to loose their good name. Therefore scientists must no invent: inventing is being exposed to risk. Scientists don't like risks. Inventors operate in the 50% till 100% risk area.

Military: Energy will overtake completely modern warfare technology. The Neutron Bomb was abandoned by public responses to the concept in the '80ties. But the military industrial complex is certainly very much open in research funds and active production of energy weapons. SDI and HAARP are the big projects that are published and are in realization. But reports both from Panama (see the Panama Deception) and Lebanon (see Google) indicates that the 400 year old gun based technology is due to replace with new energy weapons. The old fashion guns, machine guns and artillery will be replaced with some new technology Tesla one 100 years ago has developed, as side effect of his research, but was not very enthusiastic about due the consequence for humanity (like Einstein for the same reasons was not enthusiastic on the N Bomb). The military industrial complex certainly will fund any company mobile energy storage solution. Sometimes bad things has good side effects.

Currency: Energy maybe also will become one of the main commodity based currencies (beside water, but that has a quality facet beside a continuity facet). By the fact that energy has the huge advance that it has no quality aspect (besides continuity) and its working value is not inflatable by anybody, energy could become the main currency. With a kWh value that varies in a steady schedule per hour of the day, or with a steady value regardless the time of the day as mankind starts to adjust more and more their energy use moments (automatically by the power management unit everybody will have) by the energy supply. Energy as currency would loose it value as we could find and harvest new abundant energy resources.

Refineries: As the light and sweet oil is used, we face an era with heavy, sour, polluted oil. We face a high speed writedown on all existing refineries. They're most designed to handle light and sweet and not to process the leftovers of the declining side of PeakOil. Furthermore will all production countries no longer just export crude, but have the refinery capacity income (the crack fee called) themselves and they see this also as a symbol of nation pride and technological process. The new refineries will be in the oil resources owning countries. This make also asphalt much more expensive in the Western Nations of the world, but due to PeakOil, roads will need less repair, so that's not a huge problem. Refineries of the future are flexible, have no only a few reactors based design, but will have a more multiple flow/tube based design, making the refinery more flexible and more redundant. One of the lines can be put down for maintenance, but al other lines will still operate, making the refinery both more stable and more flexible in production.

Power: Electrical power is the future face of energy. Electrons will replace molecules (where this already isn't done). Maybe there will be a second face of energy in the hydrogen economy, this depends on the development of hydrogen technology, both in producing and in local/mobile conversion devices. But for now the hydrogen economy is just science fiction and has the huge disadvantage that is 'offers' people/companies/governments a not existing 'solution'. Energy will be more and more less carbon molecules and more and more electrical power. Our power grid infrastructures are old. In technology. Based on central power generation. The future is about decentral power generation. Our power grid infrastructures are 'low capacity' according to some futurists. But as power generation will become most decentral/local, the transport capacity need will be lowered severely. Some HVAC infrastructures will be changed to HVDC to create an interregional (but more likely an international) network that feeds power from difficult carbon (coal/tarsand/shale) rich countries and from desert rich (CSP) countries.

Storage: Electrical power is a momentum potential, it's only available on the moment it is available has in itself no storage characteristics and is gone 1/50 or 1/60 second after its potential (by a 50 or 60 Hertz AC cycle). Power can only be stored by conversion to other energy statuses and this will always lead to energy lost to warmth and other not wanted types of energy in putting in storage, being stored and taking it out of storage. Beside these energy looses, storage facilities cost capital, maintenance, management, value reduction, space demand and risk insurance. So live energy is the most efficient (and therefore cheapest) type of energy. Just like on location energy also is the best type or energy (preventing transport investment and looses). Storage of power has three drives: 1) saving/managing daily occurring overcapacities cycles, 2) preventing/managing daily undercapacities and 3) giving mobile capacities (needed in mobility) and 4) giving offline capacities (just by hydrogen of by virtual -product production processes- needed by off-

grid supply and/or demand locations). Each household and each commercial building will have some sort of chemical storage unit. Effective hydrogen production is still a long road to go, effective and decentral (micro sized) hydrogen production is even further away. Nothing is achieved yet technological in this direction. The hydrogen economy is a beautiful concept, but still technological some bridges further. Due the fact that storage costs a lot, storage will become also more virtual: use/demand moments will be adjusted to the supply: we will use energy on the moments it's the less expensive.

Management: Local power management will be more important than local power storage. The old concept of / view on power storage is still based on continue full capacities and overcapacities. That will not be the case anymore: under capacities and black outs will more be the case in the future. This will increase the demand for storage, but as storage demand capital and space, management will be more popular than storage. Our whole current thinking is based on cheap, abundant, always available energy. We will have an other world in the future. One where energy is expensive. Energy use will be done in a balance between needed and available. Management software will manage this automatically. The washer will be filled with warm sunthermal heated water during the day. The peak load of any installation will be severely lower. Management software also 'decides' to purchase grid supplied power when it's cheap available on the grid of deliver power to the grid when it's expensive on the grid. Micro management software will also deliver power to the open grid for virtual delivery to someone (the grid will provide the distance data and the transport fee). Local grids will have their own medium infrastructure management system doing the same on local level in interaction with nearby local networks and regional local networks.

Hydrogen: Hydrogen is also a possible transport and storage method of energy. Hydrogen is very explosive, so it has a lot of safety and terror issues, that electrical power lines has less if the infrastructure has a redundant design. Production of hydrogen is in 2008 only 50% energy effective, but this certainly will be increased to higher efficiency levels (less warmth, more hydrogen) by the use of a basket of electrolysis efficiency improving technologies. The efficiency of hydrogen production of course must be improved. This will be done by a basket of technologies, in the best case exploring energy out of a separated cooling water stream, instead of producing warmth in the electrolysis water.

Infrastructure: Power transport (and also digital communication by videocalling) will gain enormous market shares as carbon energy phase itself by increasing prices. Transporting power will more energy efficient due to new technologies. Sea based wind parks, desert based concentrated solar farms, on site tarsand burning, on site coal burning, on site heavy crude burning will gain popularity as power transport lost is will be reduced severely by the use of less energy by transport losing technologies like HVDC (High Voltage Direct Current) with only 3% lost per 1000 km distance. To install a new global HVDC infrastructure will be to expensive (just only by the copper price). Designing a HVDC infrastructure out of current HVAC infrastructures will be the only affordable solution (as it's just a management and transforming equipment issue and no copper issue). Although using this HVAC current infrastructure will give a lot of extra transport kilometers are these infrastructures are designed for facilitating power distributions from total other geographical locations and also more designed for creating redundancy than for shortest line to remote locations. An copperless alternative is the HTS/LTS (High Temperature Superconductor / Low Temperature Superconductor: where high is relative, so still very low in temperature) technology. Using super conducting characteristics of

two very small iron wires cooled down (surrounded) by a compressed (and therefore cold) helium or nitrogen in a series of pressure resistant tubes, so that damaging just one cooling element will not interrupt the transport function at all). Remote windmill parks (like the offshore/sea based ones) and desert based concentrated solar power needs local power infrastructures on the remote location and power transport structures from source to destination. Expecting those both from governments is unrealistic. Governments are too slow and too inefficient to do this. Governments certainly can make legislation that opens every power for transport for everyone against a maximum mentioned price. This opens the market for power transport companies. Governments can stimulate a power transport infrastructure by (partial) guarantying any power infrastructure investment on unique routes and use a permit based legislation that can press power route operators to increase transport capacities if needed. Certainly in the US the power transport capacity from the wind corridor and the solar corridor to the demand corridors is currently almost absent. Power transport infrastructures (HVDC and HTS/LTS) are the major focus area for the WorldBank in the next decade. HVDC and HTS/LTS will be combined with fiber: increasing digital infrastructures in redundancy and/or reach. Africa and the Middle East has both poor power and fiber infrastructures, while they have the best CSP (Concentrated Solar Power) environment by their deserts. The new digital hubs of the world will be located at the hubs of the power infrastructures. Giving power and fiber redundancy for the datacenters (average 75% of a datacenter investment budget) for free just by the location. Hydrogen is also a good transport method of energy, although hydrogen is very explosive, so it has a lot of safety and terror issues, that electrical power lines has less. And the efficiency of hydrogen production of course must be improved by a basket of technologies. Pipelines are the nerves and blood vessels of tomorrow economic world. Russia knows how to play this card (nations industrial structures enhancing business deals). Europe not (too arrogance and too much just talking). The USA not (too bullish attitude and weapon deliveries while not weapons but industrial structures enhancements are 'in' now, no weapons, but ploughs). As carbon energy miles (the distance between production and consumption) increases due the peaking of both Prudhoe Bay in the US, Cantarell in Mexico and the Continental Shelf, transport from the new production locations will become more and more important. The current number of mammoth tankers doesn't suite the increased carbon fuel mileage. The bottleneck in this whole new (longer) supply chain are the tankers. Tanker operators will earn their investments back in just less than a year. There is not enough ship building capacity on the world for these huge tankers. Container ships will been adjusted to oil tankers, double skin designs will be abandoned by the need for transport capacity, causing some severe local environmental disasters.

Transport: The only thing that will be transported a lot in the future is electrical power and digital bits. Physical transport (as it demands a lot of energy) will decline very much. Air transport and air travel was only massive possible due to cheap kerosene (jet fuel) prices. Interstate highway transport from east to west of a continent was only possible due to cheap diesel prices. This will change the ranch of both products and people. There is no cheap alternative available for these former cheap carbon based huge loads of energy. High energy prices stops the globalization trend in both travel and production: it just will become too expensive. We're in denial of these whole transport (and thereby also mobility) issue, but the only ones that in the near future will fly, commute and use foreign products will be the above average wealthy. This add not a few items, but almost a whole Yellow Pages of 'to do things' to our PeakEnergy response to-do-list.

Industries: Industries will move to energy sources (less transport costs and more certainty in delivery). In the US industries will move to the wind quarter just between the

east and west costs: Hereby being able to own their own windparks and reduce both energy miles as transport miles. Industries will concentrated themselves also near rail roads for cutting transport costs on resources and ready products. And if the industrial model we have no will survive the Energy Crisis is very doubtable: it has been designed/developed in times of cheap and abundant energy, based on globalization. When the statement is made that PeakEnergy is the end of China as producing zone/factory of the world, everybody in the Western World is happy by the fact that it 'will bring back the jobs home'. But the same cause of that development (high energy prices that outstrips the labor price facet) will also have major impact on industries all around the world. High energy prices and thereby high transport prices are the dead of our current way of industrialization. Central knowledge driven decentral actual production will replace it. The production model of the 21st century has many characteristics of franchising: An ideal mixture between global and regional/local. Product design, product processes, production equipment, branding, marketing and marketing materials will be done national/global. Actual production will be done regional/local. Managed fragmented industrialization will be the forth industrial wave. The 1st was due to water/wind mills, the 2nd coal/steam engines, the 3rd power/oil engines and the 4th characterized by solar/decentral.

Food: From the 26 barrels of oil each American use each year is 10 barrel used for the persons food production (9 for cars and 7 for home). Our current way of food production is completely based on cheap carbon energy, and as energy prices rise, our food prices will rise along with them. Fertilizer takes a lot of these 10 barrels per person for food. The production of fertilizer is basically capturing N out of the air (there by 78% abundant available) and transform it to a water dissoluble substance, which looks easy when reading this line, but is a very energy intensive process. Replacement of the chemical plant manufactured fertilizer by on the soil working (like yeast in bread) algae/bacteria that captures on location N out of the air and made it water dissoluble. This will reduce the energy demand of food severely. A second huge development will be the local production of vegetables/fruit/herbs/flowers/fish 'off-season' and 'off-location' by Grow|OS in a technological environment that very space/energy/water efficient. Grow|OS facilitates both crop specific profiles (the best artificial settings of all technological facets per hour from seed to harvest) and high tech greenhouse devices. The crop specialists/manufacturers can make just the right crop profiles and port them to Grow|OS in the Grow|OS crop porting tool and the device manufacturers just port their device to Grow|OS in the Grow|OS device porting tool. The result? Any crop can grow anywhere on the world regardless the location and the season. The fertilizer/water/space/energy demand is lowest as possible. By the artificial light (the whole spectrum available and manageable for the crop profile makers) it can be done underground in artificial levies with just houses or commercials property above it. More information on Grow|OS can be found on www.growindus.com. Even in the tropical areas of the world Grow|OS can reduce the water need of agriculture severely.

Carbon: Carbon capturing will only be done is the carbon can be used. Growers like higher CO^2 air levels in greenhouses (as air fertilizer). If we find ways to put CO^2 back into CH we will do it. Till that time any CO^2 capturing project will be turned down due to accelerating prices of energy. For example: Coal to power plants doesn't need punishing: they will need coal and the coal will not be there. The coal to power plant operators will not have capital for CO^2 capturing, they will be broke. Having invested in a power plant that is expensive to fuel daily and with out that daily fuel there is no power. The whole CO^2 discussion is near the cliff and will be soon over. Prices will dictate energy reductions. Huge energy bills due to market mechanism are the best preachers and

actual behavior changers. Even better than Al Gore (and that's really difficult: the guy had really impact on the world).

Future: What is the future? 1) Energy prices will be much, much more higher than we used to. All models based on cheap energy will be abandoned (as they become to expensive). We will switch to low energy / high prosperity economies. The distance facet (transportation/mobility) will be cut where possible, as it will been seen as a prosperity burning/burdening time/energy/device costs facet of economy. 2) Energy prices will harmonize due the market demand/supply mechanism. When the one source becomes to expensive (for example: oil), nations will switch to other resources (for example: coal or natural gas), till prices are harmonized. Nations will a lot of power production switch capacity are able to reduce the energy burden of the economy with al least 5%, but there is no nation with power production over capacity as power demand rises more and more. 3) Natural gas is an energy resource that beside its energy value also a flexibility characteristic. Gas driven power plants can be fired up and turned down in just in a minute, no other The world will stay searching for a technology that will release/harvest energy. 4) Renewable energy will become the most affordable energy source. 5) Economies will be strong localized. 6) The search for new both abundant and cheap to harvest energy will become the major direction of science, integrating many disciplines. 7) Energy storage and flexible energy use solutions will become important technological area's. 8) We will produce most of our power at our homes/offices: each building will have maximal PV energy generation by other roof, wall and window (invisible partial glass embedded light redirection to the side: concentrated PV technology) constructions and a vertical design based no noise windmill on the roof. 9) Factories are energy deficit: the will buy power from surrounding homes. 10) Any domestic/commercial building will have a power management device that adequate manages power use by current power generation and grid power prices. 11) If energy storage devices get less expensive, every building also will have an energy storages device. 12) The electrical grid will get a complete other topology, not longer based on central power production, dedicated on decentral power production. The local grid will be bought by the local government. 13) By the new grid design, transport fees on the grid will be divided in local, or calculated per destination. Overcapacity can be exchange between everybody against only a small (grid investment/maintenance/transportlost) fee, the shorter the distance, the more attractive it will be. 14) the edge equipment (measuring power in/output from/to the grid) will be a grid approved device. 15) Power theft (by device manipulation) will be track instantly by the grid and will bring someone in court. 16) Power generation equals not only no expenses, but also earnings. 17) Energy is capital. 18) Coal miners and oil majors will move to each other (major to miner development). In coal beds there is gas to explore.

Integration: Energy is not a standalone facet of economies. Standalone solutions are no longer valid. Only comprehensive solutions will be able ton address the future situations. Comprehensive views and strategies are will gain enormously in impact. This is a huge challenge as all knowledge area's are like islands and there are just yet not many bridges between them. But all facets will meet each other in the empire of the future: the vibrant local economy. For a comprehensive look and much more actual information, historical data and future vision information on energy solutions and energy technology can be found in the Global Resources Analysis. The GRA can be downloaded at www.planck.org for free.

Water

Scarcity
Domestic
Industry
Agriculture
Pollution
Purification
Production
Trade
Export
Transport
Conservation
Floods
Sea
Crisis
Geopolitics
Integration

Scarcity: Almost 97% of all water on earth is salted, only 2.4% is unreachable frozen sweet water and only 0.6% of all water on earth is usable liquid sweet water. The pressure on this relatively small 0.6% is getting higher. This 0.6% used to be abundant since mankind lives on earth. But as the world population grows and as the world prosperity rises severely both a domestic and an agricultural water problems grows more rapidly than we expect/imaging/notice. Water was a typical local resource. This is changing rapidly. But virtual (export of agricultural products) as physical (water pipelines).

Domestic: Only 13% of the global clean sweet water use is used for domestic purposes. Water use rises equally with the rise of prosperity. As water bills rise, people will start to use less, start to harvest roof water and start to purify and recycle waste water. Harvesting roof water is very simple (just a concrete basin under the garden or under the house). An other huge development in this domestic water process is the Ecosave (domestic) and WaterIndus (industrial) integral water model which make 95% biological purification possible, by a very small volume low tech device. The technological principle this technology is based on is internal surface expansion, similar like the human lungs: 90 square meter in just 9 cubic decimeter. This device gives each house a green garden for free, that's also suitable for food production as food prices continue to rise further. Sauna will gain more popularity against showering. Governments starts to legislate roof water storing more and more (Belgium, Germany, etc). Governments starts to legislate waste water purification more and more (EU surface water quality norms). Surface water quality is crucial. Bacteriological pollution gives huge health risks. By the decline of ground water levels (build up in thousands of years, drowned in just 50 years time) surface water becomes more and more the main clean sweet water source. The difference between the 'first' and the 'third' world in this is fading: good micro/local integrated water/sanitary solutions is main issue for each household on the earth. Water is no longer a 'third' world issue anymore. Or Spain and many other developed countries must be considered 'third' world countries. Developed countries has not only a good water infrastructure, but also a good sewage infrastructure with purification facilities. The sewage infrastructures in the whole developed world are very old and leaking more and more polluted waste water into the groundwater. This is globally both a local pollution as

an municipal investment time bomb, that needs to be addressed rapidly. By this all domestic water bills will go only one way: up. And the solution for higher prices are higher prices: water demand will be kill/avoided severe by these higher prices. The impressive role of Prince Alexander of Holland in this area is remarkable: asking all African leaders to let them been photographed by rural/domestic/local sanitarian facilities as part of highlighting the importance of both clean water supply and good waste water treatment (two things that meets each other very direct in water/toilet facilities).

Industry: Only 7% of the global clean sweet water use is used in industrial processes. As water bills rise, water intensive industries will relocate to more water rich locations. Conservation technologies in redesigning water devices and processes will rise severely. Companies like Ford are already harvesting and using roof water. On site purification/recycling of waste water will gain enormous popularity as clean water prices will rise and waste water infrastructures will send much more higher bills. The Ecosave (domestic) integral water model has been scaled up by WaterIndus to an industrial integral water concept. Thereby is also usable for large industrial installations, saving on water costs severely and preventing relocation needs. It only treats biological pollution. The best treatment of chemical pollution is avoiding it.

Agriculture: More than 80% of the global sweet water is used for agriculture. Agriculture is just exporting soil demand, sun and water. Water is the most scare one of those three. Agriculture equals water. Period. As prosperity levels rise, meat consumption rises, and animal food demand rises 5 times more (as the cereal/meat ratio of bio industry is 5/1) than meat consumption rises. Meat production in bio industry will become too expensive due the high cereal/meat ratio of it and the scarcity of water to grow this cereals as the cereal/water ratio is 1/5000. Global meat production will leave the cereal based bio industry model and will a) go more local (more domestic animals) and b) go more global (more in ranch type of agricultural settings in Russia and South America). New technologies will both generate water out of air moisture and reduce water demands the same time. The Aral Sea catastrophe/disappearance is a huge example of wrong, just old fashion low tech irrigation of agricultural (in this case: cotton) production with a huge regional ecological/economical impact. The cotton farms are bankrupted and their former soil eroded. In countries will a high air moisture grade, a closed circuit of water pumped around in an above/below surface closed circuit. It will be cooled right below the earth surface, and the air moisture will condense against the above surface part of the closed circuit, giving both 'drop irrigation' and soil cooling (water, sun and a cool soil are important grow facets). In countries with deserts, CSP (concentrated solar power) will be used to generated both power and sweet water, for local use or for export. Agricultural on CSP sites (deserts) will become common.

Pollution: Water supply faces two dangers: Scarcity and pollutions. China is a huge example of a nation where water is certainly available, but the available water is heavy polluted and therefore only usable as transport medium for ships. Governments, farmers, households and industries must joint forces to combat both surfacewater and groundwater pollution. Local water pollution is not a Chinese problem. It's a huge global problem. Brussels as capital of economic well developed Europe has only a waste water treatment facility for just several years. Before the realization of this facility the sewage was just dumped in to the river, with all the pollution effects of it. Local clean (and thereby cheap) water is in everybody's benefit. Where local communities and industries pollute rivers, there is some regional solution needed, which is in benefit of all involved. The Nile Basin Initiative is a perfect well function example of this. The Aral Initiative and

the Rhine Initiative are other ones. The world can learn a lot of such conflicts preventing and water quality improving initiatives. Rivers and lakes are still the huge, major and cheap suppliers of clean sweet water of the world. The US and Canada have with the Great Lakes a huge reservoir, but pollution has made these reservoirs less attractive. Pollution (easy getting rid of toxic waste) will become less economic attractive than acquiring clean sweet water. Pollution is just a benefit for one, that burdens local, downstream and neighboring local economies. Pollution is one of the few examples where legislation really can make a difference.

Purification: Clean water purification will become less needed as waste water purification advances and does pollute clean water sources less and less. The need for clean water purification is just putting the horse behind the wagon: a sign that waste water treatment has failed. Using purification additives is not without health risks: The arsenic that in the US is done in very low quantity in clean water for protecting the water during the transport in the pipelines is very disputable: it's linked by several research projects to diabetes increase (diabetes patients has higher levels of arsenic in their urine). Waste water purification treatment is mostly a local/municipal activity. Water purification bills are currently mainly not real use linked. Not in waste water quantity, not in waste water quality. This will change. Clean water purchase and waste water purification will be linked more and more in billing. Type of waste water pollution will determine the height of the waste water purification invoice. Chemical pollution by the use of chlorides (making al kinds of chloral based molecules by the reaction drive of chlorides) will be forbidden more and more. O^3 will replace chlorides in households and production processes. Chemical pollution by medicines and other water dissolving molecules starts to become a real issue. Maybe O^3 can play a more clean role in this chemical purification and protection process.

Production: Production of clean water is becoming more and more technological. Surface water, groundwater, condensing, desalination seawater, harvesting roofwater, storing rainwater, under sea sweet water reservoirs, under ground huge sweet water reservoirs.

Trade: Open trade always give the lowest prices and the maximal product effect. Exchanges are the best open trade places. Each lake, river, municipal, region, nation and continent will have it own Water Exchange. Water will become a very much traded commodity. Water will not have a steady price, but the price of water will be variable depending on supply and demand. Some huge cities like Amsterdam doesn't have even enduser water meters in their water grid/infrastructure. This will change as the price of water rise. Top down. First the industry, than the offices, than the households. The whole chain from source to endusers will be divided in trade based transactions. Free water is over. Flat fee water is over. Water will be scare and thereby expensive.

Transport: As watersupply changes due climate changes (regardless the causes of that: climate change is as old as the world: the climate is a living/dynamic system), waterdemand rises both in civil areas (cities and villages) and in rural areas (increase water use in the food production by agriculture) and (due the investment level of all off this) people and companies are not nomadic anymore, the need for water transport will rise in the 21st century severely. In flat and cold countries this will be done by digging canals, in not flat and warm countries this will be done by water pipelines. The huge advantage of water pipelines is that they our relatively low pressured and thereby can be made out of cheap concrete. The largest human made construction is the underground

water infrastructure in whole Libya, feed by the huge underground sweet water reservoir right under the Libyan desert, which is formed a few thousand years ago when the Sahara was a green oasis, something that has been changed by the fact mankind used to much wood as energy source and erosion gets grip on this huge region. The need to invest in a complete new water infrastructure comes not at a right time: the municipals and national governments have more and more a problem with funding due their budget deficits, balance sheets and the Credit Crisis. The need for huge new energy and water investments will or lead to currency watering or to abandon the Central Banks based system of money supply. Governments will take the system of money supply in their own hands when they can not fund themselves by the current loan based money creation model 'guarded' by the Central Banks. Municipals will face quadric huge infrastructural investments: 1) water import infrastructures from other regions to their village/city 2) local water purification installations 3) local clean water infrastructures 4) local waste water infrastructures and 5) local waste water purification installations. The current local infrastructures for both clean water and waste water are in almost whole the western world outdated. In some countries even 25% of the clean water put into the system reach endusers, the rest leaks out this 'closed' infrastructure. This also gives the same times huge pollution risks by a this leaks are the water pressure sometimes drop for a moment. Also the waste water infrastructures are old and leaking severely polluted water into the groundwater. This can rune complete groundwater reservoirs for generations to come and only lazy local governments doesn't address this threat to the future of their economy.

Export: Agriculture is just exporting the for the production needed water in super concentrated shape. Is has be done since trade exists and it's only increased severe in the last century as world population starts severely has grown. There will be also other types of water exports. The time that people lives were the water was is history, the high level of domestic investments has changed mankind from water following nomads into water groundwater exploring/purchasing villagers/citizens. As groundwater levels starts to decline, importing of water will become important. The world is on the break of the building of a huge water pipeline investment wave, some of them will be done on the same route and constructed the same time as the natural gas and oil pipelines. Water exchanges will determine the actual water prices based on rainfall in source and destination areas. Transport costs of water will drive the water bills to much more higher levels. Agriculture (as biggest user of water) will be faced with huge water bills (something already is the case in several parts of the US). LNG carriers will bring on the return part of their round trip water to the Middle East. Water production in the tropics by condensation will explode, not only earth cold will be used every where, but also sea cold will be used in coastal area's. CSP (concentrated solar power) will produce loads of sweet water (by its build-in sea water desalination possibilities) in the deserts of the world and this also will be partial exported. Import demands are not always driven by just regular demand that outstrips local supply. Import demand also can explode temperately (or long term) when water basins of cities are polluted by acts of war/terror. Import demand also can explode for a long term period when leaking sewage systems pollutes groundwater reservoirs biologically. Import demand can also explode temperately when surface water is polluted biologically (see Iraq) of chemical (huge problem in China). Floods also can pollute surface water reservoirs severely and give a sudden water import demand.

Conservation: Water conservation is sector of the economy which is not developed for more that 5% of it's potential. Faucets and douches can use easily 50% less water by very simple to implement cheap plastic solutions. Irrigation can be improved and in

tropical countries even can reduce their water need with 100% by switching to the condensation of air moisture concept, powered by a closed earth cold cooled water system. Industrial processes are almost all yet designed on cheap water and can be made much more water efficient. Water conservation technology is only just born. Israel, Palestine and other Middle East nations are frontrunners in this development, by their achievements to make the desert green. Good conservation technologies brings peace in regions with water shortages. Regional water initiatives can multiple the water usability of the limited water resources for the whole region by all together implementing the same effective water conservation technologies. Joint conservation technologies (as in joint water usability improvement) is the receipt for preventing water driven tensions/wars.

Floods: Floods not only demolish years of economic progress. They also pollute the water reservoirs and the even sometimes the water distribution system. The most casualties due to floods occur not by the floods, but in the months after the floods due to polluted water use. Sea originated floods can due to the salination effects of it, make effective agriculture for years impossible. New types of crops can grow on salinated soil and play a role in a speed-up of the desalination process. The FAO needs both a sea agricultural unit and a salt agricultural unit. Stimulating seabased agriculture (and the marketing of it's products). Offering knowledge about crops that plays a role in high speed water removal. Offering knowledge about crops that can grow in salinated soils and can desalinated soils more quickly. These crops also can grow by sea water mixed based salinated irrigation. The world doesn't need aid campaigns after floods, the world needs knowledge based action after floods. US Aid is a perfect example of an organization capable of developing these kinds of practical/effective aid. It can support the 'US Brand' after years of value decline of the US brand due to not smart 'marketing' moves.

Sea: The seas/oceans can play a huge role in the Water Crisis. Food can be made in aquaculture instead of in agriculture only. Vegetables, algae's, fish and other sea fruit. Integration is everywhere (and so also here) the key word. Integration with energy storage, energy production, etc, etc. In nations with lowlands (Holland, Belgium, Bangladesh, etc) fighting the power of the ocean is maybe not a good concept and accepting the power of the ocean is maybe a better concept. In Holland their a hollow dike initiative: creating hollow circle (dikes) or plateau (terps) artificial structures that rise the expensive investments above the lowlands, protecting these investments by rising them instead of by rising the dikes. Giving huge commercial spaces in these hollow artificial structures that can be used for food production based on Grow|OS food production technology. Lowering both interest rates and insurance fees on these 'lifted' investments. Giving double use of soil space.

Crisis: The Water Crisis was concentrated in Africa and in the Middle East. This has changed. Russia, Southern Europe, China, India, the Caribbean and Midwest USA are moved from green lights to orange lights on water supply and South Russia and Spain has already faced the red light on water supply. The Water Crisis has four faces: 1) Pollution (just making loads of good fresh water unusable: like in the Great Lakes between Canada en the USA). 2) Less supply due to climate and -more and more- climate change (without going into the causes discussion of climate change). 3) More demand (more people, more prosperity, more irrigated agriculture). 4) Less conservation technologies (there is so much to gain with so easy to implant not very high tech or expensive basic technologies). The Water Crisis is about higher water costs and higher food costs, so about repressing prosperity levels (stagflation influence). The Water Crisis

(when not addressed) can result in severe regional conflicts (and regional conflicts in a globalized world often get global effects as seen in the last 100 years). The strong nations will fight for reinsuring their watersupply, the inhabitants of the poor nations will leave their habitats and start drifting and will not be welcome anywhere, causing huge human suffering and also will increase geopolitical tension (with an it's possible consequences). In the more extended Global Resources Analysis report the potential of water based conflicts is more deeper/wider described.

Geopolitics: Water is right now not yet a mayor facet in geopolitics. This will change. Food equals agriculture and agriculture equals food. China is the only nation that has an internal policy (Tibet) and a foreign policy (acquiring watered soil areas in Africa and South America) based on water. Soon there will be more examples of other nations. Countries with water and soil will become the 'Middle East' nations of food (as in: stable food and meat) production. On the other hand: Grow|OS, condensation based earth cold powered condensation irrigation and a he rise in home grown food can release much of the geopolitical pressures regarding water/food. Drifting of whole populations of nations due water (=food) scarcity certainly will give regional (and thereby geopolitical) tensions.

Integration: Water is a historical a pure/mainly local facet. Today the local importance still stands. Water is an important facet in each community. Water availability and water quality can be lead to the most micro level of communities: the households, the offices, the restaurants, the hotels, the pubs, the warehouses and the factories. In all this buildings roofwater can be stored (needs adjustments/facilities on micro level), in all this buildings waste water can be treated (needs adjustments/facilities on micro level). Water must not be seen as standalone facet. Standalone solutions are not what economies needs in the 21st century. Roofwater storages is recycling and thereby less water demand, improving the water balance sheet of a village/city. Water purification is water recycling and thereby less water demand, improving the water balance sheet of a village/city. Micro roofwater storage and wastewater treatment lowers the pressure on public sewage systems and public water purification installations and the financial pressure to extend/renew these investments. Integration of micro solutions with the municipal budgets. Governments certainly must address water pollution, as groundwater resources are depleting rapidly and surface water will become the main water source. Municipals will initiate water reservoirs for storing water in times of abundant rain. This can be combined with local nature/leisure plans. Municipals with a water deficit needs to dig canals or the invest in pipelines and purchase water elsewhere at costs for purchase and for transport (above the current costs of purification). When investing in canals or pipelines is combined with also adding fiber infrastructures to that route the municipal gets more return for less more investment. Water is the luxury of daily life, water is hygiene, water is local food (not only agriculture, also fish), water is local leisure (and tourist income), water is local economy (industries), water is local governmental budgets. Municipals has due the Credit Crisis and economic decline less credit facilities and less budgets due to less income and higher costs.

Perspectives

Sun Light
Sun Concentration
Sun Thermal
Air Wind
Air Thermal
Sea Wave
Sea Stream
Sea Tide
Sea Chemical
Sea Thermal
Sea Power
Geo Thermal
Geo Power
Hydro
Coal
Oil
Local
Gas
Tarsands
Shales
New
Patents
Future
Bridging
Biotic
Magnetic
Voltaic
Resonansic
Laseric
Pressuric
Catalytic
Chemic
Ionic
Water
Air
Fusion
Wrong
Invading
Stratospheric
Fission
Ideas

Sun Light: Sun light gives according to the World Meteorological Organization an average of 1367 Watt energy per square meter (average is based on day/night cycle, sun distance cycle and average geographical location). Sunlight can be transformed by Photo Voltaic (PV) technology. Solar energy harvesting technologies in laboratory settings has already reached 40,7% efficiency. Solar energy therefore is very capable of providing the energy needed in households and offices. The carbon oil/gas/coal companies are not interested in PV, because it's an one time investment type of sale (the energy after the sale comes for free) and their business models are based on selling/providing

daily/weekly refills. They also don't have the location space to install PV and are not very much active on the power generation and power sale markets (missing the power market will be their historical mistake in the future history books). The power companies have a complete different approach: they use a two path strategy (both the old central power plants model and the new decentral PV model) trying to seduce households and companies to install PV capacity on their own buildings by finance and exclusive grid connection contracts signed by the households/companies. This way they both have them as customer for a long period and build (off-balance third party signed and financed) a huge decentral power generation capacity that they can sell and doesn't need expensive carbon fuel. The next years their will be an explosion of these virtual decentral PV focused power companies (just contract/billing engines). PV was historical more expensive than carbon generated energy. This is changing as PV prices per square meter goes down, PV output per square meter grows and oil/coal/gas/oil/uranium prices go up, up and up. PV was only available in panels and could only be made from expensive to produce mono-crystalline silicon that was cut into wafers, but this both limitations in use (flat panels) and production (crystal based) will also change. Second generation is no longer difficult to produce. No longer expensive silicon crystal wafer based, but based on much more cheaper thin films, using much cheaper PV generating materials, that are brought onto the film by cheaper technologies. Second generation is by this all much more cheaper in production. Film based is yet less powerful (currently average 15% PV effective, but increasing each year) than silicon crystal wafer based (currently average 38% PV effective) technology, but the investment efficiency ratio (due the lower investment price) is already much more better and if the efficiency of film based production will increase the way wafer based production had done (from 10 to 40% PV efficiency in 10 years). PV technology will be improved in lowering production costs and increasing the efficiency. PV technology also will be approved in applicability: integration with roofs, walls, windows and objects (streetlights, windmills, etc.). The PV technology of the future is just a cheap produced thin (maybe even clear see trough) flexible film with a negative layer on the bottom and a positive layer on the top making it possible to just glue it to any object. Production will be done very cheap by vaporizing (or even by just printing) materials to the film. After the film phase the multi layer paint phase will arrive (and than is even offset printing PV panels possible). Window based PV technology will also boom. Or in it's concentrated vision by special glass full with invisible small mirrors that redirects some light to one side of the window where a small PV strip is located. Or by a clear film technology. Double and triple glass windows with PV technology will replace al current windows if energy prices rise further. Window based PV is very easy to install and very invisible. Two major benefits. Much more cheaper to produce, buy of invest/finance and much more easy to integrate: that's the future of PV. PV will be thin film (or maybe even paint) based and could be taking in design of each object that is out there in the sun: road lightening columns, windmill blades, roof tiles, wall bricks, bus stops, traffic lights, car bodies, noise reduction installations beside free ways, etc, etc, etc. Garden lightening is a perfect example of it: just free light in the garden by cheap PV without wires. Any industrial manufactured object will have build-in PV in de near future. Concentrated PV in double or triple glassed windows will boost the PV capacity enormously. A part of the light is by invisible internal glass structure re-routed to one glass edge, where a small PV line is installed. These small PV lines get concentrated solar light and perform by that very effective, delivering high capacity/efficiency. PV will lead to an enormous decentral electricity generation, changing the grid demand severely. This is the reason some power companies try to sell their carbon based power plants, grid assets and even customer base and want to reinvent themselves as facilitator/financier/installer of PV potential. In Holland the power company Eneco wants to sell all carbon fueled power plants and infrastructural grid transportation assets, and wants to concentrated on central and decentral carbon free energy. In Holland the power company Nuon has bought the largest installation service organization

in the market, for being on the first row (first in priority) as installation work will boom and also for getting a huge load of customer contracts. When power companies of this size help companies/people practical/financial by installing PV power generation potential with a contract to buy the over capacity, they take a piece of the cake of each installation which is installed on the property of others and is paid (by finance) by others. It's a lottery without any 'no cards' for them, and very attractive in times with very increasing carbon based fuel prices and uncertain carbon based supply. This is the reason that virtual (third party property based in both location and finance) PV power companies will boom and that each bank/financial also will have it's own. The 'old' traditional sunlight use (as in light: avoiding artificial power based light) will also boom due to window based PV technology in combination with 3 or glass layer windows: house of the future will have a lot more windows to harvest the light, warmth and PV of the sun maximal. In the near future will PV surfaces also harvest sunwind and other types of cosmic radiation (popular called: dark light). Mainly driven by the particles that the sun sends to the earth at daytime and less but still significant by cosmic radiation at night time. Due the fact that sunwind devices needs harvesting surface, sunwind technology will be researched as separated units, but after that fully integrated as separate layer under the PV technology (as these particles go straight to the first PV layer). Also will PV technology (as it's temperature increase due to sunlight will be cooled from it's current 40-50 degrees Celsius daytime operational temperature by a closed watersystem to the lower more best performance temperature of 15-30 degrees Celsius: using both the PV technology side effect of warmth creation and PV surfaces (when light hits an object it is partial converted to warmth) also in a sunthermal way to warm water for domestic use (for cleaning, washing, showering and maybe partial -by prewarming- heating), the same way traditional sunthermal boilers are used these days.

Sun Concentration: More called CSP. Concentrated Solar Power. A set of technologies that are completely developed and ready to use. As said by harvesting energy out of sunlight, sun concentration could also play a role in PV technology by use of special window glass that mirrors some light to the edges of the glass where PV technology is installed, that due this concentration technology can produce severe regardless it small surface measurements. But sun concentration also has a huge future on its own. Using curved mirrors that point/concentrate the sun light to one point/line. On this point/line is the sunlight absorbed and thereby transite in temperature. The temperature of that point/line can be as 'low' as 100 degrees Celsius and high as even 800 degrees Celsius depending on the factor of concentration and the throughput of a warmth absorbing and transporting coolant. Salted water has a higher boiling point and thereby can absorb more energy before pressure problems occur, it also give a protection against night cold. So this harvested warmth can be absorbed by water and used to power a huge central located turbine. The attractive by-product can be sweet water, if ocean water is used to be heated. There are also waterless technologies that just use the hot air of the concentration point, based on the concept of the completely developed almost 100 years old concept of the Sterling motor. The huge benefit of al these sun concentration technologies is that there is no new yet to develop technologies needed: all the needed technologies are already for decades in place and fully well developed. The water based technology uses huge fields of curved mirror rows pointed to a water pipe in the center of the mirror. The waterless only hot air based solutions is more done in dish type of settings, with the sterling motor in the center of it. The waterless disk solution is a standalone solution that can be used anywhere space and sun is available. The water based solution is only applicable in huge fields in desert like settings. The Middle East and North Africa can become the power exporters of the world. Only 3% of the Sahara soil could deliver this way the world the power it needed (without transport/mobility). There are 4 problems: Geopolitical, transport, initiative and finance. 1) Geopolitical: Nations

doesn't like the idea of a new dependency on foreign power just as they are starting to worry about their dependency on foreign oil/gas/uranium. 2) Transport: The in deserts generated power is not needed in the desert but in the global cities. The power must be transported to these cities. New cable technologies (HVDC, HTS and LTS) facilitates power transport with only 3% lost per 1000 km. Technological power transport is made economic possible. HVDC used cooper and new cooper infrastructures are very expensive due the very high (and still climbing) cooper price. Cooper is scare and therefore expensive and the global demand for it is huge as 3 billion people enter the consumption class globally and they all need power lines/devices locally installed causing a huge demand for cooper for these local wires and devices. HTS/LTS (based on cooled super conduction technology) use not scare materials and thereby will have a greater future. Cables are terror targets, so cables must be made so redundant in geographical design that terror has no impact. This requires more cables and is expensive, but gives in return also technological continuity. Hydrogen is also a possible energy transport medium, although currently it has not good production/transport/use efficiency ratio's. These needs to be improved first. The huge advantage of hydrogen is that is spreads geopolitical risks. The huge disadvantage of hydrogen is that is very explosive, giving lots of possible dangers. There is also no hydrogen infrastructure and no hydrogen installbase, so wired power transport is preferable. An other way to export power is product enclosed. Virtual power export. Fertilizers and aluminium are perfect examples of this development. The manufacturing/processing takes so much energy that both are only done in energy rich/cheap locations. 3) Initiative. CSP is a whole new industry based on a composition of completely trough developed mature technologies. New industries are not born overnight. The CSP business model is more complex than it's technology. It demands space in foreign countries (demanding good legal and political frameworks) and transport (huge off-site investments). CSP needs bilateral/multilateral mutual interest focused relations between countries, between customer, transport and producing nations. There is a very good initiative alive for some years: The Trans-Mediterranean Renewable Energy Cooperation (TREC), supported by many states and supported by both DLR (German Aerospace) and the King of Jordan. But this initiative is too wide setup and has thereby to real initiating power by the law of diffusion, but is more a promoting than realizing organization. Real initiatives needs entrepreneurs/companies/corporations. 4) Finance: Financing CSP is only possible under state and customer warranties. Of all the concerned nations (producing, transport and consumption) and of all the customers. With this guarantees, financing CSP is easy. It takes the financial power of the users into the production and cover political operational risks by state warranties. All capital and desert rich Middle East nations will start CSP very soon, just to cope with their own exploding power demands first (saving carbon energy for export purposes). But the second phase will be that they will start to export this. Wire infrastructures also has fiber infrastructures attached to it: this will connect Africa and the Middle East with the old economic concentrations in the world. Mexico and some South American nations will also start CSP. Chavez is very interested in funding the infrastructures (as they also can used to export power generated by very heavy crude and Venezuelan tarsands to all Americas. The investment price of CSP can be lowered severely by building first them with local produced components. Sand enough in the desert, providing not only silicon for production of the needed mirrors, but also the structures/pipes/roads could be made of glass/silicon technology locally. This reduce the investment level severely. Aluminium structures are to expensive for CSP. The right CSP model is build in the desert, out of the desert, with minimal imported resources. The for CSP required Finance Model is one of the Models that Planck Foundation has created. The is also a low tech solution: The cooking dish: a parabolic disk that cook food in the center of the dish very hot. If the ancient Sahara habitants had that device several thousand years ago, the Sahara still will be greener today, as no wood was harvested to cook.

Sun Thermal: The domestic need for warm water (for cleaning, washing, showering and maybe partial -as part of the prewarming process- heating) can be done by roof boilers, concentrated roof boilers, desert boilers, concentrated desert boilers, concentrated desert sterling engines. Mirrors, the color black (as most light into warmth converting color) and water (one of earth's most warmth per degree absorbing substances) play all a main role in harvesting the warmth that sunlight gives when it hits an object. Solar thermal can be done high tech, medium tech and low tech. High tech is by integration of sunthermal in PV panels (as they collect heath and generate heath also, heath that reduce their effect). Medium high tech is thermal dedicated solutions with sensors and special materials. Low tech is by just what tubes, black paint in a glass box. Sunthermal has thereby also a poor man's solution. A simple black painted plastic or concrete watertank on a standard gives already free and cheap carbon warmed very nice showering water. There are even dish mirror based sunthermal cooking units applicable for trailing camping or for domestic us very poor countries, based on sun concentration, that requires no cooking external cooking energy source.

Air Wind: The wind is also a huge energy pool that can be harvested. Wind is just an other derivative of solar energy: the sun hits the earth (continents or oceans) and air gets warmer and rises, cooling down and descent to lower levels again. Where air rises there is low air pressure, where air descents there is over air pressure, wind is just air that moves from over air pressure or to under air pressure or flows from over to under air pressure the same time. Roofmills, standalone mills, windparks and highrise attached windfunnel structures with internal fans. These high rise air wind funnels have also huge positive air flow resistance effect on high rise structures. If high rise structures for living and office has a future in a post carbon area is certainly a valid question. High rise structures will be energy deficit. They have a too low solar energy production capacity for living, therefore they are energy deficit, therefore living there will be expensive due the needed energy purchases caused to this energy deficit of the high rise, therefore only affordable for the wealthy, or the current operators must first go bankrupt and then offer double apartments for the price of a single so that the energy production and food production per unit will be higher. High rise structures for office use will become useless due the fact that commuting to the office will become to expensive. All office space operators will face bankruptcy by a high energy price as organizations will grow from physic structures to digital organisms. Large parts of the current high rise structures will be used for growing food by use of the Grow|OS technology. High rises will have vertical windmills all around the building surface. These will be attached to the building core structure as current high rise surfaces mostly are only carpeting the outside of the building. On the top of each high rise there will one huge horizontal operating windmill of several huge vertical operating windmills. Concentrated industry areas (which are per definition energy deficit, regardless the achieved conservation technologies) will install huge windparks to power their plans/factories. Each village and city will have multiple windparks (if the wind is good). Their will be huge remote windparks at sea, in the deserts and everywhere were the wind is good. An example of such a plan can be found at www.pickensplan.com: a huge onshore wind plan in the heart of the US. Only T. Boone Pickens can say "we have good wind" the way he does. This man needs to be honored for his achievement on his age. An open minded oil specialist that has become a general energy specialist, 81 years in age, who's fighting for the energy security of his country, with a very clear plan to replace the natural gas component of power generation by wind energy with a concrete plan. 20% of the power in the US is generated by natural gas. One of the presidential candidates has already talked with him and knows since than more basic data on energy. Energy is something both presidential candidates are not very strong in, while it hold the economic future of the US. Governments needs to

address the transport infrastructure of remote windpark locations. They can do that by issuing legislation and guarantees as more extended described in the transport paragraph below.

Air Thermal: Simple: just open the windows (passive) on bring ventilators (active) and automatically opened windows in the last (coldest) phase of the night let building flow full of cold air. In many warm countries the poor mans airco is a wet towel hanging in the window (as water that vaporizes 'eats' a lot of energy due the energy absorption characteristics of water. Semi simple: Aircos based on new technologies could be a lot more effective if they will use water vaporizing or just plain air cooling on top of the roofs. Airco's could use than only 10-20% of their current power consumption. Datacenters use huge loads of power for the equipment they shelter. They use on top of that an additional extra 70% of these large volumes of power for cooling down the warmth effect of the used energy. For datacenters there is already new airco technology that reduce the power bill from 170% (100% + 70%) to 115% (100% + 15%). Advanced/Futuristically: By a combination of catalysts, magnetism, high voltage waves achieving that air gases become more dense (and let them eat warmth out of the air by this). The if for example catalysts could expand atoms, the first low of thermodynamics will give free energy out of the air. So a complex (low/high frequent waves, high/low frequent resonance, high voltages, magnetism and catalysts based) process that harvest energy out of normal air temperatures.

Sea Wave: Both in coastal areas as anywhere on the seas/oceans the everlasting movements of the sea can be used as energy sources. There are two technologies in place. The first technological model is snake shaped. Energy generation is both inter segment friction based and internal segment water flow based. Due the forces of nature the snake shape is heavenly exposed to the extreme forces of nature and thereby high maintenance sensitive/demanding. But al coastal area's will have such wave energy harvesting/transformation devices. The benefit of these devices above sea based windmill parks is that the don't need massive foundations: just 4 x 2 concrete blocks will do the job very good. The second technological is a pair of bell curve shaped, with two flexible connections between those two shapes. Energy generation is based on the pressure difference between the two bells by the continuous water pressure changes above the bells due to continuous change in height if the water levels above the bells. Based on physical principles of both Archimedes and Pascal on liquids/fluids and pressure that two connected objects always equals/levels pressure levels with each other. The two bells are connected with two one way pressure communicating devices and in those two channels both have an air stream or water stream powered build-in generator. Corrosion due to salt will be avoided by the use of by glass/silicon fiber enforced glass/silicon structure/body technologies. No corrosion in operational phase and no expensive iron in the investment phase. Giving a double benefit above iron based structures. Coastal based structures have distance advantage for grid/infrastructure connection and maintenance distance.

Sea Stream: Ocean currents are huge powers that can be harvested. The ocean currents can be used to power underwater turbines. Only applicable when put in series in not too deep water not to far offshore (due installation, pressure, maintenance and power transport). Making them of silicon/glass technology avoids corrosion and lowers the investments (due to the high iron prices), making the business model two sided (operational and initial) more attractive.

Sea Tide: Sea tides are huge powers that can be harvested, by just putting a turbine under water. They occur near-shore and are thereby easy to harvest. They can be harvested in semi-natural environments (harbor like locations), but they also can be harvested in special designed off-shore structures. These structures could have multiple functions that harvest other ocean based conditions (like aqua based production, wind power, solar power on the windmill surfaces) etc. Combinations in use, always make projects more easy to realize. The effects of these offshore artificial structures on the coastal streams must be researched, as otherwise the sea will eat out the mainland.

Sea Chemical: In coastal areas there the density between salt and sweat water can be used as energy source. Salt water wants to 'travel' to sweet water. It requires two types of membranes, namely one that is selectively permeable for positive ions and one that is selectively permeable for negative ions. It's called reversed electro dialysis or 'blue energy'. The technology is deferred from the haemodialysis technology that is used for treatment of kidney patients, but only setup reversed (not demanding power, but delivering it). Problems are finding the right performing membranes, for the right price (material and production) and the water pollution by the membranes. After solving these three problems each coastal area with a sweet water surplus will have it's own 'blue energy' plant. Water temperature, seawater salt percentage are beside the technology the main factors. Blue energy doesn't salinate sweet water environments, the processed water just go to the sea. Blue energy can also be made with the large near coastal sweet water reservoirs, but this water is too good to salinate it for energy use: it better can be explored for city use.

Sea Thermal: The temperature difference between seawater and building structures can be used as source for warming or heating in coastal areas. More and more seaside cities uses the cold of the sea in the summer and the warmth of the sea in the winter. Exploring the huge energy absorption characteristic of water. It takes an investment in infrastructure, but after that only pumping and maintenance would be the costs. When a closed systems is used with sweet instead of salt water, there are no salination dangers. The benefit of 'de-airconizing' a sea side city with such an investment is obvious. Aircos use a lot of energy in the summer in these cities. The downside is that there must be an invest in the realization of a new infrastructure and that it requires internal adjustments in buildings. The upside is that the power bill we be lowered severely. As energy prices rises and blackouts will become common, seaside cities will invest in such an infrastructure. If they combine it with other infrastructural works the price will be severe lower. There is a future need for the following new infrastructures in cities: new water infrastructure, new waste water infrastructure, glass fiber infrastructure, cold water infrastructure, hot water infrastructure and a semi hot water infrastructure. Sometimes this also can be combined with underground parking and transportation infrastructures, but the demand for these both will be severe lower as energy costs rise. An other problem is the fact that more and more municipals default on their loans and thereby has very limited funding capacities. Local banks could fix this problem, as in economies of the nearby future the local economic performance will be of main weight.

Sea Power: As oceans covers approximately 70% of the earth surface, they are huge solar power collectors. This power can be harvested. The temperature difference between deep seawater and surface seawater can be used for production of power (or by absence of that: for production of hydrogen). Due the fact that the temperature difference is only 20, maximal 25 degrees Celsius, the used technology is warmth pump based. OTEC is

the common name this technology is called. Ocean Thermal Energy Conversion. The concept is one huge hollow (so floating) concrete pipe that gets more hollow where it comes to the surface (more less air space under preventing collapse due pressure and has a stabilizing anti-roll-over effect). This huge structure will be build on a to cables attached structure between floating islands on/nearby the location. Iron in the construction will be replaced by silicon/glass fibers, to reduce the construction price and prevent corrosion of iron due the salt seawater. Maybe new concrete technologies will be developed so that more cheap local/nearby salinated sea soil based sand could be used for construction. OTEC has no influence on ocean currents (to massive and to powerful). OTEC could has biological impacts if the deep/surface water will be mixed. Closed circuits are therefore preferable. Almost any 'wet' construction company will develop their own OTEC concept. OTEC concentrations will be used to reduce power line investments. Hydrogen technology will reduce the powerline investment need, but mostly will cost efficiency and increase operational risks. Major cities and major industries (both energy deficit by nature) will make OTEC joint ventures with 'wet' construction companies. The purchase power of major cities and major industries in a post/expensive carbon era is disputable as the global economic design can swift to local prosperity due the too high costs of transport/mobility: the two facets major cities and major industries both are depending on as cheap available. OTECs could be land sided if nearby is a huge depth in the ocean. There are also surface based OTEC technologies that only explores the warmth in the ocean surface water the generate both electricity and fresh/desalinated water. Pumped up deep water can also be used in aquaculture, cold water species like salmon and lobster grows very good in it, plus it contains huge reservoirs of sea animal food. But the bacteriological impact must be researched (unlikely, but possible danger).

Geo Thermal: The temperature difference between the earth soil and buildings and environments can be used for 1) warming, 2) cooling, 3) condense based irrigation and 4) power generation (this last technology is currently only used on/nearby the hotspots of the world). What powers geothermal? Beneath the surface it is cooler that above the surface and some more below the surface it is much more warmer than it's above the surface. Both the cold of the earth as the warmth of the earth can be explored. In drilling leaks in groundwater reservoirs could be a huge danger of implementation without local geo research. Therefore geothermal needs some legislation that forbids the use of geothermal when it would drain groundwater reserves. Geothermal can be used anywhere in the world. Geo Power is at this moment only economical possible in/nearby the hot spots of the world, but this could be changed as warmth pump/power technologies improve in performance/efficiency and energy prices rise.

Geo Power: Geo Power is a technology where hot spots in the earth are explored to generate power. This can be done by several methods/technologies. Closed circuit (so: warmth pump or warm transfer based) systems are likely to be the best option from environmental perspective seen. That warmth pump technology have good upside efficiency perspectives is very clear: to much companies are getting into this technology, something that certainly will lead to huge efficiency improvements. But new geopower technologies use of a closed circuit with a liquid with a low boiling point trough the earth, making even exploring semi hot spots possible with other than warmth pump based technologies. Due the warmth of the earth layers, the liquid gets hot/warm. When its above the ground depressurized it starts to boil. This can be used to power physical it's own pump. Or this massive volume increase can be used to drive turbines that generates power. There are several other ways to explore the geo hotspots into electrical power. Geopower can only be used in/nearby the hot zones of the world. For example is the whole east side of the US is a perfect geopower regio. One advantage of geothermal

power plants, beyond the benefit of producing electricity from a low-carbon, indigenous energy source with no fuel costs, is that they provide baseload power 24 hours a day. Storage or backup-power is less required due this severe baseload. Geo survey research will become more and more important, from both energy as mineral perspective.

Hydro Power: The potential of hydro energy can be divided in big, medium and small projects. Hydro energy has per definition (regardless the size) a huge environmental impact. Big projects has big sized big local environmental impact, medium projects has medium sized bug impact and small projects have a small sized big local environmental impact. Hydro energy equals big local environmental impact. Hydro energy attracts industries that consumes a huge base load of energy. Aluminum industries are often located near a big hydro project, as the are capable to consume all the energy the hydro project generates. This can be seen in Surinam and in Iceland and many other locations in the world that also has bauxite or has good harbors besides hydro energy. Aluminum will get severe more expensive both by the PeakBauxite (increasing demand and finite resources and limited exploring projects) as by PeakEnergy (which will cause high price rises for all types of energy). In the future an aluminum plant maybe will earn more money by selling their power capacity than there is in processing bauxite to aluminum. The building prices of hydro power projects can be lowered severely by using silicon fiber instead of iron bars as concrete enforcing. Hydro energy is carbon free, but has huge local impact and therefore is always confronted with huge local resistance. The future energy deficiency (and thereby future energy prices) will determine the further roll out of hydro energy. Hydro energy mostly can only be generated on remote locations and thereby also needs a severe power infrastructure investment. Hydropower will be used strategically (diversifying energy sources) and also if importing energy becomes a national financial burden (than huge local environmental impact will be of less important), because hydropower needs no daily fuel and performs for many years. Hydropower in earthquake regions is from both investment, human and nature perspective not a wide thing to do. Hydropower facilities are mostly war proof due the massive concrete characteristics of it. The building of hydropower will be maximized as energy prices rises and nations suffers severe from energy imports. The building of hydropower also contribute in lowering CO^2 levels in the air (fighting climate change), as it is an carbon fuel free energy generation operation.

Coal: The global coal reserves are severely over estimated, not in one country: in all countries of the world. They are calculated just on actual presence, regardless the technological chance/possibility and/or economic cost of exploration. Oversizing them with 50 till 75%. The global coal demand on the other will explode the next years. There is low-grade thermal coal (used for power production) and high-grade cooking coal (used for iron/steel production). Concerning the low-grade thermal coal: There were not so many coal fired power plants in construction as there are today. They were never bigger than the ones that are in construction right now: demanding all a complete coal train as fuel per day when they are in production. Even right now very bad quality (in terms of energy and chemical ballast) thermal coal finds it way to China and India these days. Coal and the climate discussion are contrary, but coal will win the dispute. Talking about CO^2 reduction is easy, using less hydrocarbons is more difficult. Coal is a hydrocarbon fuel with a lower energy to power ratio and thereby not the favorite flavor of the Climate Change focused community of the world. But prosperity is something each and everyone wants, and prosperity is about affordable energy, so coal will win this dispute. The world should implement more coal technology. Not burning it, but gasification it. Cleaner (in terms of acid rain facets), more energy efficient (and thereby less CO^2 emission) and by its higher energy efficiency cheaper. All the current in construction coal to power plants

face the possibility of never or only sometimes been used, not due to environmentalists, but due 1) physical shortage of thermal coal (just no 'fuel' available), 2) economic outdated due the more efficient gasification based process (as coal prices rise, efficiency becomes more important facet), 3) relocating of power production to coal mining locations (transporting electrons, instead of coal). Concerning the high-grade cooking coal. As China in June 2008 offers the iron ore miners a 100% price rise for iron ore in exchange for delivering guarantees, the future prices of cooking coal will be at least very soon double of the current price. Taking in calculation that 1) energy is more scarce than iron-ore and 2) cooking coal is a high-grade/scare/premium coal type, the chances that high-grade cooking coal will be tripled in price the next year would not be strange. The fact that coal reserve figures will be lowered next years to realistic levels, coal reserves more and more will been nationalized and energy demand will grow severe, the price of coal (and thereby the price of power and iron/steel) will be doubled each year the next years till it reaches it economic maximal point and than also for coal the granting distribution system will be put on top op de supply/demand exploration model, that already is on top of the exploration costs model. Coal will be as much geopolitics as oil/gas/uranium is these days. In-situ technologies (harvesting the coal energy underground) will rise. Coal to gasoline technologies will rise in oil deficit countries. Everybody with a sense for cost of investments and energy process efficiency knows without any calculation that the gasoline produced this way will not be very cheap, but the cheap oil/gasoline believers still got very much media attention. Common sense we've lost due to cheap oil addiction. Investors in coal-to-power plants are (like investors in each carbon based power generation plant) gamblers. Building a very capital intensive facility with no outlook at all for nor the availability of fuel and the price of the fuel, in a market perspective where both (availability and price) are problematic. Power generation is now a general activity. This will change. Coal-to-power will be done by total other type players than gas-to-power. The size is different, the geographical density is different, the fuel logistics is different and the fuel purchase is different. This availability and price uncertainty is a very uncomfortable situation by such mega investments. This will lead to this uncertainty solving strategic choices/alliances like that coal-to-power plants will or taken over by coal miners or will taken over miners. But more likely is that coal-to-power will be done on the coal locations, why carry around with such material as electrons are more easy and more cheap to transport by HVDC/HTS/LTS or maybe as hydrogen. Coal exploration can be done or in mining (surface or underground) or by in-situ (underground technology). The uncertainness of coal availability and coal prices will make for example solar based energy investments much more attractive: The availability of sunlight is in daytime 100%, each day, the sun doesn't strike or have logistical/political problems. The fuel price of sunlight is $/E 0, the sun doesn't invoice daily fuel costs. These two major advantages of renewable energy harvesting will hit both coal-to-power operations and investments. Coal-to-power investments will in the future only be done by economic gamblers with lots of equity (as banks will turn away from coal-to-power due the supply uncertainness and price uncertainness). An other issue is the low efficiency of old coal technology: this is the main reason why coal has such a bad name (old pollution technology that causes acid rain and old low efficient technology that has thereby more CO^2 emission than more effective sources/technologies. The whole CO^2 issue will be pushed to the background as energy scarcity grows. Market prices will change behavior more than any preacher ever could. Clean coal technology (gasification) will gain enormous popularity. International power infrastructures will replace coal shipments. Miners will stop shipping coal and start producing power. Miners will co invest in HVDC/HTS/LTS powerlines (in combination with CSP -Concentrated Solar Power- operators and producers). Miners will invest in hydrogen research as transport or energy multiplying technology. Miners will buy enduser contracts for creating a closed circuit. Miners will have joint venture with powerlines and with customer/enduser brands/contracts operators. Miners are the Gazproms of the future. Large cities and large

factories will always be energy deficit. The big question is if there is market for large cities and large factories in times of expensive energy. Delivery contacts will become more and more important. Contact prices will become more and more flexible determined by global exchange prices based on supply/demand. Coal will profit from the price rises of other energy sources and the other energy sources will benefit from the price rise of coal. Iron will become very expensive due to iron ore and coal prices due to less supply and high demand. Iron will be replaced a lot by glass/silicon material technology. Aluminum also as coal prices will rise and make the in production lots an energy demanding) aluminum very expensive. Miners will become powerful energy players. Miners will be nationalized, making coal also part of geopolitics. Coal has also become a commodity that is confronted with state driven revenue sharing. Miners will be confronted with a kinds of new taxes/duties where an export duty on coal often is the first one (in China 40%) later-on there will be additional other special designed duties put in place. The purpose of these duties are: 1) Stopping export in countries with state ruled energy prices for the internal/domestic market. For example China needs the coal, but as the price of coal is state regulated low (as the state subsidize energy and therefore don't like much space between guaranteed enduser price and market supplier price) and the world market price is high Chinese miners prefer to sell abroad. 2) Sharing revenues by customized taxation between miners and the governments, additional to the in the mining contract mentioned state fee per 1000 kg, as the market prices are much higher than when the contract was signed between miners and government. Steel companies and miners also will make joint ventures, and/or steel companies will go into coal/iron-ore mining, and/or mining companies will go into coal and iron-ore, and/or mining companies will buy steel companies, and/or steel companies will buy mining companies. All just to ensure long term supply and/or enforce each other earnings. Commodities are the scarcities of the 21st century. Coal can be processed to liquid fuel. The Nazi airforce was completely fueled by expensive coal originated kerosene (which was one of the reasons they lost the war).

Oil: First mankind had horsepower and sometimes slavery. Than mankind start to harvest wind energy in mills. Than they found began to explore the energy within coal and fueled stream engines with it to power machinery directly, the process of 'implanting extra energy' in our economic system started. A while later Tesla can along and invented and further developed AC and the AC power grid and online power became the main indirect (remote) fuel for devices. Two decades later the combustion engine finds it way into earth based transport and mobility and after WW II the jet engine for air based transport find its way. Both are on location powered by oil. an energy source with a very high energy level can cheap and abundant available. Oil that first only was used for lightning (Kunstler: the oil lamp was the IPod of the Civil War), but by the invention and cheap production of both the combustion engine and gasoline/diesel got its boost into the global economy/society and the invention of the jet engine initiated real globalization. The development we called PeakOil is more about Peak than about Oil. PeakOil will be replaced by the Heinberg mentioned/designed word PeakX or PeakEverything. We're living on a limited planet and all finite resources (like oil) are as real finite as the word finite says. Oil became is the most popular kid in the carbon energy class due its easy logistical characteristics (non pressured, liquid, no physical left rest material). In the beginning of the oil age, the exploration energy balance was 1 to 100. Only 1 barrel oil was used to produce 100 barrels of oil. Now these days the energy efficiency of oil exploration is severe lowered to 1 to 5: 1 barrel oil used in exploration only gives yet 5 barrels of oil production. And this will change even more as 'easy oil is over' (quote of Jeroen VanderVeer, CEO Shell Corporation), so the current 1 to 5 ratio is not sustainable for the next 10 years. Energy ratio's will lowered once again severely. Oil exploration will become earlier economic to expensive than it become from energy perspective to

expensive. It is no longer attractive by 1 to 3 ratio's (1 barrel oil used to explore 3 barrels), as investments and operational costs also take their piece of the price. Oil will still be available. But against much more higher prices and also more irregular. The current installbase of oil fueled/powered devices (cars, trains, airplanes, tractors, machinery) will still be used, but will become more and more less economic in use due to the continuing rising fuel costs. The Hirsch report of the US Department of Energy on the installbase issue, sees this a huge economic problem (the economic waste/decline of a complete installbase generation). In reality all transport/mobility devices will just become to expensive to use. It's not an oil price/availability problem, it's an energy price/availability problem. Transport/mobility will become expensive and thereby less used. The history of oil is widen distances (by its cheap and abundant availability), the future of oil is shorten distances (by its expensive and irregular availability). Cheap oil has given us car based commuting, industrial concentration and production/travel globalization. Expensive oil will give us vibrant local prosperity. The oil of the future will come from stated controlled companies of nations that not want to sell it all now in a hurry and nor sell it now for a bargain price. The price of oil double each year. The price of the dollar drops 20% a year. Producing this year, what also could produced next year is 'own initiated robbery' and no state controlled company will do so. Oil nations will produce a little above current year budget and no longer for stockpiling dollars. Oil nations will reduce production more and more, giving them even more income in doing so. As oil will reach its maximum market price, the granting based distribution model will be placed on top of the price based distribution model. Nobody knows where that price will be, but it's proven that $ 150 per barrel oil was high enough to kill demand (car miles, airtravel and airtransport) severely, both active as in terms of repressing global economy. High oil prices burden our old economic model that was based/build on cheap oil/energy. We need a new economic model that produce high prosperity by low energy demand. Energy that has brought us where we are, now can break was is build, if we stay using the amount we used when is was cheap and abundant available. When the granting based distribution model will come of top of the price model, nations with no real friends will become serious in trouble as their supply will shrink to very low levels. Oil prices will go up, due to the market mechanism (more global demand and less global supply), due to exploration facets (higher exploration costs, lower exploration efficiency ratio's), due to distance facets (more crude oil miles, not enough ship capacity), due to extended refinery facets (new refineries needed for heavy crude types and sulfur polluted crude), due geopolitical facets (strategic less production and the fact that a tight market is more vulnerable for regional/global tensions. Very heavy crude will be gasified, instead of being refined. New refineries will be build. Export of crude will be stopped, crude will be refined in the crude origin nations. The oil of the future is very difficult (expensive) to explore and to refine. Shipment capacity will become a real problem as oil supply in Canada, Mexico, USA and Europe declines a high speed. Conclusion: the globalized cheap oil based economic model will be replace by the local prosperity expensive oil based model, as transport and mobility will become to expensive. Oil fields never can be explored completely, the production of each oil field peaks at a certain moment and then declines gradually. Peak oil field production can be extended by oil field injection methods (nitrogen or water), but the decline rated of injected fields is after the injections more progressive. The Mexican Cantarell field output, which peak is extended by nitrogen injection, declines now at a 15% rate a year. If Ghawar (Saudi Arabia) should start to decline, global oil production will decline with it from it's current extended peak. Ghawar is 'reconditioned' during exploration by massive water injections. Water injections that must be done wisely/slowly otherwise the output will become to much water polluted and the field than needs some rest time to let gravity split oil and water during time. The viscosity of oil is the reason this process takes a lot of time. It's one force (gravity driven by the higher density of water) against the other (higher viscosity of oil). Oil nationalism has pushed western oil internationals out of the center of the market. The future of

western oil internationals is serving oil nationalism and getting squeezed by it, when the bucks start rolling. The business model of western oil internationals is outdated. They were the rulers, the hunters, now they're in the wind silence of the oil nationalistic storm. They will become the losers and the hunted. Their history works now against them. They have in the past no real friendships that achieved mutual interests, this is now working severely against them. Only oil internationals with a complete different attitude (as in: complete change of management and policy, by open communication on their history) will get new mutual deals in an oil nationalism dominated global market. Otherwise every lost will be accounted to them and every profit will be taken from them. Oil nationals versus oil internationals will be won by oil nationals. The oil internationals will be used this they are brook. Current strategy of oil internationals is paying dividend and purchasing own stock (to maintain high stock prices). Shell has recalculated/reshuffled their owned reserves figures, others will certainly follow. If BP will loose their rights in the TNK joint venture in Russia, almost 1/3 of their proven reserves will be vaporized overnight. Oil internationals will be split due to shareholders pressure, giving the shareholders double stock value and double dividends, as oil internationals has become to big and to divers to manage centrally. The split-up of Standard Oil (which make Rockefeller from borrower to banker by the by the split-up generated value) has proven both the value and the performance improvements of a split-up. Oil internationals that follow the US in the occupation of Iraq will be thrown out Iraq when the US leave Iraq. The nationalization of oil is a non reversible process. Oil in the 21st century is nationalized. Period. Making old times alive by invasion (or profiting of it) is just a way to ask to kicked out / shut off for ever. Alan Greenspan in his book "The Age of Turbulence: Adventures in a New World.": "I am saddened that it is politically inconvenient to acknowledge what everyone knows: the Iraq war is largely about oil." or an other quote of this former man of huge economic influence "The Republicans in Congress lost their way, they swapped principle for power. They ended up with neither." Some say these remarkable quotes of him are primarily done to swift attention away from the failures grown/matured during his economic credit/currency leadership. One other remarkable statement. This is from Fatih Birol which is Chief Economist and Head of the Economic Analysis Division of the Paris based IEA/IAE (International Energy Agency) of the OECD: "I think we should leave oil before it leaves us. That should be our motto."

Local: Localizing our economic system is the best/biggest/easiest energy source we can tap on. The truth is that we don't have any alternative for both kerosene (air mobility and air transport), diesel (road transport and rail transport) and gasoline (daily commuting and leisure travel). The energy that cheap oil has provide these 3 products can not be equaled by anything we have available right now. Cheap oil is over and by that the role of cheap oil is over. Oil was an economic blessing that gave us growth, it has become an economic curse that will bring us stagflation. The only post-cheap-oil economic alternative we have is vibrant local prosperity: cutting out as many transport and mobility as possible. Otherwise only the energy surplus nations will have a vibrant economic perspective and all other nations just works for tax and energy, without any prosperity at all any more. Let's call our current economic system Global and our future economic system Local. Local = Vibrant Prosperity. Global = Foreign Taxation By Energy. We can't pretend that cheap oil is still there. We must have a new look, a new perspective on the distance facet of our economic model. We act in times of expensive oil like we did in times of cheap oil. Not very wise. We must stop fly daily many planes full of one type of flower from all of the world to Amsterdam, auction them there in small quantities per type, distribute daily many planes full of many types of flowers from Amsterdam to the world. This model was designed in times of $ 10 per barrel oil. It just doesn't work anymore in times of $ 150 per barrel oil. We need local flower production anywhere in the world. Than every man can bring home an attractive priced bouquet

beautiful flowers each Friday again. This easy to understand example applies to almost all products. In the US the average food mileage is 1500 miles (2700 km). This is designed in times of cheap diesel and cheap kerosene. But that is history, oil isn't cheap anymore. We must reduce food mileage severe to maintain cheap food supply. We must start to produce everything we need local. Transport will become to expensive. We must start work in our hometown: commuting will become traffic congestion free, but eating out 50% of our wages, due energy costs. We need new location independent office technologies and new distributed production models. Production that is global designed by brands, but manufactured as close to the markets as needed. The Nike production of the near future takes place on at least 1000 locations. Global and local will find ways to contribute to each other in symbiosis. It's a psychological miracle that we somehow just stay acting if our was cheap and this way demolish our prosperity severely. There's nothing to gain by this, only much to loose. In some strange way we doesn't want to except that cheap oil had left us and that we must start to do things different just to maintain our prosperity. This is a huge deficit of all our economic/politic leaders. They doesn't points the way to the future, but even try to extend the future in a changed environment, with all its damage. Sure there will be electrical cars/trucks and we have electrical trains. But cheap abundant electrical power is made by cheap abundant fossil/carbon energy and that's no longer available. The whole new electric version of our transportation/mobility dream is just a fake idea: nobody knows where the power for this dream must come from. People really doesn't understand (severely underestimate) the huge energy load that carbon energy supplied us with. Transport/mobility will leave us for economic reasons, till we find new cheap and abundant energy sources. It's not hard to understand, we only don't want to understand it. That's the problem. We just hope that we could stay doing the same in an other economic environment. But just economics tells us that there is some severe price adjustment of one resources we use a lot. Something we accept and work around or we get smashed by to the wall (Simmons).

Gas: Gas used to be a unwanted side product of both exploring and refining. This has changed. Gas is becoming to expensive to flame it of. It is harvested and piped away to nearby users (and as gas pipelines were initiated to also long distance users) or cooled down and/or pipeless shipped as LNG to foreign markets. In many nations there is a high density peripheral natural gas infrastructure installed in all the cities/villages. The US has plenty or natural gas for domestic use for decades to come. Europe has Norway/UK/Holland and will become more and more dependent on Gazprom of Russia. Norway has canceled new gas production projects as they as they have calculated probably will reduce oil pressure in the same Troll field. New investments in gas production of the Troll field that reduce oil output where investments already were done, was wisely considered not economic. Gas is a very attractive energy source. Its logistics is invisible and relatively cheap, its use can be turned on/off in a second both by the enduser. In power generation it's a fuel that no needed a new infrastructure, burns clean, is suitable for decentral power production (and thereby rest warmth use in domestic heating projects) and gas-to-power plants can be turned on/off in very short time (making it a very attractive peakload targeted fuel). In the US T. Boone Pickens (a 81 year old oil baron of BP Capital Inc.) want to replace the gas that is used for 20% of the power baseload generation by windenergy. His plan can be found on www.pickensplan.com and gets attention of both presidential candidates (Obama and McCain). Australia is becoming the LNG export country of the world. The Middle East uses their gas for power generation. Russia and Iran have a huge gas surplus. Gas is geopolitics as it is an economic lifeline. Bombing out a gasline is putting a continent in the dark for several days. In the winter this will have even more impact. Nations seek both pipe redundancy and supplier redundancy. Russia and the USA understand energy politics. The rest of the world are the dummies. Georgia was a power interference

between Russia and the US. Both Georgia/US (invasion independent region South Ossetia that wants to be reunited with North Ossetia) as Russia (nuking every military installation in Georgia to the ground as 'don't mess with Russia' signal) can be blamed for this conflict. The US want to supply Europe by a pipeline trough Georgia with Iraqi and maybe Iranian oil/gas. An invasion of Iran by the USA is no option anymore as India, China, Russia and Venezuela support Iranian independency for their own interest) gas. Europe must find its own (constructive) way with Russia and leave the USA out of this discussion. Russia likes to gain friends. Real friends serving mutual interests. Medvedev is the bridge of Putin to Europe. Europe must offer Russia real mutual/friendship based deals. The business facet must become mutual. Russia is a water, food and energy surplus nation. Not the USA, not China, but Russia and Brazil will become the economic heavy weights of the 21st century. Russia has an authoritarian type of capitalism, that could easy to a healthy open free democratic capitalistic type of democracy. While Russia is turning down the KGB, the USA is building DHS. The USA was the home nation of freedom. Freedom was in the US genes, due the history if both the nation and its immigrants. While Russia is building capitalism, the USA will socializing the financial, car and airline industry. Global production of fertilizer is moved to gas rich nations like Russia and Iran (due to the huge gas demand of the Haber-Bosch process), making by the current fertilizer technology Russia and Iran the bottleneck of our cheap food system. Fertilizer production by coal is possible, but requires much more energy (and is thereby more expensive). Algae and/or bacteria based fertilizing technologies are important for food independence of all nations of the world. Gas can be processed to liquid fuel. Due the process costs energy it is less energy efficiency, but still it's possible. Gas con compressed used as mobility fuel. In several cities in Holland the public mobility buses are fueled by compressed natural gas.

Tarsands: Tarsands are sands that contains hydrocarbons. It can be explored by mining (surface and underground) or by in-situ methods (mining and processing underground by underground drilling/heat technologies). Water is used a lot (as in: in huge quantities) in tarsand based oil production. The first reason for this is due the physical characteristic of water that it can transfer a lot of heath: water can absorb and provide back 0,5 MJ in a rise from 0 degrees Celsius to 100 degrees and back to 0 degrees. The second reason is that it can control a production process not to rise above 100 degrees Celsius, which is useful by tarsand production as higher process temperatures would cause a lot of oil lost due to these higher heats. But water is getting more and more expensive for the tarsand industry. The same way regional/national governments tries to strip the oil internationals as much as possible after they've done their investments (which is the future of the oil internationals in one line), the Canadian Administration for example has installed a Water Tax, that just tax additional (above all other taxes and fees) $ 15 tot $ 20 of each produced barrel of tarsand originated oil. The tarsand based hydrocarbon industry will abandon the water based production model (not for the taxes: it still is very attractive), but due the fact that the tarsand industry uses so many water that the water must be transported to the production sites over more and more long distances and will become to expensive. Water scarcity is the huge (and stupid) forgotten production facet in the current tarsand development/technology. Tarsands will be waterless burned (power) or gassed (gas). The waterless production processes will also more energy efficient (less cost and more sales). The underground based new high tech in-situ production model will gain enormous popularity: based on direct harvesting/using the energetic value of the vaporized gasses, or indirect by warmth pump technologies. The current tarsand model is just a beta version of the future tarsand model. A huge development in tarsand energy efficiency improvement will be if tarsand-to-power plants. They will become the most used model. This model requires an on-location power infrastructure. When hydrogen production energy efficiency could rise, that would also be an off grid location than.

Oilshales: Oilshales are large solid stone/rock formations that contains hydro carbons. It holds of course less hydrocarbons than crude oil. In order to release these hydrocarbons from the shale stones, it needs to be heated, than they hydrocarbons vaporize and these temperately gas can be condensed to a liquid and than distillated in to oil products. The process use the vaporized gas also to fuel it's own heating process. Oilshales can be explored in surface mining, underground mining and in in-situ projects. The in-situ process extracts the oil of the oilshale without moving them, by creating of underground fire technologies and underground vaporized hydrocarbon harvesting. Water (as heat transporter and process temperature protector) is the missing/expensive part in old technologies based oilshale production models, new models will be waterless technologies. Gasifying will gain enormous popularity. Oilshales can be harvested with 25% to 33% energy lost: using 1 barrel equivalent to explore 4 or 3 barrels oil. A huge development in oilshales energy efficiency improvement will be if oilshales-to-power plants will become the most used model. Independent if the mining is surface/underground or in-situ. Based on direct harvesting the energetic value (air expansion in both production and burning) of the vaporized gasses, or indirect by warmth pump technologies. This requires an on-location power infrastructure/grid connection. When hydrogen production energy efficiency could rise, that would also be an off grid location than.

New: Energy will become much more expensive than it is already now. We must seek new energy sources. Stop thinking that carbon energy was the only source and that there is no other future. If we stay thinking that kind of thoughts, there certainly will not an other energy future. Luck is not something that will come rescue us. Invention will maybe. We need a new approach on energy. A post carbon approach. We must close our psychological departial process related to carbon energy and face a carbon less future. Only then we get inventive and create a new/inventive type of scientists. We need to see 1) that there are seas of energy out there, but 2) that we don't how to tap them yet. We must start thinking the way Tesla thought. A good first step in this direction is that we start to realize that everything we see is just organized energy. Mass is organized energy. This will make us new energy minded. Than we're open to find ways to tap/harvest all these seas of energy. And we really don't have a clue jet. But that's no problem, as long we start open our perspectives today. Than tomorrow we find ways. Ways that will have dead ends and maybe ways that lead us to a new energy future that not will burden our economies and have no geopolitical games attached to it. We will not forget the laws of thermodynamics, but we will find ways to exploit them instead of being captured by them. First we want to tap the oceans of energy we do recognized earlier, second we search for process characteristics that release more energy than it demands energy input. Transport also maybe needs a complete different scientifically (ion propulsion based) approach.

Patents: A side problem in energy developments are patents: designed to stimulate inventions, science is now hold hostage by nothing creating lawyers. Patents and energy/health will face more and more discussion. The solution for this problem is not tearing down the patent laws, but in organizations that acquire/purchase patents and make them 'open source' or 'small fee based'. The world needs energy/health solutions, lawyers we have already enough.

Future: We can harvest all above mentioned energy sources, but these will not equal in supply quantity nor in price the passed away times of cheap oil. The future of global energy must become cheap and abundant again. As we in the future already has harvested sun, wind, sea en geo energy maximally: Real new energy sources will most likely be based on a harvesting energy out of the two substances that are abundant available everywhere: water and air. We must find ways to harvest temperature energy within water and air. By a mix of technologies we have (partial/rudimental) available right now yet, but we must apply in a certain (not know yet) composition. What for technologies we must explore deeper (before we can start to mix them in processes)? We need to develop more/deeper/wider/opener in the following science fields: Biotics, magnetics, voltaics, resonansics, laserics, catalystics, chemics, pressuristics and ionics. Find a mixture of technologies that 'to work around' (surprisingly doing this by just using) the first look of first law of thermodynamics (conservation: the fact that energy not can be 'born' or 'lost') by use other physical/chemical nature laws that will release energy we now can't release without a mixture of these technologies. Energy input that will be multiplied by physical/chemical characteristics.

Bridging: We need to see that scientists are no inventors and inventors are no scientists. We need find ways to bridge between these two very different worlds (who really also dislike and disrespect each other). We need them both. Hans Derksen is a scientist who sees this problem very clear and tries to build bridges between them, mostly just by being a bridge for both these worlds in arranging more and more open subject related discussions between both parties.

Biotic: Bio energy use will lower external energy demand in both homes and farms. All types of organic waste will be used to generate biogas. All farmers will have animals again. Farmers will grow their own diesel by growing oil containing crops. Each agricultural focused village will have it's own bio oil refinery. Trees will appear everywhere again. New bio based energy will be aquaculture based algae and air based high density flora that eats CO^2 out of the air and make it to some CH types in terrifying speed. The new bio waste process is not burning it, but gasifying it: more efficient in energy return and better to handle in energy use. A dry bacteria that eats CO2 out of the air and turns it in to a CH type (oil like substance) would be nice: just capturing/harvesting the fluid. The algae/bacteria that on the soil of the farms eats N out of the air and fertilize the soil with it certainly will also a huge energy source (as in: bypassing the need of fertilizers and thereby lowering global natural gas demand severely).

Magnetic: Magnetics is about using/benefiting magnetically fields. Artificial magnetic fields can be used to influence processes. When magnetic field are used in line with the earth's magnetic field the artificial magnetic field gets a free extra boost. The earth magnetic field is too weak to power small/cheap generators everywhere driven/powered by this magnetic power. Magnetics related to new energy is more about process influencing, about gaining other wanted process outputs, about process manipulating. Regarding magnetic there is complete new world to discover within magnetics.

Voltaic: Voltaic is about using/benefiting voltaic currents for process influencing. Gaining other process characteristics/outputs by having voltaic currents within (powering the process) / beside (catalytic function) the process. Tesla was obsessed by the effects of high voltages. Research in both low voltage and high voltage process influences has lost

the interest of scientifically world. That we will use voltaics to initiate, influence and/or maintain processes in the future is very clear. There is complete new world to discover within voltaics.

Resonansic: Mass (air/gas, fluid, material) vibrations can trigger physical/chemical/biological process changes. Awakening/initiating/feeding hidden/still powers/processes. An example: maybe electrolysis will go much more energy efficient by a vibration of a certain frequency. That we will use resonansics to initiate, influence and/or maintain processes in the future is very clear. There is a complete new science world to discover within resonansics.

Laseric: Lasers can facilitates/triggers/initiate complete new processes we doesn't know right now. Lasers are a relatively new (and also very expensive) part of science. But that we will use lasers to initiate, influence and/or maintain processes in the future is very clear. There is a complete new world to discover within laserics.

Pressuric: Pressure can be used to initiate/trigger/feed complete new processes we doesn't know yet anything about. Pressure is just a process variable we must play with and see what the results are. The nice thing about pressure is that it is just variations on one value, making research less complicated. That we will use pressure to initiate, influence and/or maintain processes in the future is very clear. There is a complete new world to discover within pressurics.

Catalytic: Catalytic process influence we use already a lot: So has each car has a catalytic device in the exhaust pipe. The strange effect of a process that is been altered by the presence of a nearby material that isn't used at all, but still alters the process totally. Catalysts is one of the visual proofs of the everything is just organized energy theory. We will find catalysts that make process possible we just can imaging right now. That we will use catalysts to initiate, influence and/or maintain processes in the future is very clear. There is a complete new world to discover within catalytics.

Chemic: Chemical processes can release energy. Burning oil ($CxHx + O^2 = H^20 + CO^2$) is an example of it. We think to much in C in energy releasing. We must think wider. We must use chemical processes not a main target processes, but maybe more as side processes. We will use chemics to initiate, influence and/or maintain processes in the future is very clear. There is a complete new energy harvesting world to discover within chemics.

Ionic: Popular called electron theft/harvesting. Maybe we will use ionics as main energy harvesting method or we will use ionics to initiate, influence and/or maintain processes in the future is very clear. There is a complete new world to discover within ionics.

Water: Regarding water as energy source: maybe we want to rob only some temperature based energy of it (output: colder water than the input), or we want to gain an energy positive electrolysis process of water, that demands less (power) energy input that it gives in (hydrogen) energy output. More likely the answer is a combination of both: powering the electrolysis by rob warmth from a separate cooling water stream. The

challenge is to make an electrolytic process that 1 has less power loose and 2) takes (warmth) energy from the cooling water. If we could do so, that we are in line with both the first and second law of thermodynamics. If the process could be made useful energy surplus it would be the final solution for the Energy Crisis (still we have to transite our install base (energy using assets/investments) from fossil molecule input to electrons and/or hydrogen input. Local based cheap and abundant power generation could be possible again if we could make this process energy surplus. This maybe can be done by the use of a combination of different technologies: electro magnetism -enforced by earth polarity-, high voltage waves, catalysts in the water and on the electrodes. This way we could 'harvest' the energy from the closed circuit 'cooling' water (which than come more cold out than it has gone in, with will get some warmth again in a lake, river or sea based closed water pipe circuit. The electrolysis based solution could lead to small local plants that electrolyze water assisted by a complex of catalysts (in the water and on the electrodes), high voltage waves and resonance. The energy would be 'harvested' out of the secondary closed circuit 'cooling water' stream, which will be heated by closed circuit interfacing with a nature water sources, like a river, if catalysts and/or resonance and/or high/low frequencies could facilitate a low energy input electrolyze, that absorbs energy from a closed water 'cooling' system could be utilized. So electrolysis assisted by a complex of catalysts, high voltage waves and resonance as complex for 'harvesting' for electrolysis out of the 'cooling' water (and this way being in line with the first law of thermodynamics). How we make hydrogen out of water with an almost 0% current lost by use of the right set of water based and electrode based catalysts where we feed only the water and harvest temperature of an separate water stream that we feed though glass pipes though the process chamber, etc.

Air: Magnetics, voltaics, resonansics, laserics, catalystics, pressuristics and ionics achieving that air gases become more dense (and let them eat warmth out of the air by this). The if for example catalysts could have expanding effects atoms, the first low of thermodynamics will give free energy out of the air. So a complex (low/high frequent waves, high/low frequent resonance, high voltages, magnetism and catalysts based) process that harvest energy out of normal air temperatures.

Fusion: Nuclear fusion has (theoretical) great possibilities for local based cheap and abundant power generation if we could find a process that could be initiated and maintained relatively easy and thereby cheap. The solution may lay in combining different technologies. Using the energy that releases by nuclear transformation and/or fusion (if it is possible) could lead to the invention of small local nuclear fusion thermal power plants, where the needed high temperature and handling of these high temperatures by magnetism. If one of these of both should take place than cheap and abundant energy is available again, but magnetic and fusion scientists don't see that happen, so new scientist must be born/grow otherwise this will not happen, current magnetism and fusion science doesn't lead to those two. From a nickel you never can make a dime by engineering. We need a new dime by a new design/concept. The current fusion direction of ITER is a dead end street. A nickel, no dime. Trying to polish a nickel into a dime. That's useless. First find the dime, than polish it. First find the right direction, based on a new invention/concept. Current ITER direction is trying to polish something that isn't it into something that is it. Finding first something that is it, than polish it. Current direction of ITER is based on the concept that enough concentrated and funded middle class will lead to top class, major brake trough inventions are not done in ITER like settings, they're based on a feeling/direction of a full (or just partial) genius, and are only polished/adjusted (not designed) in ITER like settings. Or this will be by the use of a complex (low/high frequent, resonance, magnetism, lasers, catalysts based)

nuclear fusion process of simple structured elements, that harvests energy out of nuclei. Not trying to find materials to isolate the fusion, but a (also very price effective) 'open' (as in no) 'building' made out of / by magnetism. Controlling the fusion by magnetism and initiating it with crossing lasers. By the fact that the building than is 'virtual' (based on magnetism), it can be very easy installed everywhere there are population or industry concentrations. How we get easier to operate, energy/cost effective colder fusion by use high voltages, lasers in virtual by magnetism 'build' open air sites.

Wrong: We need new energy sources. But we don't new problems on top of the hard time the Credit Crisis, the Energy Crisis and the Water Crisis already are creating right now. Invading countries is not a good indirect (indirect) energy source, but violent robbery within the international community with severe damage of own future interest. Stratospheric energy is not a good energy source, but playing with the protection shield of the whole world. Fission is not a good energy source, because it's playing with possible pollution of whole continents.

Invading: Invading countries is not a good indirect (indirect) energy source, but violent robbery within the international community with severe damage of own future interest. When the granting distribution model is placed on top of the price based distribution model, nations that has invade other energy rich countries will certainly fish behind the fishing fleet of the rest of the world and only be granted the leftovers (which will not be there). Venezuela already prefer not to sale to the USA, Iran prefers China and India. When the US leave Iraq the oil rich Sunni South will not want to sale to the USA. The USA must reconsider its energy policies very soon/quick as Mexico and Canada will produce each year coming year severe less. The US must build real friendships in the world. Abandon the military option and concentrate on the US Aid option. Military make oil expensive and is a treat to continuous supply. US Aid will lower the price and make supply regular. The oil internationals that will follow the US invasion of Iraq certainly will certainly faced with re-nationalization (and all the attached capital lost) and will not have sustainable/future positions in Iraq. The same applies for mining companies and pipeline companies that entering Afghanistan in the trail of the US invasion there.

Stratospheric: Stratospheric energy is not a good energy source, but playing with the protection shield of the whole world. Therefore stratospheric energy is certainly a 'no go zone' for energy harvesting with huge major impact disadvantages and possibilities. The stratosphere protects the earth and the life on it against the particles of the solarwind and other cosmic radiation. Only fools want to weaken the stratosphere for tapping some cheap energy. Just a cable between the positive stratosphere and negative earth would do the job. Both in giving very hard to control fuel-less energy and giving life on earth free plenty of different cancers by destroying the protection layer as in changing climate for ever by changing earth's polarity mechanism.

Fission: Fission is not a good energy source, because it's playing with possible pollution of whole continents. Therefore fission is certainly a no go zone for energy harvesting with huge major impact disadvantages and possibilities. It's only (not more and not less) a beta/development version of nuclear energy harvesting and a wrong detraction in this area. The nuclei can give us certainly cheap and abundant energy, but fission has got so much downsides that we must see it just as a quick to leave experiment and find the right way for exploration of nuclear energy. Any energy source that could damage the world at large scale must be abandoned: we looking for answers, not for new problems:

we have already problems enough the next years. Each rich town that can afford it will start to build its own nuke facility and this way tries to extent the life time of the city with one of two decades, but building it will take a decade and the price of nuke fuel will be oil price connected. A lot of investment for nothing, only a few of all these thousands will be fully finished. Fission was the wrong detraction of the interesting road to nuclear energy. Uranium 235 is scare and production will be peaked in a decade or two: so it give no sustainable solution. The cost of Uranium 235 will explode, linear with oil prices (see the price development of coal and gas, that goes parallel with oil, or if you want to call it so: are oil attached). Only in 2007 there were several leaks in fission plants all around the world and in Sweden even someone of the maintenance crew was arrested while trying to enter with explosives in his bag. Fission is risks and we don't multiplying risks, we need multiplying solutions. We will be again bounded by foreign nations that will supply us and tap our wealth and we become political dependent once again. Just like our oil addiction drains our wealth now, and also force us to do business with regimes who operate not democratic and repress large parts of their people. Nuclear plants operate without insurance: no commercial insurer will give any kind of coverage. The first thing the fission based nuclear should do is initiating a joint insurance pool, that will be feed with 10% of their turnover. The fact that a whole very high risk energy just operates without insurance and just find this normal is very characteristic for the common attitude in the fission nuclear industry. The fission based nuclear industry has not so much a PR problem, they have more a severe attitude problem. There is certainly a connection with nuclear weapons of mass destruction (why otherwise are nations against the nuclear ambitions of other nations) and nuke side products (uranium dust) is also being used in anti tank weapons for mass increase and for it's burning specifications after impact. Nuclear energy is about just turning costs of problems and costs of waste and after operation on society, actual and on the bill of the next generation. We have damaged the interests of the next generation more than we should already. Time for sustainable prosperity. For us and our children.

Ideas: Tesla has thought a lot about gravity and propulsion. He saw gravity as just an other EM field that could be eliminated by more than air density by the shape of wings, but also by creating 'just' a counter EM field. He saw propulsion not as carbon fuel based air expansion process but ionic based pushing process. We know of both technologies nothing, but they will give us much more energy efficiency in air based transportation. Not a source of energy, but both are huge (theoretical) potential conversation technologies that they deserve to be mentioned on this mainly technological solution characteristic page.

Proposals

Analyses
Models
Facilities
Exposure
Globalization
Movement
Participants
Events
Examples
Sponsors
Prototypes

Analyses: Planck Foundation has made two Analyses: First the more deepened Global Resources Analysis which has also illustrating images included and than the text only Global Future Analysis. These two Analyses are mend to create a huge global awareness wave under leaders, scientists and opinion makers. The digital version is and stays the draft version. Many people from many countries on the world has offered to translate the Analyses, but the localization must be done commercial by commercial publishers. Therefore both the low English quality and the low picture quality of the drafts will be fixed by national publishers in the final printed versions. The more shortened version with the name Global Future Analysis is mend to be partial republished by third party media. Several economic-, political-, environmental- and social media will publish the Global Future Analysis in a chapter based series over a certain period of time. Newspapers and newssites will do this in a 2 week schedule. The Global Resources Analysis is read 1,500,000 times in a few months since it's draft version release in April 2008. The Global Future Analysis is yet since the beginning of September 2008 digitally distributed on the Internet with the slightly corrected version of the Global Resources Analysis digitally attached to it. The reach data of the Global Future Analysis will be published soon. Voluminous digital distribution and massive partial publishing enforce the market chances of printed versions of both analyses. The best illustration of this is the Oprah book club: the download number of a book by Oprah on the book section of her website relates directly to retail turnover numbers: the more downloads, the more retail sales. The number of readers of the digital document till now is very attractive: as already mentioned above: in July the 1.5 million readers barrier was taken for the Global Resources Analysis only. The number of readers will explode in last quarter of 2008 when the shortened Global Future Analysis will gets it's global exposure and gets partial reprints in third party media and by the below describe communications. The timing in terms of market season for print publishers is just right (the gift season is coming). The exposure will support printed copy sales tremendously.

Models: Planck Foundation will finish soon beside the 2 Analyses, the production of 12 Generic Models needed for easy channeling a quick transition of economies to lower energy based prosperity. After awakening by the Analyses, there will be a need for concrete, practical Models to act upon this awareness. The Models are mend to facilitate a transition from high energy economy to a low energy economy much more easier: lying the rails for the train to ride on quick/simple/easy/instantly. The Models 1) prevent wasting any precious transition time by confusion after awareness by the Analyses and 2) empowering the changes by plug-in intelligence/routines/designs giving RWA (ready, willing and able) forces the channeling/speed that they need. The 12 Models currently in

developing by Planck Foundation are: the Action Model, the Communication Model, the Localization Model, the Production Model, the Mobility Model, the Transport Model, the Currency Model, the Privacy Model, the Peace Model, the Political Model, the Knowledge Model and the Finance Model. All these ten transition channeling Generic Models of the Planck Foundation will be ready for download on the website (and also for publishing by book publishers) soon.

Facilities: Planck Foundation wants to support local/regional/national initiatives not only theoretically by the production/communication of Analyses and Models, but also practically by generating digital facilities called the Technologies. Local/regional/national initiatives should have just plug and play facilities. Channeling their efforts maximal. Preventing any further delay in transition time. From the below described Exposure activities the Digital Facilities for the Movement has already grown. Any movement needs facilities. A digital based/feed movement needs digital facilities. The by Planck Foundation initiated Global Development Movement is unique, full digital thereby totally flat (no hierarchical structure), just digital servicing/facilitating overlay organizations, servicing/facilitating national/local actions. One digital engine that facilitates every information, communication, concept and facilitation. No overhead, full digital, just building the best 'user information feed/driven engines': that local people of the world could benefit tremendously off. Engines that facilitate in the full spectrum national/local governments, national/local businesses and national/local energy/water specialists. The concept is a flat, non hierarchical structure. Just servicing local/regional/national efforts. The best way to steer and support developments is facilitating them. Ruling is something is just killing the existing drives and powers. Organizations we don't need: they cost money and only slow down problem addressing power that grows explosive everywhere. Planck Foundation certainly must practice what it preaches: local is the norm / power / success concept of the economies/societies of tomorrow. Act local, think/research/facilitate global in an open knowledge based and communities/industries facilitating model. That's the concept of the Global Development Movement. Planck Foundation wants to realize, stimulate and facilitate this Movement the best possible within her budgets/reach.

Exposure: Planck Foundation will build a huge and very divers (mainly third media/stream/communication focused/powered/feeding) communication mix on top of the major distribution/exposure of these 2 analyses and 10 models. Central facet and driving force in this exposure model is the free download possibility of all 12 reports. 1) The first initial related exposure focus is sending the both Analyses to as many as possible leaders of the global economy, society and media, based on a during time compiled contact database of 300.000 leading decision makers globally. 2) The second initial related exposure focus is giving these people the free possibility to forward/broadcast the Analyses and Models within their networks. This possibility has give the Global Resources Analysis its 1,500,000 readers in only 3 months time. Acquaintance based reception or recommendation gives always more effect on communication. This possibility will be also supported by a functionality on the www.planck.org website, that facilitates people to send their relations a copy of the Analyses and Models for free (mail a friend or mail all friends by easy uploading a list of pushing personal contact list). 3) The third initial related exposure focus is on third party media exposure. Giving third party media the possibility to use parts of the Global Resources Analysis and the Global Future Analysis in their (digital or printed) publication, with any charge. Giving them high quality interesting content without the normal to this fact attached copyright payments. Pre-processing information/data for them. Additional the both analyses are also full of potential quotation lines due the used writing style. The

third party media will pick-up many strong lines available in both Analyses. The exposure of GRA and GFA based quotations in third party media will also attract a lot of readers. The availability of loads of testimonials from PMs, central bankers, economists, social leaders, scientists, journalists, CEOs, CFOs and politicians on the plank.org website certainly speeds up both third party forwarding and third party media exposure, as they function as reference boosting environment. A negative side effect is that Google ad exploration fake sites with also use the pages of the texts to attract traffic, but this is a side effect that can't be avoided, an open model for third party partial text publishing always will have these kind of side effects. 4) The fourth initial related exposure focus is banners set in different sizes and with different messages and layouts that third party websites can run. The banners direct to the download page of the reports on www.planck.org. This will boost the download number severely. If the pressure on the server will get to high, the pressure can be easily distributed on more servers. 5) The fifth initial related exposure focus is publishing the Analyses and Models in print in as many local languages as possible around the globe. The already existing exposure for the GRA and the GFA makes publishing both Analyses (and the Models after that) in their national languages very interesting from commercial perspective (high volume possibilities by just a little additional local exposure). All these 12 publications also promote their own mother/daughter/sister publications. Planck Foundation is searching for a global orientated publisher who's just good in making as much as possible national publishing (with attached exposure) deals and we are willing to cut profits on these very attractive possibility in these adequate momentum in time in three (national publisher, international contractor and Planck Foundation). So a very transparent type of deal, where everybody take it's own attached risk. All these 12 publications has/will gain intellectual weight by Planck Foundation as initiator/publisher. The market turmoil will increase in second half 2008 severely. Making those 12 just in time, just in place, just in content, just in volume. National publishers can offer a deal for national markets, global publishers can offer a deal for conquering the global market in the next years. Both the Analyses and the Models have a long and recurring commercial lifeline, because they can be republished each year as long as this credit/energy/water and their deferred crises (like the Food Crisis and other crises) are present. The subjects of the GRA and GFA are so common that every local journalist, opinion leader, political leader will be lined up to discuss these publications time after time in the local media. This multiplies the exposure (and multi nation release possibilities) instead of reducing it by just only a single author focused presence exposure. 6) The sixth initial related exposure focus is a news section on the planck.org site concerning the 2 Analyses and the 10 Models and their global roll-out, with attached a newsletter subscription and a RSS feed. National publishers and energy/water/food/policy/strategy corporations also can apply for the rights for an own national or corporate version. 7) The seventh initial related exposure focus is a podcast section, an webcast section (YouTube hosted), an image/picture section/channel (Flickr Pro hosted) and a video section/channel (YouTube hosted) attached to the planck.org website. 8) The eight initial related exposure focus is both a forum and wiki attached to the planck.org website as preparation of the global roll-out of the Movement. 9) The ninth initial related exposure focus is adding 1 to 1 communication tools to the planck.org website (and maybe with also 1 to *x* possibilities), in the form of chat, email addresses, email magazines, RSS feeds, audio/phone and video/videocalling/webcast technology. 10) The tenth initial related exposure focus is adding an e-learning system attached to the www.planck.org website (giving certificates per localization initialization or sector initialization course). After these 10 initial and relatively simple to realize communication facets there will be enough exposure to start some big not digital exposure projects. 11) This will start with making a Committee of Recommendation: a list of important people who welcomes the Global Development Movement. Planck Foundation also can act as bookings agency for public appearances of these high quality opinion/decision makers: giving Planck Foundation an additional initial budget for the realization of the digital

structures. 12) There will be a tour (a workshop/conference in each country) leading to a global summit (a global conference) attached). 13) There will be a local, regional and global music event attached. 14) There will be a feature movie (working on contacts with Hollywood for this) attached. 15) There will be at least one documentary (but certainly space/material for more) attached. The initial focused exposure are other items than the Communication Model. The Communication Model facilitates completely third party communications (for example school projects, governmental energy communication kits etc). The initial focused exposure promotes the Analyses, the Models and the Movement to decision makers globally. The Communication Model supports local/regional/national decision makers in governments, organizations and companies worldwide in their internal/external communication on energy prices-shortages-effects-consequences-solutions. Of course the income of the third party printed publications and the income due the 11/12/13/14/15 actions will give additional operational budgets. Also maybe some sponsoring of or advertising on the own publications and media.

Globalization: Planck Foundation will promote these 12 publications (2 Analyses and 10 Models) by the above 15 methods in as many countries as possible. This will be done commercial as commercial activities are stronger due the fact they create their own 'fuel' and honors the people that contribute. 50% of the profit made on these exposure is for the concerned nation initial organization and 50% is for building the needed global infrastructures. Initial national startups can be sponsored, funded and/or subsidized. Example: the Dutch export authorities stimulates export activities of any product/service to any country in the world with a 50% initial cost arrangement. These arrangements can be called in to support the initial activities in a country and the realized turnover by 1 to 15 can be used for both the national initial as the global facilitating (technologies and models) structure. The commercial approach is needed for powering the global roll-out. Any action has a time consumption and facilitating cost price facet. Sometimes also local/regional/national/continental governmental structures will support the roll-out of these Analyses, Models and Technologies by subsidizing them for initiating in their regions.

Movement: Planck Foundation will guide these 12 publications (2 Analyses and 10 Models) to the realization of a full local municipals focused digital Global Development Movement: a completely user driven local development focused digital structure (regardless the word global in the name strangely full focused on local development). All other current development organizations are organized hierarchically (top is leading), but this one is organized reversed (local is leading) and there is even no top, this could just make the difference, multiplying effects with a huge number. No organization, just a local initiatives enforcing movement. Not managing, just facilitating them with digital facilities. How to realize? Just by initiating a team of digital facilitation creators, a team that organize/handle global press relations/exposure and a team that handle/process reactions. A powerless facility organization, that facilitates local changes on global scale. In the first plans (developed back in the '70ties and '80ties) it was the Global Development Organization, in the old concept formed by several functional daughter organizations: a World Energy Organization, a World Water Organization, a World Housing Organization, a World Farming Organization and a World Digital Organization. The last because digital communication will become even more important as travel becomes more expensive. It was designed to replacing the ICANN, ending the unilateral US ownership of the global internet root. Also ending political/brands focuses/influences that plays a dominant role by ICANN. Starting active functional focusing, active targeting to IP6 and the decentralization of the internet by local exchanges everywhere. But the ITU (International Telecommunication Union) is a much better mother for this

technological global organization, the ICANN should transfer all their functions to them. Unilateral ownership of such a thing as the global internet is no longer a valid option in a global society, regardless the history of TCP/IP and DNS. Very good capable in ensuring these neutral non political just database driven issues. Just like they we're intended to do based on X25 en X400 standards before TCP/IP standard pushed these two ITU defined standards for internet and email of the market. But while designing the initiative framework of these organizations the problems/solutions became more and more connected with each other and start to have one mutual facet: the best solvable local action. Local is the central binding facet. Energy, Water, Housing, Farming and Communication are just facets that are needed local everywhere in the world. And one other huge facet: Only on local level actions are simple to realize without complex and developments stalling/paralyzing politics. Government gets less effective, more complex and certainly more corrupt as the distance to civilians gets wider. Local is becoming the main facet of every person on earth: his own local environment is what drives a person the most as energy prices 'tax' distances (transport and travel) severely. The world needs no new organization, nor any organization will be able to initiate itself and initiate/steer developments in the limited transition time frame that PeakOil provide us (due we haven't started in the '70ties, but we started as the oil production has peaked already). The only method that can provide globally and instant local development is a movement: hundreds of thousand local initiatives that starts at once. The answer to PeakOil is not coming for national governments: it is coming from local governments. Just because they're used to talk less and act more and address problems directly, not interfered by huge interest powers. Local governments just can initiate very easy and very quick the right things for their local economies. The emperor of the 21st century is the local mayor.

Participants: Above Exposure actions and Movement model of Planck Foundation are open for free participation to anyone. Local, regional, national, continental, global. Contact interested media/journalists in your local/regional/national reach. Start your local/regional/national community now on the website. Share your specific local/functional knowledge/experience digitally within the Movement, come into action. Contribute, support or realize. Either or both local/experience focused or functional/knowledge/experience focused. Share your practical energy knowledge. Get your local community moving. Or get global involved in a helpdesk/group, a functional desk/group or an exposure desk/group. Or get involved in building the digital structure: there will not any basic technology created: just building an information/action complex by assembling existing open source internet technology into one login functional structure. Planck Foundation will use the export and development funds of both Holland and Europe to assist participants anywhere in the world in building local low-energy/high-prosperity development/publishing structures/events.

Events: Planck Foundation stimulates anywhere it is possible (local-regional-national-continental-global) governments/organizations/groups/people by the organization of events on local development. If needed than Planck Foundation maybe can assist in marketing, speakers, promotion material templates, etc, etc. The involved of a global operating Planck Foundation (known by the Analyses/Models/Facilities) and its support maybe will assist in getting things realized more easier. Such an event is 'the Permanent Oil Crisis' symposium, highlighting a post oil/carbon economy, driven by leaders of most industrial/economic sectors.

Examples: Examples of enhanced/advanced local low energy driven high prosperity. That's what the world needs. Information is only just information. Proven examples has much, much more convincing power. The first local prosperity villages/cities will get very much global exposure and have very good export possibilities. The first ones front seat rows in the global transition.

Sponsors: If there are local initiative: sponsor a local initiative: help the initiator and/or the team who wants to start a local vibrant prosperity initiative. Or sponsor a regional/national initiative. Local a national initiative. Planck Foundation certainly also searches large sponsors for both the above described exposure (in return: huge and high impact exposure by a very interesting, attractive and decision making audience) as for realization/building the Movement (in return: time limited banner exposure by a very interesting/attractive audience). People, companies, organizations and governments that underwrites the above mentioned actions and actual want to support them, public or silent. By giving the Analyses, Models, Movement some of the above described exposure (the best way) or more financial (paying for a part of the above described actions, just visit the www.planck.org website to find ways to do this). National, regional, local governments: make it possible that a team could implement all this to your economy and society. Just plug in the intellectual power of the whole content. The best marriage between global and local. National government, city governments, local business groups: create/donate space for an information center. A non-digital place in real life where people/students/schools/universities/businesses can come to if they want to see and touch physically the solutions, models pictures, physical miniature models. It takes just an office place, a little operational budget and one or two really motivated organizers to get such a local/regional/national center rolling. The budget will come from the initial sponsor www.sanindus.com: Each order issued to them will give each Global Development Movement initiative an extra budget to build further the Digital Facilities. And maybe from other sponsors. Although everything is done digitally and low budget the sponsoring will determine the time needed from August 2008 till realization of the above described Exposure and the beneath described Movement: budgets equals timeline. The Facilities (the digital structure) of the Movement will be made as much as possible in an online community, the best way to do this type of development, although managing it needs special experience. Planck Foundation may use a 1020 square meter building owned by Indus Capital in Germany where a part of the initial organization can be located, but that building needs changes/adjustments to host people.

Prototypes: Planck Foundation also can use as locations the initial teams: Exposure team, the Digital Structure team, the Development team and the Movement Initiating team the buildings of a semi/half abandoned village in the North East of France (Vosges Mountains). In this case it will also the global advanced localization demonstration village of vibrant local prosperity model. An actual realized demo low budget high tech village is certainly not a bad idea. The budget of the concept village will be limited to housing (building changes) and food (local grown) budgets. Attracting only very motivated/dedicated people and exclude the gold diggers that are not needed. In Amsterdam, Berlin or other world cities there are also some suitable (governmental sponsoring or corporate sponsoring driven) locations available for a demonstrating concept initiative. It's just waiting for some city that offers a housing suitable solution in combination with some corporate sponsoring. As it will gets a lot of global media attention the sponsors will certainly benefit of it severely. On the other hand: the 'practicing what you preach' model also could lead to a totally/completely digital/online based initial facilities/functions generation community with no own realized prototypes demonstrating environment, but just collecting/publishing the experiences of others.

Very soon these prototypes will be initiated by almost any government and each local government will initiate/subsidize a demo house and a demo office.

Reactions

Testimonials
Sponsors
Facilities
Locals
Sectors
Events
Prototypes
Governments
Companies
Publishers
Advertisers
Thanks
Action

Testimonials: For an actual and full list of testimonials received on the Global Resources Analysis and the Global Future Analysis, visit the www.planck.org website. The testimonial list is too big to be enclosed in this by space limited document. Get involved, send your own testimonial by email to Planck Foundation.

Sponsors: For an actual and full list of local groups, sector groups, functional groups and events groups that needs sponsoring, send your own request/offer by email to Planck Foundation. Than you get a message when you can login into this part of the digital environment. The current sponsor gives for each order given to SanIndus by Planck Foundation interfacing some budget of the development of the Models/Facilities: if your organization needs storage: just consider the SanIndus technology: they'll contribute some actual financial support to Planck Foundation in exchange. Our sponsor SanIndus is also willing to support local or sector/functional initiatives and/or groups, so that they have a start budget. In the future there will be more of these market related support possibilities, as we certainly will seek for them. For more information about the SanIndus sponsor possibility of your initiative send an email to Planck Foundation.

Facilities: For an actual and full list of local groups and sector groups facilitating based functional groups visit the www.planck.org website. Get involved, send your own offer by email to Planck Foundation. Than you get a message when you can login into this part of the digital environment.

Locals: For an actual and full list of local based knowledge/experience groups visit the www.planck.org website. Get involved, send your own offer by email to Planck Foundation. Than you get a message when you can login into this part of the digital environment. With the help of export/development funds of Holland we maybe are able to help you.

Sectors: For an actual and full list of industry sector based knowledge/experience groups visit the www.planck.org website. Get involved, send your own offer by email to Planck Foundation. Than you get a message when you can login into this part of the digital

environment. With the help of export/development funds of Holland we maybe are able to help you.

Events: For an actual and full list of local/regional/national/continental/global events visit the www.planck.org website. Get involved, send your own event information by email to Planck Foundation. Than you get a message when you can login into this part of the digital environment. With the help of export/development funds of Holland we maybe are able to help you.

Examples: For an actual and full list of local village/city low-energy/high-prosperity development examples visit the www.planck.org website. Get involved, send a description in text/photo/video of your own local development example/project by email to Planck Foundation. Than you get a message when you can login into this part of the digital environment.

Prototypes: For an actual and full list of prototypes of local low energy high prosperity prototype projects and prototypes of products visit the planck.org website. Local governments that wants to initiate international exposure of their low energy high prosperity actual or future projects can send their information/proposals by email to Planck Foundation. This applies also for local governments who wants to host the Functional Units of the Global Development Movement. This applies also to inventors and design manufacturers of energy, water and production prototypes.

Governments: National/regional/local governments that want to start local sustainable prosperity projects can send an email to Planck Foundation with requests for additional support.

Companies: Companies that want to publish the Global Future Analysis and/or the Global Resources Analysis under in a limited edition under their own name and with their own logo on it, can contact the rights exploring team by sending an email to Planck Foundation. Mainly energy related companies used the GFA and the GRA successfully in their own benefit for communication with their customers and financiers the future price developments of energy. The income of these corporate versions will be used for building the Facilities.

Publishers: Publishers that want to run parts of the Global Future Analysis and/or the Global Resources Analysis in their media/newsletter, of wants to distribute by email attachment or download link the digital version of the GFA and/or the GRA, can contact the media publishers contact team by sending an email to Planck Foundation. Book publishers/printers who want to publish the GFA and/or the GRA commercial in print in their countries and/or languages, can contact the book publishers contact team by sending an email to Planck Foundation. The income of the book rights income will be used for building the Facilities.

Advertisers: Advertisers who wants to exposure their products/services to the readers of the Global Future Analysis and/of the Global Resources Analysis by banner exposure on the website sections of the GFA and/or GRA, can contact the advertisers contact team by

sending an email to Planck Foundation. The income of the advertising income will be used for building the Facilities.

Thanks: As a person/author with a birth ground and an environment, I want to thank Roland, Jan, Paul, Jacquelien, Bennie, Erna, Wendy, Manon, Merel, Dennis, Anouk, Peter, Joscha, Hylke, Lin, Sytske, Kostas, Michel, Jarno, Ben, Esther, Frank, Arie, Johanna, Anneke, Dennis, Perry, Martijn, Monique, Karel, Abdulla, Peter, Herman, Erik, Harm, Alda, JanWillem, Aiko, Marc, Daniel, Casper, Pablo, Jan, Frank, Günter, Moret and the Rabobank for their contributions to my life. Sometimes we have gone other roads, but this Analyses/Models/Facilities were not produced as they is without all of you. The Analyses/Models/Facilities are born by/due a lot of research time you've all give me and a lot of birth pain you've all support me in. Thanks for this, I know it was for you all more difficult than for me, while I was searching for routes for the new ways from here to the future and after that searching period the time came that all you guys saw was dust and a road through the wilderness. I hope that the information produced will contribute to the future perspectives of us: than it certainly was worth the mutual turbulence of researching/creating them. End good, all good.

Action: Enough words. Time for action. Email this Analysis to people you want to communicate with about these information or you want to share these Analysis with. And start/join your own local initiative or start/join a technology/sector initiative. Invite some of the outliners. Draw your own local/national plans. If you can't find own sponsors, you maybe can use the sponsoring possibilities from SanIndus for your own initiatives. We continue in developing the Models and building the Facilities and promote the Analyses, Models, Facilities in order to initiate a Global/Local Development Movement. Join the vibrant local sustainable prosperity movement. Make the future!

Notes