

# Money vs Fossil Energy: the battle for control of the world

## ***Introduction***

This essay provides a framework for understanding the ideological roots of the current global crisis that I believe is more useful than the now tired Left Right political spectrum. I use this framework to provide a commentary on current political machinations around Climate Change and Peak Oil. Building from the same energetic literacy that informs [Permaculture](#) and [Future Scenarios](#), it challenges much of the strategic logic behind current mainstream climate change activism. Like the Future Scenarios work, this essay is intended to help environmental and social activists better avoid the obstacles to effective action in a chaotic age.

## ***Dedication***

Dedicated to the memory of my brother Gerard, born 26/11/1958, died 2/5/2010. Consummate blues guitarist, environmental activist and radical thinker who fearlessly searched for the truth about this world we inhabit.

## ***Acknowledgements***

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## ***Biographical note***

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## Money vs Fossil Energy : the battle for control of the world

The unfolding climate/energy/economic crisis is heating up a very old rift in global industrial politics. This rift derives from two core beliefs on what constitutes the source of wealth. Does wealth come from human creativity and innovation or is it found in the natural world? Is human capacity the source or a by-product of real power?

I believe two alternative (and mostly complementary) paradigms that are implied by these questions, have shaped the history of the modern world perhaps more so than the Left-Right political ideologies. I characterise these increasingly conflicted paradigms by the following shorthand: faith in wealth and power from “human brilliance” (meaning “faith in human brilliance to overcome physical limitations.”) versus faith that wealth and power emerge from control of “holes in the ground”, ie. physical resources.<sup>5</sup>

In a world of energy descent and climate change, both these beliefs are failing and increasingly we see the believers of both paradigms at war in a futile battle for control of the world.

Understanding the nature of this ideological battle is as critical for environmental and social activists as is the understanding of the science behind Climate Change and Peak Oil. Because this ideological divide and battle has been little recognised by historians and social commentators, it is easy to come to the conclusion that one of these paradigms is benign while the other is lethal, without really understanding the nature and implications of these respective ideologies.

Climate activists in particular tend to focus on the fossil energy industries as the “enemies” (both for generating greenhouse gases and funding climate change denial), but naturally see any parties accepting the new climate change agenda as allies. I believe that many of the global players promoting the climate agenda are as dangerous as those denying that agenda. How can this be so?

### ***Ecological perspectives on human brilliance***

I should first acknowledge my perspective in this rift. I believe that the current peak in global oil production represents an effective (net) energy peak for humanity and that we are entering an era of ongoing and effectively permanent “energy descent.” The scale of this change is without precedent in human history. A transition to a world of less energy requires widespread “energetic literacy” so that we can learn how to work with less and avoid some costly mistakes when we can least afford them. The era of extraordinary energy growth and abundance has left the populace and the politicians of the industrial world without an intuitive understanding of energy, since, by its very

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<sup>5</sup> to paraphrase Mao Tse Tung’s famous acknowledgement that “(political) power comes out of the barrel of a gun”



excess we have not needed to appreciate its nuances.

Everything from ecosystems to human economies can be viewed through the lens of energy flows, and since energy behaves according to universal laws, much can be learnt from this field of study. Much of my teaching within and beyond the permaculture movement over the last 30 years has focused on nurturing this appreciation of energy.

When any system – be it economic, biological or ecological – is fed by an increasing amount of energy, we see an increase in the internal complexity of that system. By way of example, in the era of the growth of extraction of fossil fuels, human economies, laws, communications, education systems, technologies and so on have all developed to stunning levels of complexity.

The availability of concentrated energy sets hard limits on what any system can achieve in terms of both its scale and complexity. This is something true of all ecological systems, and human systems are far from immune. A loss in either energy concentration or rate of energy flows will result in decreased societal complexity, either slowly or in catalysing – and potentially catastrophic – events.

Consequently this essay more strongly critiques the unrestrained faith in human creativity and innovation to overcome physical limitations, than the equally doomed faith in digging wealth out of the earth, since the latter, if becoming outdated, at least acknowledges the significance of energy resources.

### ***Faith in Human Brilliance***

Faith in human brilliance to overcome physical limitations is widespread and pervasive in society.

Since the European Enlightenment, the marvel of increasing cultural and technological complexity has created a cultural hubris about human achievements that has displaced the humility of older spiritual traditions about the power and mystery of nature.

For example many social justice and environmental advocates, as well as bureaucrats and diplomats believe the construction of regulations and rules based on negotiation and compromise are the fundamental keys to collective wealth and its wise control. Technologists, educators, and journalists also tend towards the belief that thinking, discussion and debate are the way to solve problems. Economists and business entrepreneurs tend to share this faith in human brilliance and have been much more powerful participants in focusing the tools of science to create real wealth through production and market transactions. While there is obvious merit and some truth in these perspectives, they are incomplete insofar as they ignore the energy base which makes these perspectives possible.



The crown of this great project of Enlightenment thinking to free humanity from the whims of nature, is held by the bankers, masters of the magic force that makes the whole system of industrial modernity function: money. The bankers and their army of workers in the burgeoning financial services, insurance and real estate economies believe the more or less continuous growth in financial value and debts controlled by the magic of the market is the pinnacle of human evolution. Further they exhibit a religious like faith that the energy/environment problem will be solved by the market bringing to life technological and organisational innovation that will circumvent the limits of nature's ability to deliver essential resources and absorb our wastes.

For example, an enquiry into Australia's future fuel security in 2007 saw the head of ABARE, the government economic forecasting unit being challenged about relying on market forces to deal with future energy crises. Famously, he retorted, "if the price of eggs goes high enough, roosters will lay eggs". While he presumably does not believe this to be literally true, he does appear to believe it is metaphorically accurate, and as such it was a breathtaking expression of religious faith in markets to save us, and a very sobering moment for the energetically literate followers of the Senate inquiry.

Our money and markets are the most complex products of this deeply ingrained faith in human brilliance. And just as their foundational beliefs are incomplete, so is their expression extremely dangerous.

### ***The love of money***

The old saying that it is the love of money, rather than money itself, which is the source of evil in the world, is worth repeating. To clarify this ancient wisdom, the love of money (greed) was once acknowledged as the force behind the innovations in money that generate interest, which must be repaid by growth in our extraction of real wealth from nature. It is ironic that ignoring this taboo against interest-bearing money in the Judeo-Christian tradition was one of the drivers that supercharged Western civilisation into the global industrial culture it became. Why is that ironic? Because a decision by the church (to accept interest bearing money) led to its loss of power in the face of rampant materialism?

Beyond the creation of debt-based interest-bearing money, the creation of "fiat" currency is an extreme expression of the love of money. In most societies throughout history the abstraction of money was backed by equivalence in a commodity of recognised and enduring value such as silver or gold. Fiat currency gets its value by order of a powerful sovereign and the collective faith of the populace. Independence from available stocks of commodities has many advantages in complex and growing economies stabilised by strong central power. However, fiat currencies are more vulnerable to systemic greed and corruption by simply printing money along with all the massively complex variants of this process that have kept the US dollar as the defacto global currency all the years since the abandonment of the gold standard.

These complex financial devices and the collective faith which have been the basis of decades of economic growth, also make our economic systems vulnerable to collapse.

An analysis of the global energy situation suggests that a gradual loss of technological



and cultural complexity is inevitable – however a sudden collapse of human civilisation certainly is not. I believe the out of control power of money and markets is leading us more rapidly towards the collapse of human civilisation than the shortcomings and impacts of any specific activity or technology including the burning of fossil fuels.

The feverish activity in the material economy that is damaging our life support systems is first and foremost driven by a dysfunctional debt-based money system that must grow by its own logic, merely to survive.

Our money system requires constant growth to stave off collapse, the mechanisms for which you can read about elsewhere<sup>8</sup>. The monetary system has no neutral gear, no “steady-state” option. A growing money supply requires a corresponding increase in resource extraction, without which we would experience runaway inflation. Thus the “love of money” building on the more fundamental and widespread belief in “human brilliance” has become, not only a source of moral corruption but a super accelerator of environmental collapse.

It is ironic as it is tragic, that our systems of financial accounting (originally intended to give us numeric evaluation of wealth in the real world) have become so disconnected from the real world consequences of values and actions in the virtual world of money. While we may have come to expect this lack of understanding from economists and bankers, awareness of environmental crises does not necessarily imply an energetic literacy, and many environmental activists have failed to grasp the importance of energetic limits to the wider human project in the quest for politically acceptable solutions to the climate dilemma.

Ecological history<sup>9</sup> and ecological economics have provided a growing array of evidence to strengthen the belief that real wealth is a gift from nature. Systems of ecological accounting that provide more concrete and numeric measures of real wealth have been a powerful influence on my understanding of how the world really works.<sup>10</sup> Unfortunately these academic fields of inquiry have remained unfunded and ignored in a world dominated on the one hand by the magic of money and on the other by the latest techno fix that helps accelerate the extraction of more real wealth from nature.

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<sup>8</sup> See Chris Martenson’s Crash Course <http://www.chrismartenson.com/>

<sup>9</sup> The famous American historian Lewis Mumford was one of the founding thinkers in this very enlightening discipline. Apart from Mumford, it was William Crosby’s *Ecological Imperialism: European Expansion 900-1900* that was a big influence on my thinking. The best-known book of ecological history is Jared Diamond’s *Guns, Germs and Steel*.

<sup>10</sup> Within the field of ecological accounting, the seminal work of H.T. Odum laid the foundations for the discipline in the 1960’s and 70’s. I regard his later development of EMErgy accounting as the most powerful but least understood methodology for measuring real wealth in natural and human systems.



## ***Wealth from Nature***

While faith in human brilliance might be to the dominant paradigm, a significant and number of influential people in modern society hold the opposite belief: that wealth comes from nature (in which I include the belief that wealth comes from “holes in the ground”). Because so few people in modern urbanised societies have intimate experience of the ways in which we depend on renewable and non-renewable natural resources, the intuitive basis for these beliefs has been in decline for hundreds of years.

Farmers, forest workers and fishermen along with more self-reliant rural dwellers are natural adherents to this view of the world. Miners and engineers dependent on and responsible for the exploitation of nature’s non-renewable wealth also tend to hold this view for fairly obvious reasons. The military services are another sector of society where this world view remains common. Those who recognise this potent power from nature often conclude that the power of the gun is ultimately what guarantees control, especially of the “holes in the ground” that yield the fantastically concentrated non-renewable energy and resources. Unlike capitalists and socialists, many of those with faith in power from the ground, are less concerned whether the total system is growing, stagnant or declining, but more focused on how to remain on the top of the heap, whatever its size.

Perhaps the darkest aspect of the wealth from nature paradigm, is the widely held conclusion that population growth is the greatest problem facing humanity and that in the absence of self control by humanity, nature will take its course. This belief is often unarticulated, because in a society dominated by faith in human brilliance, open discussion of the population problem is a moral minefield. Those who raise it are often accused of harbouring or giving credence to “final solutions”. This is not the place to discuss the complex nature of the population issue, but views on this issue are a touchstone for this ideological divide about the source of wealth.

The origins of environmental thinking and activism were also strongly based on the belief that humans are ultimately beholden to the same rules that govern the rest of nature, and that human creativity needs to be focused on learning to live according to those rules. Pioneering environmental thinkers who emphasised ecological limits were sometimes associated with the political Right<sup>11</sup> while the modern environmental movement has been more characterised by a faith in human capacity to maintain and equitably spread the benefits of industrial modernity (without its dysfunctional aspects).

As I have pointed out, faith in human brilliance can focus on individual and entrepreneurial capacity (Right) or alternatively, collective and co-operative capacity (Left). Similarly faith in power from nature can lead to the conclusion about “survival of the fittest” (Right) or co-operative sharing of limited resources (Left). The following diagram attempts to integrate this new way of understanding our ideological landscape with the old Left Right divide. The ideological and cultural tags I have placed in the four quadrants are very tentative. Others might wish to

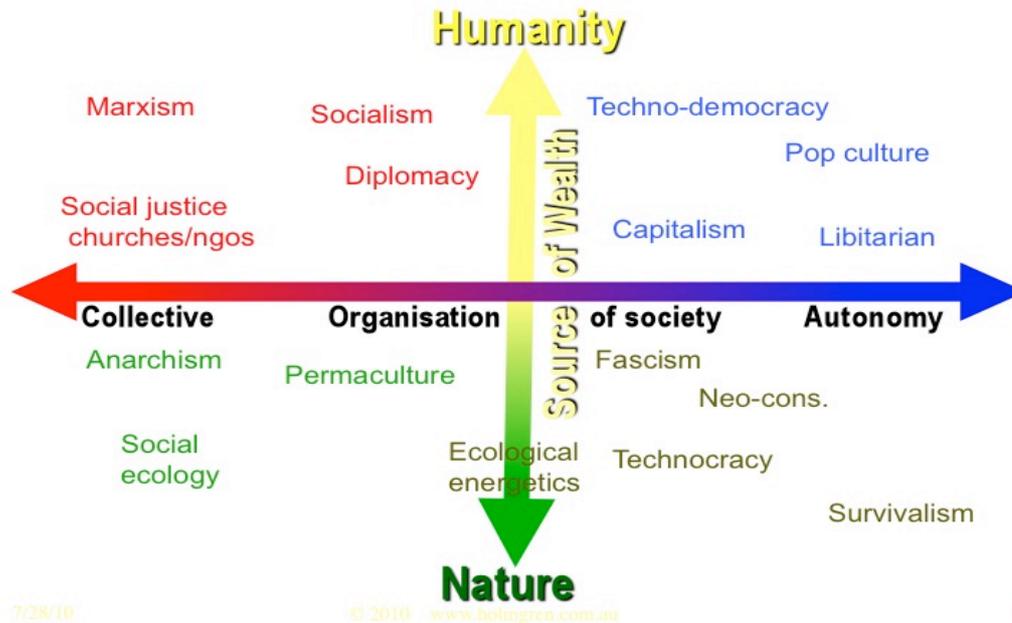
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<sup>11</sup> For example Edward Goldsmith, founding editor of the Ecologist magazine and author of the seminal text *The Way*



debate and/or rearrange my labels. Nevertheless I think this graphical description may help provide some points of connection in exploring our ideological landscape in fresh ways.

### **Money vs Energy combined with Left vs Right politics**



### **Reactions of Money & Energy interests to Peak Oil & Climate Change**

Climate Change exemplifies the limits of nature’s ability to absorb our wastes, whereas Peak Oil exemplifies the limits of nature’s ability to supply human demands.

Awareness of Climate Change by the media and general public is obviously running well ahead of awareness about Peak Oil, but there are interesting differences in this general pattern when we look more closely at those involved in the money and energy industries. Many of those involved in money and markets have begun to rally around Climate Change as an urgent problem that can be turned into another opportunity for economic growth (of a green economy). These same people have tended to resist even using the term Peak Oil, let alone acknowledging its imminent occurrence. Perhaps this denial comes from an intuitive understanding that once markets understand that future growth is not possible, then it’s game over for our fiat system of debt-based money.

Conversely, Peak Oil awareness and activism came out of the energy industries in the first place and continues to be as much associated with hard headed engineers and their ilk than they are with soft hearted greenies and leftists. On the other hand, these same energy realists include a surprising number of Climate Change sceptics. I believe these same tendencies in personal beliefs have influenced the culture and public posture of corporations that dominate the energy and financial industries. These tendencies have probably been a significant factor in Climate Change activists having a more benign attitude to the financial industries than the fossil fuel



industries<sup>12</sup>.

Conversely many Peak Oil analysts and commentators see a relatively bright future for the energy industries with rising prices even if production falls. Some recommend investment in these industries as a hedge against coming hard times. While these views might be controversial within Peak Oil activism over the last decade, a scathing view of the financial industries is not. For at least five years before the 2008 Global Financial Crisis, the unsustainable virtual economies of real estate, banking and derivative markets were a major subject of research, analysis and discussion on internet Peak Oil forums. For example Chris Martenson's Crash Course has been a major source of information and analysis about the financial "house of cards" from Peak Oil and energetically literate perspective.<sup>13</sup>

### ***History of beliefs in energy and money***

To understand how conflict between money and energy in modern society is shaping the climate/energy/economic crisis, we need to explore its historical origins. I believe this exploration using the lens of ecology is part of a larger process by which we begin to tell a new story of human transformation relevant to the energy descent future after fossil fuels.

The ancestry of the first force – the belief that wealth comes from “holes in the ground”, i.e. physical resources we mine from the earth – can be seen in the feudal lords who presided over tracts of fertile farmland and productive forests that were the primary sources of material wealth before fossil fuels. These feudal elites had an intimate knowledge of the estates that were the source of their wealth and power and so maintained a sort of “energetic literacy” even if they regarded the productivity of the land as primarily a gift from god. The successes of European medieval societies based on the limited but renewable resources of the land eventually came up against ecological limits that were expressed through loss of forests, wars between sovereign nations, and disease (the Black Death).

European nation states broke out of the natural limits imposed by their homeland soil and forest resource base through the discovery and colonisation of the Americas. The largely accidental depopulation of the Americas through the “diseases of crowding”<sup>14</sup> the Europeans brought with them, was arguably the most important factor in allowing Spain and Portugal to develop global empires that became the model for the expansion of European civilisation. One other important factor was the high quality timber used to build the ships to allow trans oceanic trade and projection of power on a previously unimaginable scale.<sup>15</sup> Agriculture of new crops on a larger scale by

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<sup>12</sup> An early example was the 1993 Greenpeace International study by Jeremy Leggett of the vulnerability of the insurance industry to climate change that was influential in attempts to woo the insurance industry to use its clout to counter the power of the fossil fuel lobby.

<sup>13</sup> See website <http://www.chrismartenson.com/>

<sup>14</sup> a term used by ecological historians to describe the human diseases such as smallpox, measles and tuberculosis, that developed as a result of the domestication of livestock and closer settlement in villages and towns sustained by agriculture

<sup>15</sup> Shortly after European arrival in the Americas, Havana became the largest



more ruthless and unsustainable methods (slavery and monoculture) provided the ongoing wealth to sustain the resource-intensive metropolitan centres.<sup>16</sup>

This colonial wealth laid the foundations for the later tapping of the ancient sunlight of fossil fuels, most notably in England and Germany that became the centres of the Industrial revolution.

### ***Wealth from Human Ingenuity***

The ancestry of the second force, the belief that “human brilliance” is the source of wealth, can be traced back to the urban intellectuals and merchants of the European Enlightenment who believed that human ingenuity and organisation were the critical forces in wealth creation and control. While wealth from colonised lands provided the material wealth for European expansion, cultural factors associated with religion (the Protestant reformation) and capitalism (sovereign corporations and modern banking) were critical in facilitating the process. Central to this thesis were the ideas of Adam Smith<sup>17</sup> and others who eulogised the “invisible hand” of the market and castigated the medieval guild economies that Smith saw as impeding progress. The guilds regulated their respective trades or professions to maintain traditions and high standards of craft while controlling competition and discouraging radical innovation. The fact that the guild economies were adapted to the steady-state economy of the middle ages has escaped the notice of most of the academic cheerleaders for market-based economies of continuous growth.<sup>18</sup>

Marx is of course the great ideological counterpoint to Smith’s adoration of the role of capital in creating wealth. Marx saw that human labour and cooperative capacity were the undervalued sources of wealth that capitalists exploited to convert natural resources to real wealth. I see Marxism and societies designed on Marxist principles – both mild and radical variants – as simply different expressions of this same tendency to believe that human labour, creativity and organization are the sources of wealth.

This faith in “human brilliance” in both its capitalist and socialist forms must be acknowledged as drivers of the growth in European economic power and organisational complexity that overpowered the older land-based feudal power.

### ***Fossil fuelled industrial wealth***

However, the belief that wealth came from the land, had been powerfully reinforced by the process of the colonisation of new foreign lands. As exploitation of the traditional sources of wealth from the land (and the seas) reached its zenith in the 18<sup>th</sup> and 19<sup>th</sup> centuries, technological advancement allowed European civilisation to

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ship building port in the Spanish world.

<sup>16</sup> It can be argued that it was the plundered gold and silver from the Aztec and Inca empires that first stabilised the faltering money systems of Spain and Portugal but without more basic food and fibre wealth from the soil, this gold and silver would have led to an inflationary collapse.

<sup>17</sup> Smith, A. *The Wealth of Nations*

<sup>18</sup> See essay by J.M. Greer *How Relocalisation Worked* at Energy Bulletin  
<http://www.energybulletin.net/50750>



further accelerate its growth by tapping the ancient sunlight trapped in fossil fuels. This power from “holes in the ground” was the energy that drove the industrial revolution that in turn underpinned the massive and ongoing growth in human numbers<sup>19</sup> and the transformation of society and nature. The study of economic and ecological history suggests the fate of nations and empires tends to be determined by these factors, and that a study of oil during the 20th century provides as many insights into the forces and the outcomes as a study of competing ideologies of Capitalism, Fascism and Marxism.

This history can be seen as a pulsing dynamic between periods of relative peace and stability dominated by markets and money, and shorter periods of conflict dominated by changes in control of the “holes in the ground”.<sup>21</sup> But it is also true that these two tendencies have been complementary in maximizing the power of western industrial civilization and its transformation into a global system that has enveloped every tradition and culture over the last two hundred years. The US political system post-WWII represented a strong synergy between these two tendencies. Money from industrial and oil exports were reinvested, leveraged and loaned to make the US the world's largest creditor economy and the centre of global finance. This synergy began to break down after US oil production peaked in 1970, although awareness of this fact was not widely acknowledged for another decade and its significance in shaping geopolitics is still not widely appreciated.

### ***Conflict between Money and Energy***

My focus here is on the growing conflict between these two tendencies as the contradictions inherent in global industrial culture intensify. These conflicts often express themselves through the positions taken by the more concrete constructs of industrial culture such as nation states, political parties, corporations, international institutions and NGOs in our immediate world.

In 1971 President Nixon abandoned the gold reserve backing of the US dollar that had maintained its status as the de facto global currency. Economists have typically interpreted this action as a necessary pragmatic adjustment of money systems. However, it was also implicitly understood by many people that the gold reserve was unnecessary because US oil production was the strength behind the US dollar. With the advantage of hindsight, the cancelling of the gold reserve backing can now be understood to coincide with the peak and permanent decline of the USA as the world's largest oil producer. Consequently the US dollar was now a “fiat” currency back by sovereign power and collective faith, rather than a “commodity” currency backed by material wealth.

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<sup>19</sup> This is an understatement because it has been calculated that half of the protein in the human biomass was created using nitrogen from the Haber Bosch process that uses vast quantities of fossil fuel to create nitrogen fertilisers that in turn allowed increased food production to grow the human biomass to over 6 billion bodies.

<sup>21</sup> Comedian Robert Newman's brilliant “A Short History of Oil” ([http://www.movieberry.com/robert\\_newman\\_s\\_history\\_of\\_oil/](http://www.movieberry.com/robert_newman_s_history_of_oil/)) shines an entertaining light on the economic basis of war through the 20<sup>th</sup> century, including the most recent invasion of Iraq by western powers and the connection to the coming end of the age of oil.



The rise of OPEC, and in particular Saudi Arabia, as global “swing producer”<sup>22</sup>, was a fundamental challenge to the faltering economies and money systems of the western powers during the 1970’s. The actions of OPEC that precipitated the 1973 and 1979 energy shocks can be interpreted as premature attempts by the forces of energetic realism to get the upper hand over the masters of money, that were not repeated until the resource nationalism of recent years.

### ***Economic Rationalism***

During the 1980’s and 1990’s the slippery power of money played a powerful role in putting the sovereign nations with “holes in the ground” back in their place. Firstly the recycling of petrodollars through the World Bank funded third world resource development projects that further flooded the global commodity markets with cheap resources and increased the wealth of the consuming countries through debt repayments from poor countries that has continued every year since 1983.

At the same time the economic rationalism of the Thatcherite/Reaganite revolution of the early 1980’s recharged the Anglo-American economies for another thirty years of debt-based consumption at the expense of contracting social capital. As global corporations moved industrial production to developing countries with cheap labour, new service economies developed in the West to maintain the illusion of perpetual growth. Real estate, insurance, investment, and finance “industries” expanded employment and notional wealth. Women joined the workforce to help pay rising mortgage debts and support expanding personal consumption habits. The almost total collapse of the household economy<sup>23</sup> followed. Much of the growth in fast food, home services, child care and entertainment industries simply reflected this shift of activity from non-monetary household self-reliance to the formal taxable economies dominated by corporations. Mounting psychosocial dysfunction expanded the need for the helping professions of health, social welfare and education as well as those of control from police and security services to deal with addiction, family violence and social fragmentation, both real and imagined.

The IT revolution was the key factor in the final push towards a full spectrum globalised economy dominated by corporations, but it was the ballooning virtual economies of finance and investment services that benefited most from the IT

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<sup>22</sup> A swing producer has large enough spare capacity and economic clout to turn on and off the taps to regulate the price of oil to prevent it fluctuating so wildly as to prevent steady economic growth powered by oil. The first global swing producer was Standard Oil controlled by Rockefeller but after the anti-trust legislation led to the breaking up of Standard Oil into the “Seven Sisters”(1911), the role of swing producer fell to a quasi-government body: the East Texas Railroad Commission that controlled the transport of oil from the then-largest field in the USA.

<sup>23</sup> The “household economy” that used to grow, preserve and prepare food, maintain health, educate and raise children as well as a myriad of other essential functions, has been in more or less continuous decline since the Industrial revolution. In the household and community economies relationships provide the glue that maintains the economy and mediates transactions that in the formal economy are lubricated by money.



revolution. While much was made of the individual and social network empowerment potential that eventually emerged after the turn of the millennium, vastly more IT capacity is taken up by porn than is used by wikipedia, and the breakdown of communities of place and isolation of individuals most likely exceeds the gains from the extraordinary but fragile network communities made possible by the internet. All of these processes expanded the power of money at the expense of awareness of the role of energy in feeding the machine of economic growth.

### ***The hidden role of energy***

Several critical factors on the energy side underpinned the continued growth and power of capitalism. Firstly the flows of oil and gas from new supergiant fields in the North Sea and Alaskan North Slope helped to keep energy prices low in the 1980's and reduce British and US dependence on foreign production.

The collapse of the Soviet Union at the end of the 1980's was typically portrayed in the West as the triumph of free market capitalism over centrally planned socialist economies. Peak Oil researchers have since pointed to the peak of Soviet oil production and exports, combined with low energy prices, as perhaps the more fundamental cause of the dramatic implosion of the Soviet empire. Even the military overreach in Afghanistan during the 1980's can be understood as a failed attempt to hold back the forces of pan-Islamic fundamentalism from contaminating the Soviet republics of Central Asia, which were the greatest hope for expanded Soviet oil and gas production.

It is clear enough that the dominance of the West over OPEC, Russia and the Central Asian republics reinforced the faith in the power of markets over crude resources from holes in the ground. In the 1990s analysis<sup>24</sup> suggesting resource rich countries were more likely to have dysfunctional economies, corrupt governments and conflict than resource poor countries, was perversely interpreted as showing how marginal these resources were to the human progress. The alternative explanation, that this pattern reflected the hegemonic control of an oppressive geopolitical order by the resource consuming countries, was less widely acknowledged. Both interpretations reinforced faith in the power of human creativity and money over resource wealth. This is part of a collective mythology of modernism, that wit and cunning (of the city trader) always outsmarts honest hard work (of the farmer).

### ***Peak Oil and Resource Nationalism***

The turn of the millennium saw new factors at work. Rising oil prices, increased gas production and dependence of European countries on Russian gas has provided a strong base for resurgent Russian economic and political power. Under Putin plundering of Russian resources by the oligarchs to feed the West was replaced by a resurgent Russian nationalism<sup>25</sup> that shocked western corporations and media.

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<sup>24</sup> Auty, Richard M. (1993). *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London: Routledge

<sup>25</sup> The rising economic and geopolitical power of energy exporters such Russia, Brazil and even Australia can be attributed to collapse of the thirty year "buyers market"



In the US, the Bush administration, controlled by oil men and military strategists, sidelined the diplomats and the bankers that held sway during the Clinton years with a renewed focus on control of the oil resources of the Middle East and the gas resources of Central Asia.

9/11 provided the green light to shock western democracies from their slothful assumption about resource security through total war<sup>27</sup>. Judging by their actions, and various statements, it seems likely that many key advisors and actors in the Bush administration<sup>28</sup> were better informed about the parlous prospects for global oil and gas production in the coming decades than the most gloomy and best informed of Peak Oil researchers and communicators to whom I was paying attention in the late 1990's.

But to portray the Bush administration as just representing the forces of energetic realism would be false, because domestically, the “Mandarins” of Treasury and the Federal Reserve were freed to blow the most spectacular bubble economy in history. These masters of money created castles in the air of unprecedented proportions based on real estate speculation and consumption debt. The partial collapse of this bubble economy can be seen as the most important factor in the demise of Bush administration, rather than the loss of civil rights, or abuse of international law in pursuit of its fantastic “war on terror”. The timing of the collapse of the bubble economy acted to distract the media and the public from the likely concurrent peak of global oil production, and the contribution of oil (and other resource) price spikes to the global recession.

This was especially so because the November 2008 report by the International Energy Agency<sup>29</sup> made clear that the world was already in the early stages of another energy crisis due to supply problems (without actually mentioning Peak Oil). It used a new bottom up evaluation of global oil supplies which had long been flagged by Fatih Birol, the head economist of the IEA as likely to derail “business as usual” planning by governments. Ahead of its release, most Peak Oil researchers had been assuming this would be the case, but media preoccupation with the global financial crisis allowed governments to continue in a state of denial about the global energy supply crisis.

### ***New hope from old pattern***

The Obama administration can be seen as bringing to power a lot more players who

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where whoever held up the most dollars got the resources. Contracting supply and higher prices give sovereign governments the capacity to set the terms of trade, or in fact ban exports to ensure home markets are serviced first.

<sup>27</sup> Using the “war on terror” as a classic cover for a policy that was too shocking to Enlightenment sensibilities to be openly promoted.

<sup>28</sup> Dick Cheney speech? <http://www.energybulletin.net/node/559>

<sup>29</sup> set up by the oil importing nations after the OPEC embargos of the '70's to provide transparent information about energy resources.



represent the power of human ingenuity over the hard limits of nature. Many environmental and community activists have had cause to celebrate these changes, including the appointment of more men and women from the scientific community to positions of power and influence, but it is interesting that the sweeping changes did not include removal of those directly responsible for the bubble economy and resulting financial crisis. In fact, an army of reinforcements from Goldman Sachs came into the Obama administration to oversee one of the greatest transfers of wealth and power from the public, and smaller players in the financial system, to the biggest. Just as the Bush administration can be seen as the vehicle for a coup by the forces of ‘oil and guns’, I saw the Obama administration as being the vehicle for a counter coup by the ‘masters of money’.

To shift focus from the US to the Middle East, Dubai has generated fabulous wealth from urban real estate built out of the desert sands (and icon shaped artificial islands from the Persian Gulf) to create a sort of Disneyland on steroids, mostly in less than a decade. But the global financial crisis threatened a sovereign debt default of this house of real estate cards. Of course Abu Dhabi, the largest of the seven emirates that makes up that very rich middle east nation state United Arab Emirates, provided the bail out, based on its oil reserves and production.<sup>32</sup> We don’t know the behind-the-scenes trading but we can speculate that the bailout represents a win for the forces of oil over those of money.

In Australian politics we can see the same forces struggling for control of this country. I suspect that our recently deposed Prime Minister, Kevin Rudd, as a diplomat and bureaucrat, has a deep and abiding faith in human capacity to create a future of our choosing and was largely beholden to the “masters of money” to achieve this. In relation to climate change his faith that markets will deliver the solution is in line with what was (before Copenhagen) an emerging consensus in western powers. The social justice agenda for “cap and share”<sup>33</sup> policies that would ameliorate some of the structural injustices of the dominant “cap and trade” models was never likely to get much of a hearing by the government because it would put both the miners and the bankers off side. Rudd’s last fatal act was attempting to ram through the mining super profits tax to indirectly pay for much greater employer contributions to superannuation. This action can be understood as an attempt to transfer wealth (and therefore power) from the miners to the bankers.

But as previous Prime Minister John Howard so truthfully said in 2003, Australia is one of the emerging energy superpowers.<sup>34</sup> Within the current government the Minister for Resources and Energy, Martin Ferguson, represents the power from “holes in the ground”. Climate activists and lobbyists are well aware of the power of the coal industry and others in preventing the Labour government from forging ahead

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<sup>32</sup> UAE’s official proven oil reserves are the 6<sup>th</sup> largest in the world but Abu Dhabi holds over 90% of the total with Dubai less than 5%.

<sup>33</sup> Where carbon credits are distributed to the population nationally and globally while corporations and governments have to buy them on the market. See Cap and Share website <http://www.capandshare.org/index.html>

<sup>34</sup> Based on its rank as the largest exporter of coal in the world, not to mention our rapidly rising natural gas exports, uranium, iron ore, non ferrous metal, rare earths and other non-renewable sources of wealth



with the shift to a non-carbon economy using market mechanisms.

In the Liberal Party the struggle between the power of energy and the power of money has been just as dramatic with the deposing of opposition leader Malcolm Turnbull, banker turned politician, with direct connections to Goldman Sachs<sup>35</sup>. I am not suggesting that Turnbull is not genuinely concerned about Climate Change, but there is no doubt that he represented the forces that stand to gain the most from the explosive growth in the carbon trading market.<sup>37</sup> The new leader of the opposition Tony Abbot and his former finance spokesperson Barnaby Joyce<sup>38</sup> thought they might be on a winner with the public in lambasting the masters of money as the main beneficiaries from carbon trading: a great coup for the coal industry and others allied to power from “holes in the ground”.

Which ever party wins the forthcoming election in Australia it seems the next government will be more beholden to the power of the miners.

### ***Carbon Trading***

The debate over the need to decarbonise the global economy sees scientists, environmental and social activists assuming a natural coalition with the masters of money. Is this necessary political pragmatism to achieve a larger good, or a foolhardy alliance with a wounded wild animal in the hope that the beast will provide protection from the fossil fuel industry demons?

If we accept the idea that, in principle, we need to cap the emissions of carbon and reduce them dramatically over time, then the key issues are how to allocate rights to emit and how they might be traded to reflect varying abilities to reduce emissions. The “cap and share” model favoured by social justice advocates would distribute the rights to carbon to the people, which would require massive reductions in rich countries while the poorest could actually increase theirs over time.

The “cap and trade” approach favoured by the most powerful governments would distribute carbon emission credits to the corporations on behalf of the people. From the bankers’ point of view, the corporations can be relied on to act rationally, leading to an optimal and fast allocation of carbon credits that would develop and implement low carbon technologies in an efficient manner. People, on the other hand, could not be relied upon to act rationally and the massively distributed nature of carbon credits would make it harder for bankers to control and take cream off the trading of those credits.

But without any reform of the financial systems, let alone punishment of those responsible for the dot com and housing bubble economies in the US and elsewhere, what is the likely outcome from the explosive growth in a market further confused by

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<sup>35</sup> Goldman Sachs is positioning itself to be the biggest carbon trader in the world.

<sup>37</sup> The global carbon market was already \$126 billion in 2008 up 12 fold from 2005 but growth has slowed dramatically in the absence of a global agreement in Copenhagen.

<sup>38</sup> See commentary by Joyce at The Drum ABC website

<http://www.abc.net.au/unleashed/stories/s2762866.htm>



the fact that it is trading a colourless and odourless gas that is an “environmental bad” (rather than a “good” or “service”)? While acknowledging the alluring logic that market mechanisms could theoretically play in bringing us back from the climatic and energetic abyss, I think it is sadly naïve of those scientists, environmentalists and others to believe that global carbon trading will, in itself, achieve anything of use.

I am not so much concerned with the moral obscenity of super rich bankers taking a huge cut from the inevitably complex transactions involved, but that rather than generating real reductions in resource depletion and environmental impact, the system will be corrupted with multiple parties believing they hold the assets associated with the market. The saying “a licence to print money” would be literally true, in which the bankers shuffle assets that are virtual negatives of the “bad” (carbon emissions) that can only be imputed by complex accounting underpinned by equally complicated carbon emission and capture measuring systems (that would be a sitting duck for corruption).

The European carbon trading system that has been working for many years has totally failed to provide real reductions in greenhouse gas emission.

As we move into the unfolding climate/energy/economic crisis, the ability for transparent public evaluation of carbon trading will evaporate as quickly as carbon dioxide can leak from geo-sequestration or fragile soil and forest systems.

### ***Renewable Energy Credits debacle***

The following few paragraphs about the debacle with the system of Renewable Energy Credits (RECs) may be primarily of interest to Australian readers, but provides a taste of how carbon trading will inevitably lead to corruption and deception.

The sale of REC's by owners of roof mounted PV systems has in recent years helped electricity corporations meet the government's mandated targets for renewable energy. The market for REC's confirmed the energy companies as owners of the renewable energy capacity while the owners of the PV roof system still believed they were the moral and actual owners of the renewable energy. The fact that both parties believed they owned the asset was deceptive, but it didn't matter because one party owned the legal and financial rights while the other was happy thinking about the moral and emotional rights they still held.

The uptake by citizens wanting to do their bit for climate change caught both the Howard and Rudd governments off guard, leading the minister Peter Garrett to cancel the scheme, throwing the emerging PV energy sector into disarray. The cobbled-together substitute involved allocating four additional RECs for each real one covered by the actual megawatt capacity.<sup>39</sup> These phantom RECs, or more correctly counterfeit RECs, provided a classic case of inflation that reduced the value of existing RECs. The financial planning (and in some cases viability) of large scale

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<sup>39</sup> See ATA website article explaining the problem

<http://www.ata.org.au/news/impact-of-phantom-recs-under-estimated-solar-homes-make-major-contribution>



wind and other renewable energy schemes, depended on their generated REC's being worth at least \$50 per megawatt. Consequently many were stalled awaiting government rescue. That bureaucrats could propose, and politicians implement, such a blatantly dysfunctional theft of existing assets, in a relatively simple and concrete market for renewable energy production, does not bode well for how a global trading system of virtual 'bads' in carbon would work. Offsets in forgone rainforest clearing, to compensate for business as usual carbon consumption and pollution in affluent countries, is one of the certain outcomes. It's the ones we can't yet imagine that really worry me.

Copenhagen should be interpreted as a failed attempt to convince the bickering sovereign nations to agree to new rules that would allow the masters of money to create the largest market in human history, in hope that this would save us from climatic meltdown. The spoiling action of the fossil fuel industries succeeded so the bankers' plan is on the back burner. The latest moves by the Obama administration to attack the worst excesses of Goldman Sachs in creating financial products designed to fail, is further evidence that tide may be turning against the masters of money.

### ***The Latest Political Shocks***

So can the latest machinations in Australian politics that have led to the demise of Kevin Rudd in favour of his deputy, Julia Gillard be understood using this model. I think there is obviously some truth in the conventional analysis that this was a move in the now presidential style of Australian politics to have the leader most likely to get the government re-elected. But the furore from the mining industry over the new proposed excess profits tax to fund superannuation can be understood as a play by the forces of money to hit back at the energy industries after the failure of the CPRS. In this context Rudd's replacement with Gillard appears to be another win for the energy interests.

### ***Permaculture: harmonising energetic realism & design creativity***

While my analysis of the more basic forces at work behind the current political machinations may be interesting, my purpose is not simply armchair analysis. The love of money and greed for energy are both monstrous cancers of our culture. We need to better understand both so we can predict their moves, and plan our own actions for resilient transition into a new culture not beholden to fossil energy or money. The idea that we have to choose between allying ourselves with either of the dangerous wounded monsters is a false choice.

My aim is to empower environmental activists, social entrepreneurs and humble householders to be most effective in three simultaneous domains of action.

1. Help their families survive and thrive through turbulent times
2. Contribute to a better society than would otherwise have been the case
3. Contribute to the preservation and development of skills that will be useful to future generations grappling with the realities of energy descent.



I see permaculture, especially when it is understood through its ethics and design principles, as providing a framework for creating that culture, based on the regenerated cycles of nature. Anyone who is familiar with permaculture ethics, design principles and strategies will understand that my equal rejection of the respective power from fossil energy and money does not indicate that I see no useful core of truth in these primal tendencies driving our waning global industrial culture.

In using the term “energetic realism” to describe one of these forces, I am acknowledging the living and non-living elements of Gaia as the foundation for any human wealth. Through my teaching of permaculture, I have always emphasised that fossil fuels are not bad, but a gift from nature, that we have wasted. Permaculture earthworks designs make use of the raw power of fossil fuelled machines to shape the land in ways that allow us to enhance the biological productivity of landscapes. We have the unique opportunity to use that fossil fuel to create those structures that future generations will be able to maintain (by hand if necessary).

In using the term “human brilliance” to describe the creativity that includes concepts as complex as money, I acknowledge human creativity and flexibility to adapt to changing circumstance is the best asset we have. While we do not have the power to rewrite the laws of thermodynamics that limit and shape human realities, we do have a remarkable capacity to reshape our individual and collective conception of reality in ways that facilitate rather than hinder cultural evolution. Money is simply a collective mental construct that we can redesign from first principles to reflect energetic realities and ethical values.

Permaculture strategies for creating household and community economies using gift, barter and simple non-interest bearing local currencies, are examples of how we can design new forms of money to allow appropriate exchange of goods and services in resilient and relocalised economies that will grow at the margins abandoned by the dinosaurs of the declining global industrial culture.

Let’s not waste our effort or emotions on hoping that either of the dinosaurs will save us; rather, let us get on with our tasks while we keep an eagle eye open for any threats from both fossil energy and money.