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Can the Financialised Atmosphere be Effectively Regulated and Accounted for?

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Can the Financialised Atmosphere be Effectively Regulated and Accounted for?

Abstract

Purpose - A critical analysis of the proposed Australian emissions trading scheme (ETS) as a complex market solution to reduce greenhouse gases (GHGs). Specifically we examine the financial regulatory infrastructure that will more than likely oversee the Australian ETS, the same regulatory infrastructure which failed to prevent the global financial crisis.

Design/methodology/approach - A critical examination of the financialisation of the atmosphere that follows the growth of the financialisation of capitalism when economic activity shifted from production and service sectors to finance. Financialisation of capitalism is supported by capitalist regulation influenced by neo-liberal doctrines of free markets and small government.

Findings – Trillions of dollars of taxpayer funds bailed out large financial institutions that nearly collapsed after unregulated trading in complex financial products that were supposed to hedge future risk. Corporate emissions trading will involve similar financial products. The measurement and reporting of actual emissions to support the Australian ETS also creates challenges for the accountancy profession to provide a workable conceptual framework.

Practical implications - If the current financial infrastructure required for the GHG emissions trading scheme is flawed as evidence indicates, no amount of taxpayer funded bailouts will reverse the extreme climate change associated with an environmental catastrophe.

Originality/value – The application of financialisation of monopoly capitalism and capitalist regulation theories to the critical analysis of commoditised GHGs traded as financial products in the proposed Australian ETS.

Keywords – climate change, financialisation of atmosphere, capitalist regulation, accounting

Paper Type – Conceptual

1. Introduction

This paper undertakes a critical analysis of the proposed Australian emissions trading scheme, which is a complex market solution to global warming. A large body of scientific evidence indicates that global warming from human induced greenhouse gas (GHG) emissions is producing harmful climate change that will lead to global environmental and economic catastrophe within 10 years (Stern, 2006; InterGovernmental Panel on Climate Change, 2007; Garnaut, February 2008). The threat of human induced global warming has been on the international and public policy agenda for several years; on 11 December 1998, Government representatives of 108 countries signed the *United Nations Framework Convention on Climate Change* (UNFCCC) an international agreement to reduce global warming or the Kyoto Protocol¹.

The Australian and United States (U.S.) Governments declined to ratify this agreement (United Nations, 1998). International action on GHG emissions reduction was further thwarted by these Governments, as both the Australian and U.S. Governments were led by neo-liberal politicians who refused “to confront the consequences of climate change or to do anything meaningful about reducing the industrial emissions that contribute to it” (The New York Times, 2004; also see Braun, 2009 for insights about political and corporate machinations that influenced the Kyoto Protocol).

The then Australian Government (1996-2007) was slow to act, receiving surreptitious funding from vested fossil fuel interests (Pearse, 2007)², even though scientific evidence reported that Australia had started to experience the detrimental effects of

global warming (Preston and Jones, 2006). Their research further predicted that climate change would reduce rainfall in Australia's agriculturally rich south east, increasing drought and intensifying bushfires, thus reducing agricultural export production. The UNESCO protected Great Barrier Reef had also begun to suffer more incidences of coral bleaching, killing the coral and associated sea life, which will potentially devastate the tourism and fishing industries. Extreme weather will also wreak more havoc as intense cyclones and flooding affect northern Australia and droughts intensify in the south.

To fulfil an electoral promise, the centre left Australian Labor Party (ALP) Government led by Kevin Rudd signed the Kyoto Protocol on 3 December 2007, and ratified it on 11 March 2008. To deal with the global warming crises, the ALP proposed the CPRS (Australian Government: Department of Climate Change, April 2009) as "the centrepiece of a domestic mitigation strategy" (Garnaut, February 2008, p. 5). The proposed scheme is a cap and trade market mechanism initiated by the state that purportedly encourages corporate businesses to operate more efficiently, thus reducing GHG emissions through price signalling (Garnaut, September 2008; Mackenzie, 2009).

The idea of this market oriented solution to climate change is underpinned by the efficient market hypothesis (EMH) that claims markets are extremely efficient at reflecting information rapidly and accurately to aid investment decisions (Fama, 1970). The EMH "formed the basis of economic policy for the decades since financial deregulation in the 1970s and 1980s" based on the market infallibility and inevitable privatisation (Quiggan, 2010). Since the near collapse of the international credit

markets and subsequent global financial crisis, the idea of ‘perfect markets’ underpinned by the ‘EMH’ has suffered a lack of credibility, however the concept is still central to public policy in many countries including Australia.

For example, Nobel Laureate Myron Scholes (of Long-Term Capital Management (LTCM) hedge fund infamy³) has stressed the danger of underestimated risk that can dry up liquid markets faster than anticipated (Ryder, 2009). Edwards (1999, p. 199) investigated the near collapse of LTCM stating that

“Presumably, LTCM was able to borrow such large amounts and enter into such large swaps contracts with so many parties, who could be owed a lot of money by LTCM if yield spreads were to change significantly, because of its sterling track record of returns over four years and because of the nearly unequaled reputation of its general partners, which among the 16 general partners included John Meriwether, formerly head of bond trading at Salomon Brothers; David Mullins, the former vice chairman of the Federal Reserve Board; Myron Scholes and Robert Merton, who both won Nobel prizes for their work in the pricing of financial instruments; and a host of star fixed-income traders who formerly worked at Salomon Brothers.”

LTCM hedge fund had to be rescued by the New York Federal Reserve because its derivative contracts of \$1trillion exposed several high profile banks and stock broking firms to potential bankruptcy, after the Russian banks defaulted in September 1998. Edwards (1999) also pointed out the moral hazard of similar scenarios where taxpayer funds would be expected to rescue financial institutions from catastrophic financial engineering failure. Akeroff and Romer (1993) called this looting and a form of economic underworld bankruptcy for profit.

This paper therefore critically examines the integrity of using current financial and reporting regulation that will oversee and monitor the veracity of the commoditised carbon financial products, particularly since the global financial crisis (GFC) has

exposed a flawed financial regulatory structure (Lohman, 2009; Foster, 2010). The financialised atmosphere characterised by emissions trading schemes (ETS) that are currently overseen by the same institutional framework shaped by capitalist regulation (Windsor and Warming-Rasmussen, 2009), which failed to prevent the GFC. The GFC has affected the more vulnerable in society, as ordinary people (mainly waged workers and small businesses) suffer economic and social harm. This has fermented social unrest in several countries (Foster, 2010; the International Labour Organization's World of Work Report 2010).

The reasons underlying the GFC have not yet been thoroughly investigated (Labaton, 2008; Rose, 2010). The flawed incentives of financial industry executives and the inadequate regulation of the financial system, including financial 'innovations', were allowed to flourish, buoyed by the ideological belief that the markets are self-adjusting and the role of Government should be minimal (Stiglitz, 2009). Loathed by the deregulators, Government intervention ironically rescued the 'too big to fail' financial institutions using trillions of dollars of taxpayers' funds; thus saving the flawed financial system and its generously remunerated executives. Instead political leaders have been advised by multilateral lenders such as the International Monetary Fund to introduce economic austerity measures resulting in large job losses and precarious employment, which in turn reduces ordinary people's standard of living as they struggle to pay their living expenses (see the International Labour Organization's World of Work Report 2010).

The World Bank (2009) is proceeding with the global carbon market supported by carbon finance, even though the global financial system's flawed regulation,

particularly the trading of financial instruments, has not been addressed (Krugman, 2010). World Bank's report 'State and Trends of Carbon Market 2011' (Linacre, Kossoy and Ambrosi, 2011) stated that after five consecutive years of growth the total value of global carbon markets is \$US142 billion, but is stagnating since international regulation remains uncertain; however national and local initiatives could collectively fill the international regulatory gap. For example,

“During 2010, the Australian government announced plans for a carbon price mechanism with a three-to-five-year annually increasing fixed-price period that will transition into an emissions trading scheme. The government will start pricing carbon on July 1, 2012, subject to negotiating an agreement with a majority in both houses of Parliament and passing legislation this year”. (Linacre et al., 2011 p. 22)

Moreover, the World Bank is promoting the investment opportunities that will benefit bankers and financiers as reported on their website:

According to UNFCCC, about 85% of the financing needed to tackle climate change must come from the private sector. The World Bank's private sector arm, the International Finance Corporation's (IFC) experience shows that climate-friendly investments in emerging markets are real opportunities for private companies, financiers and institutional investors. (www.carbonfinance.org).

Further,

“If we want to see substantial greenhouse gas emission reductions post 2012, we need to use ground-breaking financial instruments to combat climate change”, says Katherine Sierra, Vice-President for Sustainable Development at the World Bank (The World Bank News Release, 2009).

We contend that the notion of using these 'ground-breaking' financial instruments to combat climate change is an oxymoron, when the trade in these instruments does little to address the real problem that underlies global warming. The expansion of economic and unsustainable industrial growth at any cost (Unruh, 2000, 2002; Gray, 2010), fostered by extravagant but alienated consumerism mostly devoid of environmental and social repercussions has much to answer for. No amount of taxpayer funded bailouts will reverse the catastrophes of extreme climate change and

subsequent environmental meltdown (Jackson, 2009) if the financialised atmosphere is regulated by the current flawed financial infrastructure. This flawed financial structure is built on a delusion of market supremacy that failed to regulate ‘innovative’ financial instruments and ended in the near collapse of the financial system (Stiglitz, 2009).

“In fact, the planetary ecological crisis suggests that capitalist civilization may be generating a terminal crisis for the entire anthropocene era in earth history, which would inevitably spell, not only the demise of capitalism, but—if we do not change course—civilization as a whole.” (Foster, 2010, p.10)

2. The Financialisation of the Atmosphere

We critically examine the globalised financialisation of the atmosphere characterised by commoditised emissions, denoted as permits to be traded in a primary market, such as an emissions cap and trade scheme.

“The principle of the cap-and-trade market mechanism is the same. Participants are allocated a certain quantity of emission allowances in accordance with their historical emissions less a specified reduction commitment. Each emission allowance entitles the party in question to emit one tonne of carbon dioxide (or one tonne of CO₂ equivalent as in the Kyoto Protocol) within a specified period. At the end of this obligation period, the party must demonstrate that the extent of its emissions are covered by its emission allowances. Governments or companies may acquire additional emission allowances either by purchasing them from other market participants or by carrying over any remaining credit from one obligation period to the next. Those which emit more than their allowance have to make up the shortfall by acquiring the necessary allowances from other market participants” (Braun, 2009, p. 470).

Underlying the trade in GHG permits are financial products (derivatives, swaps and options) traded in secondary markets such as the (currently) opaque and deregulated commodities markets. The Australian Government strongly advocates a market oriented international emissions trading scheme post-Kyoto Protocol, including the globalised trade in financial products (Combe, 2010; Wilson, 2009). The notion of an emissions cap and trade scheme stems from an earlier, but much smaller, scheme set

up by U.S. Government in the 1990's, where a market for pollution was established by the U.S. Government's Environmental Protection Agency (EPA). Pollution allowances relating to sulphur dioxide (SO₂) emissions were issued to power utilities aiming to reduce overall emissions to 50% of 1980 levels and alleviate acid rain's perceived threat to eco-systems. Wambsganss and Sanford (1996, p. 644) argued that:

“Using the market mechanism is a departure from traditional pollution legislation with past legislation emphasizing pollution control procedures and processes instead of focusing on the control of emissions. The market mechanism determines needed uses of technology and the viability of projects, with decisions including a ‘market cost’ of pollution. ... As more emission allowances are needed by sulphur dioxide sources, these allowances may well become a precious commodity.”

In essence, the U.S. Government transformed power utilities' dirty coal-fired pollution from an environmental problem, under the control of society through democratic accountable institutions, to an economic opportunity in the hands of managers, whose actions are largely hidden behind the corporate veil for the benefit of shareholders. Moreover, Gibson (1996) argued that by trying to reduce harmful industrial pollution through “an economic blunt instrument, we are working within a false paradigm that the environment is a part of the economy, when in fact the reverse is true” (Gibson, 1996, p. 655-6).

Milne (1996) maintains that the EPA gifted the majority of the annually distributed permits to coal fired utilities during the program's phase one (6 million permits) beginning in 1995 for large polluters and phase two (9 million permits) from 2000 for smaller polluters, but only a miniscule percent of these permits would be traded. Wambsganss and Sanford (1996) proposed that these gifted pollution permits be treated as the assets of the utilities. Milne (1996) pointed out this gives heavy polluters and their shareholders a huge public subsidy, thus sacrificing society's right

to clean air for electricity production that “relies on an unacceptably narrow assumption that utilities and their shareholders own rights to pollute and that economic efficiency should be the sole arbiter in determining the regulation of environmental resources” (Milne, 1996, p. 681).

This early cap and trade scheme was hailed as a success by some. McKenzie (2009), however, suggests sulphur reduction was aided by the unanticipated cost-effective technology such as scrubbers, as well as deregulated rail reduced costs to transport low sulphur coal to the Appalachian power utilities (see also Nordhaust and Shellenberger, 2008). This scheme was the template for larger carbon cap and trade schemes such as the European Union Emissions Trading Scheme (EU ETS). Braun (2009) points out that the EU ETS policy development was influenced by elite but powerful policy entrepreneurs who networked with expert consultants, environmental NGOs, individual corporations such as BP Oil and business associations to gain specialized knowledge about the impacts of various design features of emissions trading. Consequently the EU ETS has suffered from too many permits gifted to the big polluters, a massive increase in fraud, the dumping of surplus emissions permits by industry and increased financial speculation (see Reyes, 2010).

The World Bank’s environmental department reported in 2011 that criminal activities were directed against EU ETS through framework loopholes. In addition to the “carousel” value-added tax (VAT) fraud that surfaced in 2009, the sale of recycled certified emissions reduction permits (CERs), phishing attempts on Germany’s national registries as well as a series of subsequent cyber thefts have undermined the

European market highlighting security shortcomings and increasing the urgency of stakeholders' requests to strengthen infrastructure (Linacre et al., 2011).

Morris and Worthington (2010), in their report about the performance of the EU ETS, state:

“In 2009, the effects of the recession encouraged participating power and industrial installations to begin selling off their credits to raise funds during the economic downturn. This caused carbon prices to tumble to €10.15 (in Feb 09), compared with highs in the region of €30 in the previous July. Since this fall, the carbon price has rebounded to a spot price today of around €14 (22 July 2010 - €13.85). If the ETS was close to grinding to a halt in 2009 it is now in danger of shifting into reverse gear. That is not to say that trading activity will cease or that prices will crash again to zero – but rather that the scheme is in danger not only of failing the objective for which it was set up – to secure reductions in emissions – but that it could become an environmental hindrance.

With emissions now below the level of the cap, the cap has become a trap – guaranteeing high levels of emissions into the future rather than working to deliver reductions. There is currently no structural design feature that allows for a considered reaction to these circumstances and this is a major failing. The environmental integrity of the scheme is now reliant on political decisions to increase future targets provisionally set for it in 2008.”

While many Kyoto signers will be able to meet their emissions reduction targets by 2012 most will do so by purchasing emissions reductions from poorer, developing nations through the Kyoto's Clean Development Mechanism (CDM), rather than through reducing their own carbon emissions. The CDM is a poor substitute for reducing developed-world emissions as many are of questionable authenticity (Nordhaus and Shellenberger, 2008), contributing to the failure of the Kyoto Protocol (Prins and Rayner, 2007). Furthermore, even if the developed nations were making progress in reducing their own emissions, these would be easily negated by emissions increases from developing countries like China, India and Brazil, driven largely by an increasing consumption of coal (Hepburn and Stern, 2008).

Hence, the evidence suggests that the entire global framework for reducing carbon emissions is a failure based on an older paradigm of pollution control, rather than an energy development one, to change the underlying technologies and fuel sources that power the global economy (see for example Prins and Rayner, 2007; Nordhaus and Shellenberger, 2008). At the international level major government investments in technology and infrastructure would be required by the G8 and other wealthy nations, both in their own countries as well as in developing nations, similar to the US effort after World War II to rebuild Europe (Nordhaus and Shellenberger, 2008)

3. The Australian Emissions Trading Scheme

To appease public pressure about global warming and to placate sections of the business community, in 2006 the Government led by John Howard established the Prime Ministerial Task Group on Emissions Trading (PMTG). Also established in the same year, the National Emissions Trading Taskforce⁴ reported in December 2007 the “Possible design for a national greenhouse gas emissions trading scheme: Final framework report on scheme design” with the key message that “Emissions trading will be the central pillar in Australia’s strategy to reduce greenhouse gas emissions” with the government setting firm caps from 2011 to 2020. Further:

“As proposed in the Taskforce’s 2006 Discussion Paper and in the report of the PMTG, there should be three branches of permit allocation:

- a free, once-off allocation of permits to those electricity generators or other firms that would otherwise be disproportionately adversely affected by the introduction of the scheme
- a free annual allocation of permits to trade-exposed, emissions-intensive industries (TEEIs), until such time as competing nations face commensurate emissions constraints (ongoing eligibility for assistance should be reviewed regularly by an independent body)
- the auction of remaining permits.

These permit allocation arrangements strike a balance between the need to treat firms equitably in the face of a change in circumstances, and the need to encourage them to move to international best practice in greenhouse emissions abatement. This report sets out detailed proposals about the information to be taken into account when allocating permits.

The report also sets out a detailed framework for the auctioning of permits, building on the latest developments in theory and international practice. This framework could be used as the basis of a more detailed auction design and implementation plan.” (National Trading Taskforce, December 2007, pp vii-viii)

A mandatory national greenhouse and energy reporting system (*NGER Act 2007*) was promulgated in September 2007 as “the essential building blocks for accurate emissions data”, a precursor for an emissions trading scheme⁵.

The Howard Government lost office in November 2007, after the then opposition leader Kevin Rudd (ALP) promised voters they would act, stating that ‘climate change was the greatest moral, economic and social challenge of our time’ (Jones, 2010). Even though the Australian government had changed from centre right to centre left, public policy regarding climate had changed little. Jones (2010, p.9) points out the underlying challenge:

“coal – was rarely uttered by Governments, Commonwealth or State. There was a lack of candour in refusing to admit that coal, central to Australia’s current exports, industry and electric supply, was the greatest single source of CO₂ emissions”.

After several attempts to pass the legislation, the CPRS failed passage in the Parliament opposed by the opposition and Green senators. Dunlop (2010) argues that:

“One of the great myths being perpetuated in this election campaign is that the Greens, by refusing to support the Government’s CPRS (Carbon Pollution Reduction Scheme), prevented the introduction of effective emissions trading in this country, thus blocking serious action on climate change. ...The CPRS is appalling policy. By weakening the underlying emissions trading mechanism with multiple escape clauses and compensation, it runs counter to all the recommendations of the sound policy design work that had been carried out in

Australia, ranging from the AGO 1998 National Emissions Trading framework to the 2008 Garnaut Review, as well as practical overseas experience.

The rot set in with the 2007 Report of the Task Group on Emissions Trading, which was initiated by the Howard Government and dominated by fossil-fuel interests. Rudd and Wong (*Minister for Climate Change December 2007 – September 2010*) then continued the race to the bottom, even before the Garnaut recommendations were released, throwing aside what little CPRS integrity remained in the final horsetrading with Malcolm Turnbull (*then opposition leader*). If the CPRS were to be implemented in its current form, it would impose an enormous cost on the economy for minimal reductions in emissions.”

The Australian Government’s handling of climate change was abysmal and lacked conviction proclaiming an inherent contradiction to reduce emissions, while at the same time preserving jobs which create emissions (Jones, 2010). Moreover, the CSIRO, the Academies, the Universities and even the Australian Chief Scientist were excluded and thus unable to provide expert advice and engage public debate, as then Prime Minister Rudd ignored the community and pragmatically horse traded with the opposition to legislate the CPRS in his top-down approach (Jones, 2010).

The fossil fuel lobby successfully lobbied the Government, as political and economic considerations trumped environmental concerns about catastrophic global warming. Recent research by the Grattan Institute, however, contends that shielding these industries would simply increase costs for the rest of the community and discourage efficiencies to produce less carbon (www.grattan.edu.au). Pearse (2009, pp 62-63) describes the political machinations in the following:

“Rudd (*prime minister December 2007- July 2010*) might set an ambitious agenda and block most of the loopholes being sought by the largest polluters. However, the prospects of this faded in July 2008 when the climate-change minister, Penny Wong (*December 2007 – September 2010*), released the Government's Green Paper. For me, this all but sealed the carbon capture of Kevin Rudd. In keeping with the Yes Minister tradition of “always disposing of the difficult bit in the title” because “it does less harm there,” the “Carbon Pollution Reduction Scheme” would not in fact reduce carbon pollution in

Australia--it would actually rise, as I'll discuss below. The plan largely embraced the greenhouse mafia's plan to avoid emission cuts, and placed various obstacles in the way of the very transformation to a low-carbon economy that it promised.

Against Garnaut's recommendation, coal-fired power generators would be compensated for the decline in the value of their businesses. Investors who made dirty investments knowing carbon pricing was coming would be given a "once and for all" reward for doing so, and state-owned generators would effectively be fattened up for future sale. Against Garnaut's advice, transport would "initially" be carved out of the emissions trading scheme: although transport generates over 15 per cent of Australia's greenhouse pollution; although the average fuel efficiency of passenger vehicles hasn't improved since the early 1960s; and although the freight and logistics industry has been among the most fatalistic and lethargic sectors in the greenhouse debate.

Having rejected Garnaut's few hard lines, Wong proposed generous compensation for the biggest polluters. Some would get 60 per cent of their permits free, some would get 90 per cent--the dirtier the industry, the bigger the compo. On average, industries responsible for 37 per cent of Australia's greenhouse emissions would end up paying for one in every five tonnes of the carbon dioxide they generated. The biggest winner was the coal industry. Rudd was "a big believer in coal," and so was his Government. They showed a seemingly boundless faith in carbon capture and storage. It could save coal-fired electricity generation in Australia, protect our coal exports, and it was a technology we could sell the world. It might even provide energy security through coal-to-liquids, which Rudd's energy minister said was going to "play a major role in Australia's energy future." There would be no moratorium on building new coal-fired power stations, nor any time limit set by which new coal-fired generation needed to be "clean". With Australia's coal exports spiralling and none being used cleanly, NASA's James Hansen, perhaps the world's best-known and most widely respected climate scientist, had written to Rudd as the Green Paper was being drafted, urging Australia to exit coal mining and exports until CCS arrives on scale and to block any more conventional coal-fired generation. He was assiduously ignored. Labor's "light on the hill," it seemed, was a smouldering pile of coal.

With so many permits to be given away to a few big polluting industries, the task of cutting Australia's emissions would become commensurately harder for "non-assisted businesses" and consumers. When ABARE had advised the Howard Government that carving out the biggest emitters would double the carbon price for everyone else, they had not factored in nearly as much compensation as the Rudd Government now proposed."

In April 2010 the CPRS legislation was dropped amid Machiavellian political turbulence that resulted in the ousting of Prime Minister Kevin Rudd, who was replaced by Deputy Prime Minister Julia Gillard just prior to the August 2010

election. The CPRS was barely discussed during the 2010 election as the ALP fought to hold onto office (Jones, 2010). Since returning to office, the newly appointed Minister for Climate Change and Energy Efficiency (Hon. G. Combe) supports the introduction of a carbon market as stated in a recent speech at the Australian National University “The Government is working towards the introduction of a carbon price via a market mechanism” (Combe, 30 November 2010).

On the 10 July, 2011 Prime Minister Julia Gillard, the Deputy Prime Minister and Treasurer Wayne Swan, and Minister for Climate Change and Energy Efficiency Greg Combe announced the Australian Government’s carbon price of \$23 for each tonne of pollution beginning on 1 July 2012. The price will rise by 2.5 per cent a year in real terms during a three-year fixed price period until 1 July 2015. The carbon price mechanism will then transition to an emissions trading scheme where the price will be determined by the market.

<http://www.climatechange.gov.au/en/government/initiatives/multi-party-committee/carbon-price-framework.aspx>, accessed 22 July, 2011)

Further, the Garnaut climate change review update (www.garnautreview.org.au), May 2011) recommended the establishment of the an independent Carbon Bank to regulate the carbon market. The carbon market would essentially operate as financial market with tradeable permits between businesses in a primary market that sets the price, and a secondary market trading in risk oriented financial instruments.

The proposed Australian ETS would operate as a financial market despite evidence that establishing a global market by Government decree has never been done successfully for any commodity (Prins and Rayner, 2007). Before emissions could be

traded, GHGs are capped by Government decree. Similar to the EU ETS (Europa, 2008), the proposed Australian ETS would cover all six GHGs as defined by the Kyoto Protocol (Garnaut, September 2008; May 2011). The Australian Government has set emissions reduction targets of 5 to 15 per cent, or 25 per cent below 2000 levels by 2020. The Government has committed to an unconditional 5 per cent reduction on 2000 levels by 2020; up to 15 per cent reductions in the context of an international agreement where major economies agree to substantially restrain carbon pollution and advanced economies take on reductions comparable to Australia (Australian Government: Department of Climate Change and Energy Efficiency, 2010). An international agreement to cut GHGs to 25% below 2000 levels has not yet come to fruition, hence Australia's current target is 5% reduction below 2000 levels.

Pearse (2009) argues that this low GHG reduction target of 5% below 2000 levels is evidence that Australian Governments present and past are unduly influenced by fossil fuel vested interests, particularly the coal mining industry and the mining unions. Government coffers are effortlessly filled by mining royalties, rather than being accountable to taxpaying voters. Pearse (2009, p.31) wrote in "Quarry Vision" that:

"... successive Australian Governments' judgment that cheap coal is the centre-piece of national competitiveness. Thus, when climate change emerged as an issue, there was already a consensus among Australia's business, political and media establishment that the quarry was sacrosanct, coal nonnegotiable. It had to be protected at all costs. ...

In the early 1990s, the Australian carbon lobby got busy, fast. Its members immediately recognised that any Australian commitment to absolute cuts in greenhouse-gas emissions was a problem. It threatened the place of cheap coal in Australian energy and trade policy, raised operating costs and could expose the fact that many commodities were produced with more emissions here than virtually anywhere else. These industries were under threat of losing their privileged position in Australia's political order, but they were well placed to defend it and they knew the issue would take decades to play out. They prepared for a long, drawn-out fight."

The Australian Government through the proposed Australian ETS mooted for 2015 intends to financialise the atmosphere by introducing the trade of financial instruments over eligible emissions units overseen by financial market regulation, which has seen little reform since the almost near collapse in 2008 of the international financial system causing a global financial crisis (GFC). Carbon trading is projected to become one of the world's largest commodities market, yet much concern has been expressed about the questionable track record of commodities trading regulation since the adoption of carbon trading as part of the Kyoto Protocol (Gilbertson and Reyes, 2009).

4. The Financialisation of Capital

The financialisation of the atmosphere is following the growth of the financialisation of monopoly capitalism, as the shift in gravity of economic activity from production and services to finance, continues to be one of the key issues of our time (Foster, 2007, 2010). Changes in capitalism over the last three decades have been commonly characterised using a trio of terms: neo-liberalism, globalization and financialisation, with less attention is given to the third. "The great agglomerations of wealth seem to be increasingly related to finance rather than production, and finance more and more sets the pace and the rules for the management of the cash flow of nonfinancial firms ..." (Foster, 2007 p. 7).

As the post-war golden age of consumption drew to an end in the 1970's, owners of capital were faced with a dearth of investment opportunities and economic stagnation for their vast surpluses (Foster, 2010). The main solution in the 1970's was to expand

the demand for financial products as a means to maintain and grow their money capital, thus creating bubbles or ‘debt-cum-speculation balloons’ (Foster, 2010). Financial institutions enthusiastically supplied a large array of new financial instruments such as futures, options, derivatives and other hedging instruments, resulting in a drastic rise in speculation that has persisted for decades with little effective oversight (Foster, 2007, 2010).

James Tobin, 1981 Nobel Laureate in Economics, referred to the casino aspects of the financial markets in a 1984 talk on the efficiency of the financial markets. He said:

“I confess an uneasy Physiocratic suspicion ... that we are throwing more and more of our resources ... into financial activities remote from the production of goods and services, into activities that generate high private rewards disproportionate to their social productivity. I suspect the immense power of the computer is being harnessed to this paper economy not to do the same transactions more economically but to balloon the quantity and variety of financial exchanges. For this reason perhaps high technology has so far yielded disappointing results in economy-wide productivity. I fear, that as Keynes saw even in his day, the advantages of liquidity and negotiability of financial instruments come as a cost of facilitating -nth degree speculation which is short sighted and inefficient. ...I suspect that Keynes was right to suggest that we provide greater deterrents to transient holdings of financial instruments and larger rewards for long term investors” (Tobin, 1984 cited Forster, 2007, p. 3).

In fact the financial industry, particularly the large banks, have prospered by charging their customers for transactions necessary for everyday life, as banks electronically control the access to people’s incomes (wages, salaries and pensions) and lending for housing (shelter). Rather than financial growth through intelligent innovation for society, banks’ financial growth has been engorged by voluminous transaction charges supported by a large, computerised internet system. Moreover, politically initiated privatisations of many public assets (including publicly owned banks) gave the banks and financial market participants opportunities to profit in the deal-making and the subsequent trade in shares and financial products. Investors making money

from money became the ‘masters of the universe’ while ordinary people directly contributing to the benefit of society were squeezed by declining working conditions and increased living costs exacerbated by labour market deregulation and the dissipation of publicly provided services. Further:

“The obscene income inequality bequeathed by the three-decade rise of the financial industry has societal consequences graver than even the fundamental economic unfairness. When we reward financial engineers infinitely more than actual engineers, we “lure our most talented graduates to the largely unproductive chase” for Wall Street riches, as the economist Robert H. Frank wrote in *The Times* last weekend.” (Rich, 2010).

The casino aspects of the financial markets have become pervasive, destroying society’s financial security through short sighted speculation spurred by a flurry of deregulated trade in complex financial instruments by reputable financial institutions. Continued expansion of credit was promoted as an essential means to stimulate consumption growth (Jackson, 2009) and to keep the financial bubbles from bursting (Foster, 2010). The result is the biggest financial crisis since the Great Depression precipitated in the United States (US):

“As hundreds of billions in mortgage-related investments went bad, mighty investment banks that once ruled high finance have crumbled or reinvented themselves as humdrum commercial banks. The nation’s largest insurance company and largest savings and loan both were seized by the Government. The channels of credit, the arteries of the global financial system, have been constricted, cutting off crucial funds to consumers and businesses small and large.

In response, the federal Government adopted a \$700 billion (*plus*) bailout plan meant to reassure the markets and get credit flowing again. But the crisis began to spread to Europe and to emerging markets, with Governments scrambling to prop up banks, broaden guarantees for deposits and agree on a coordinated response” (The New York Times, 2010).

The origins of the global credit crisis began in the US and:

“stretch back to another notable boom-and-bust: the tech bubble of the late 1990’s. When the stock market began a steep decline in 2000 and the nation slipped into recession the next year, the Federal Reserve sharply lowered interest rates to limit the economic damage.” (New York Times, 12 July, 2010).

Stiglitz (2010) contends that:

“the Fed, captured for more than two decades by market fundamentalists and Wall Street interests, not only failed to impose restraints, but acted as cheerleaders. And, having played a central role in creating the current mess, it is now trying to regain face.

In 2001, lowering interest rates seemed to work, but not the way it was supposed to. Rather than spurring investment in plant and equipment, low interest rates inflated a real-estate bubble. This enabled a consumption binge, which meant that debt was created without a corresponding asset, and encouraged excessive investment in real estate, resulting in excess capacity that will take years to eliminate.”

Moreover,

“As well as its well-publicised support of the banking system, the Fed’s aid reached far beyond Wall Street, offering finance to the motorbike manufacturer Harley-Davidson, the industrial equipment maker Caterpillar, the telecoms company Verizon and even the computer billionaire Michael Dell as it struggled to keep the economy going. The lending reached \$3.3tn (£2.1tn) at its peak.

The disclosures show that UK banks were major beneficiaries of the Fed’s extensive support for foreign banks. Barclays was the biggest borrower under one scheme, the term auction facility, taking loans totalling \$232bn, which it has since repaid. Royal Bank of Scotland, Bank of Scotland (now part of Lloyds), Abbey National and HSBC also received billions in loans” (Rushe, 2010).

Leading investment banks and insurance companies sold a plethora of sliced and diced complex financial instruments as AAA rated investments to customers worldwide when these investments were, in fact, worthless and economically toxic. Yet the current regulation of financial products such as derivatives and futures is questionably opaque. For example:

“Another week, another transformational deal as one big exchange buys another. This time, the activity is in futures and derivatives, with the Chicago Mercantile Exchange buying the Chicago Board of Trade, creating one of the world’s largest financial markets.

How big is big? The combined entity, to be called the CME Group, will have a market capitalization of more than \$26 billion, compared with the proposed combination of the NYSE Group and Euronext, which would be closer to \$20 billion. The CME Group will oversee average daily trading volume of nearly nine million contracts representing \$4.2 trillion in notional value. ...

It is unclear ... whether the Commodity Futures Trading Commission, which regulates the red-hot futures markets, including the Mercantile Exchange and Board of Trade, can effectively regulate the beast being created.

The commission is widely considered weaker than its securities market counterpart, the Securities and Exchange Commission, a regulator that has faced its own share of complaints in recent years. (Depending on the political party, those complaints alternate between heavy-handedness and ineffectiveness.)

The futures commission has a staff of fewer than 500, a 2006 budget of less than \$100 million, and like the S.E.C., a revolving door of leadership inherent to its political nature. But compared with the S.E.C., the futures regulator has smaller resources: The S.E.C.'s 2006 estimated budget is \$888 million, and roughly 3,700 people work there, about 2,000 of them investigating companies or seeking to bring cases against them.

Congress created the futures commission in 1974 as an independent agency to regulate commodity futures and options markets. The most recent update of that authority came with the Commodity Futures Modernization Act, completed in December 2000.

That law, the product of some intense lobbying, radically changed the agency's approach, putting into effect a principles-based system rather than one based on rules. ... Users refer to this as a "lighter touch" approach - one far more favorable to them.

New products, for example, face an easy path: a futures exchange can certify to its regulator up to one day in advance that it is starting a new product or rule. If the exchange wants to request an approval, the agency has 45 days to give it. By way of comparison, stock exchanges cannot offer a new product or change any rule without approval from the S.E.C. a process that is notoriously slow" (Anderson, 2006).

Soros (2009, p.318) argues that financial engineering created increasingly sophisticated instruments for leveraging credit and managing risk to increase potential profit, but resulted in the self-inflicted crisis of the financial system. He wrote:

"An alphabet soup of synthetic financial instruments was concocted: CDOs, CDO squareds, CDSs, ABXs, CMBXs, etc. This engineering reached such heights of complexity that the regulators could no longer calculate the risks and came to rely on the risk management models of the financial institutions themselves. The rating companies followed a similar path in rating synthetic financial instruments, deriving considerable additional revenues from their proliferation. The esoteric financial instruments and techniques for risk management were based on the false premise that, in the behavior of the market, deviations from the mean occur in a random fashion. But the increased use of financial engineering set in motion a process of boom and bust. So eventually there was hell to pay."

Soros (2009) called for the regulation of such financial instruments, although his earlier warnings about unregulated derivatives were ignored.

“In 1997, the Commodity Futures Trading Commission, a federal agency that regulates options and futures trading, began exploring derivatives regulation. The commission, then led by a lawyer named Brooksley E. Born, invited comments about how best to oversee certain derivatives.

Ms. Born was concerned that unfettered, opaque trading could “threaten our regulated markets or, indeed, our economy without any federal agency knowing about it,” she said in Congressional testimony. She called for greater disclosure of trades and reserves to cushion against losses.

Ms. Born’s views incited fierce opposition from Mr. Greenspan and Robert E. Rubin, the Treasury secretary then. Treasury lawyers concluded that merely discussing new rules threatened the derivatives market. Mr. Greenspan warned that too many rules would damage Wall Street, prompting traders to take their business overseas” (Goodman, 2008).

The interdependent connectedness of the largely unregulated globalised financial markets was evident as the contagion of US initiated securitised toxic debt spread to Australia, reputedly having a well-regulated securitisation market including over-the-counter derivatives (Latimer, 2009). Even so:

“Australia’s securitisation market shut down along with those of the US, Europe, Britain and other countries, but not because it shared their fatal flaws ...Australia suffered from what is referred to as brand damage. Because of the collapse of the securitisation market in the US, investors shied away from all asset-backed securities, regardless of their quality” (Wood, 24 September 2009).

The financialisation of capitalism was supported and implemented by the rise of another neo-liberal institution, regulatory capitalism. Regulatory capitalism blurred the boundaries of the state, markets and society as public institutions, built up over several generations to develop a just and equitable society, were privatised or outsourced mainly for the economic benefit of market participants.

5. The Era of Regulatory Capitalism

The era of regulatory capitalism began in the 1970's during the Nixon administration, was propelled by neo-liberal Thatcher first in the UK and followed by Reagan in the US. Political proponents of neo-liberalism radically transformed public institutions through privatization and deregulation along the lines of business (Crenson and Ginsberg, 2002), thus laying the foundations for the financialisation of capital. Business and the corporate ethos of transformation, innovation, efficiency, competition and flexibility were promoted in the remaking of society (Clarke, 2004), displacing notions of fairness, equality and justice that were central to the superseded Keynesian welfare state (Van Kersbergen and Van Waarden, 2004).

Regulatory capitalism is the spawn of neo-liberal doctrine that believes in reducing reliance on state regulation for expected efficiencies through fundamentalist 'free-market' capitalist mechanisms, such as competition, unfettered markets, minimal taxes and little Government intervention (Friedman, 1962; Hayek, 1986/2002). Since the rise of neo-liberalism in the 1970's and 1980's, regulatory capitalism has been directed, advanced and enforced by state interventionist policies; thus blurring the boundaries between the state, markets and society (Levi-Faur, 2005) but advancing vested private interests over the public interest (Windsor and Warming Rasumussen, 2009).

Rather than regulation being administered by a publicly funded and fearlessly independently public service guided by a democratically elected Government, politicians often funded by vested interests have supported self-regulation of industry controlled by political appointees or outsourced to non-elected 'experts' from that industry (often employed by non-Government organizations or statutory bodies) to

regulate many industry sectors. These NGOs and statutory regulatory bodies are funded mainly by the very industry that they are overseeing, thus compromising their independence and setting up conflicts of interest. In addition the regulated are able to control the regulator through economic power thus subverting and corrupting the industry regulation to suit the business objectives of profit, rather than the public good. The moral reasons for the regulation of business, such as social justice and the protection of society, were supplanted by utility – the business of business regulation.

For example, the proposed Australian ETS is essentially self-regulated, as corporate entities will voluntarily ‘monitor and report their emissions to the scheme regulator’ or the Greenhouse Energy Data Office (GEDO⁶) (Garnaut, September 2008). The GEDO regulator⁷ has been appointed by the Minister for Climate Change, not independently appointed by parliament, and are thus lacking independence and open to vested industry and union interests’ lobbying as well as political bias. This type of regulatory arrangement is indicative of regulatory capitalism, a light touch approach with a focus on voluntarism and education supervised by a politically appointed expert often from the very industry that is the focus of regulation.

State initiated privatisation, the delegation of governance from politicians to industry ‘experts’, the proliferation of non-elected institutions in the shadow of the state and the influence of the private corporation are characteristics of regulatory capitalism (Levi-Faur, 2005), which have also favoured transnational professional services firms and international investment banks. This network not only advances the neo-liberal paradigm, but also profits from and participates in the spread of transnational financialised monopoly capitalism that benefits global corporations and elite policy

groups (Carroll and Carson, 2003). In fact, the transnational professional services firms such as international bulge-bracket legal firms, banks and brokerages stand to make huge profits as market participants face market, legal and regulatory risks “arising from uncertainties which surround the newly legislated (*GHG related financial*) products and services” (Knox-Hayes, 2009 p. 11).

Moreover, transnational professional services will attract fees from the measuring, reporting and assuring of corporate GHGs as part of the trading process. Knox-Hayes (2009) advocates international financial centres, such as London and New York, as suitable for the development of new carbon markets because they already host a full range of financial infrastructure, including regulatory institutions, finance and expertise. She argues that the development of a new carbon market in these financial centres could borrow the services and expertise in these established markets. As the financial industry centres of Wall Street and London city attempt to deal with the negative impact of the global financial crisis, the development of carbon markets may become their saving grace.

Although accountancy professionals in the field of carbon accounting want to establish their credibility, financial accounting requirements are currently challenged by the impact of the GFC. Even though corporate reports have several weaknesses that need to be resolved (as evidenced in major accounting fraud unpinning several corporate collapses e.g. the Lehman Brothers⁸ and Goldman Sachs scandals), the large professional services firms are pushing to get a large slice of the potentially lucrative business of accounting and assuring corporate GHGs, ostensibly for globalised emissions trading scheme(s) supported by the World Bank

(www.worldbank.org; also see Suddaby *et al.*, 2007 for an institutional analysis of the transnational accountancy profession)

6. The Accountancy Profession's Challenge: GHG Measurement and Reporting

While the legal profession is grappling with property rights associated with new emissions products, the accountancy profession is confronted by the challenge of accounting for these carbon commodities products. Current accounting practice, research and conceptual frameworks focus mainly on monetary quantitative (financial) dimensions of society, neglecting social and environmental aspects. The financialisation of the atmosphere is no exception and will lead to its monetisation for accounting purposes. Similar to other monetised social activities in the formal economy, the atmosphere:

“will be presented, one way or another, in the accounts of private corporations. Such financial accounts should not be mistaken for objective measurements of productive resources. As even mainstream economists have conceded, capital assets measured in money terms can ultimately never have unambiguous values since they always incorporate a contested and subjective vision of the future. Seen this way, accounting numbers are both an ex-post validation of prior economic resource allocation, *and* at the same time central to the construction of the economic reality upon which future resource allocation decisions will be based. Accounting is thus an inherently political act, even if it is not very politicized” (Nolke and Perry, 2007 p. 3).

For example “Just as financial accounting measures the inflow and outflow of money, greenhouse gas accounting provides an inventory of the gases that are put into and removed from the atmosphere” (Green, 2009, p.1). This simple idea however belies the complex accounting questions with little authoritative accounting literature from either the Financial Accounting Standards Board (FASB) or the International Accounting Standards Board (IASB) on accounting for emission allowances as argued by Deloitte partners (Rohrig and Davis, 2009). Cook (2009) describes the aborted attempt by the IASB in early 2005 to regulate the accounting of the EU's ETS

and provides examples of accounting for emissions:

“To assist in the search for a principled solution, this paper has drawn attention to certain features of the cap and trade scheme that, in combination, are probably unique:

a grant of assets having two functions – an immediately marketable security and a ‘currency’ which will be the sole means of satisfying a highly probable future liability to the grant” (Cook, 2009, p.465).

The problem of Governments gifting or auctioning permission for companies to emit pollution is the accounting of that permit. If gifted permits are booked as assets on the polluter’s balance sheet, Milne (1996) contends that the public is subsidising business to pollute the atmosphere; thus taking away society’s right to clean air. Lehman (1996) also argues that market or taxation approaches to environmental degradation supposes the neo-classical notion that humans can solve environmental crises, as well as control and shape nature in humanity’s image. Fundamental to neo-classic economics is individual self interest that promotes the idea of private ownership that engenders rational, wise and free choices, while nature (the atmosphere in particular) cannot be captured and reduced to an instrumental good (Lehman, 1996) to be owned and sold or speculated for profit.

Deloitte partners Rohrig and Davis (2009, p. 4) point out:

“The initial recording of emission allowances is also widely debated, in part due to the common practice of regulatory agencies freely allocating (or allocating at a below-market cost) many allowances to regulated entities. The two possible accounting value models for initial recognition are ‘cost’ and ‘fair value’.

Despite general guidelines that purchased intangibles or inventory be measured at cost, there is debate over whether allocated allowances are ‘purchased,’ and there are not many other analogous instances where an asset with a verifiable value is received for free. Furthermore, IFRIC 3 (prior to withdrawal) supported a fair value approach (albeit with concomitant recognition of an offsetting governmental grant).”

While the accountancy profession is experienced in dealing with measurement technicalities relating to financial reporting, it is still grappling with alternatives to historical cost accounting that have been proposed over several decades (see Chambers, 1967, 1980; Christenson, 1980; Cooper, 1980; Edwards, 1975; Ijiri and Jaedicke, 1966; Kaplan, 1980; Tinker, 1980). The measurement quandary is even now challenging standard setters as they deal with ‘fair value’.

Cook (2009) discusses the issue of fair value in relation to emissions trading. Current accounting rules include the use of fair value for financial instruments, such as derivatives described in paragraph 87, *AASB 132* incorporating *IAS 32*. ‘Fair value’ accounting rules have come under attack, particularly by bankers who were forced to report large losses as a result of the crisis of the financial system (The Economist, 2009). Bankers successfully lobbied standard setters and politicians to change the ‘fair value rule’, as the following clarification indicates:

“Washington, D.C., Sept. 30, 2008 – The current environment has made questions surrounding the determination of fair value particularly challenging for preparers, auditors, and users of financial information. The SEC’s Office of the Chief Accountant and the staff of the FASB have been engaged in extensive consultations with participants in the capital markets, including investors, preparers, and auditors, on the application of fair value measurements in the current market environment.

There are a number of practice issues where there is a need for immediate additional guidance. The SEC’s Office of the Chief Accountant recognizes and supports the productive efforts of the FASB and the IASB on these issues, including the IASB Expert Advisory Panel’s Sept. 16, 2008 draft document, the work of the FASB’s Valuation Resource Group, and the IASB’s upcoming meeting on the credit crisis. To provide additional guidance on these and other issues surrounding fair value measurements, the FASB is preparing to propose additional interpretative guidance on fair value measurement under U.S. GAAP later this week.

Finally, because fair value measurements and the assessment of impairment may require significant judgments, clear and transparent disclosures are critical to providing investors with an understanding of the judgments made by management.”

As stated above, the inherent weakness of fair value is that such measurements and clear disclosure are at the behest of management judgements thus not only challenging preparers but also auditors. Wines *et al* (2007, p. 863) argue that fair value estimation opens opportunities for creative accounting:

“Specifically, company management, in collaboration with the accounting profession, will need to use their valuation and measurement expertise and skills to estimate fair values rather than refer to verifiable transaction amounts.”

6.1 Society-Nature Conceptual Framework

While reporting and auditing financial instruments associated with emissions trading is challenging for the accountancy profession (Cook, 2009), the measurement and reporting of actual GHG emissions to support the CPRS also presents challenges for a workable conceptual framework. For example, the current conceptual framework defines assets and liabilities as ‘economic’ future benefits or losses. A consequence of this economic focus is the neglect of social and environmental reporting in the audited financial reports by the dominant ‘capital markets’ researchers (see Moore, 2009).

Carbon accounting, in fact, atomises nature; that is the accounting of GHGs associated with the sale of permits to pollute the atmosphere with human-made toxins, gases and particles in a cap and trade scheme. Disclosures about the industrial use of air, land and water are atomised and only reported for economic production. For example, some disclosures have been required by the extractive industry, although this is mainly in relation to land and water degradation rather than the atmosphere. AASB 1022 *Accounting for the Extractive Industries* operative from 31 December 1989 required Australian companies to recognise restoration and rehabilitation of abandoned mining sites, but disclosure of accounting policies on restoration

obligations was not required. Hence in August 1995, the Urgent Issues Group (UIG) released UIG Abstract 4 *Disclosure of Accounting Policies for Restoration Obligations in the Extractive Industries* as an explicit directive for separate disclosure of a provision for restoration, and the accounting policies adopted for recognition and measurement of the restoration obligations. Subsequently, as a result of international harmonisation, AASB 1022 was replaced in April 2007 with AASB 6 *Exploration for and Evaluation of Mineral Resources* incorporating IFRS 6 operative from 1 July 2007.

The objectives of AASB 6 are to provide limited improvements to existing accounting standards for exploration and evaluation expenditures; that exploration and evaluation assets be assessed for impairment in accordance with AASB 136 *Impairment of Assets* incorporating IAS 36, and assist users to understand the amount, timing and certainty of future cash flows from any exploration and evaluation assets. The disclosure of restoration obligations however are covered by AASB 137 *Provisions, Contingent Liabilities and Contingent Assets*, incorporating IAS 37 operative from 1 July 2008. The standard requires entities to disclose the following for each class of contingent liability at reporting date: an estimate of its financial effect, an indication of the uncertainties relating to the amount or timing of any outflow and the possibility of any reimbursement. UIG Interpretation 1 *Changes in Existing Decommissioning, Restoration and Similar Liabilities* operative from 1 January 2009 provides guidance on how to account for the effect of changes in the measurement of existing decommissioning, restoration and similar liabilities.

This atomised and economic but unsustainable accounting approach to life's necessities of air, water and land supports Anthony Hopwood's call for interdisciplinary research regarding corporate reporting and conceptual frameworks stating that:

“... In order to illustrate such potential it is interesting to consider financial accounting and reporting, an area that has still received less exploration in terms of the conceptual frameworks and methodologies available in this journal. Often requiring a technical understanding of accounting as well as an interdisciplinary insight into its functioning and consequences, the understanding of the organizational and social nature of external corporate reporting has remained a relatively unexplored area despite the importance of gaining better insights into it.” (Hopwood, 2009, p. 890)

The financial accounting conceptual framework projects have remained stalled, as they attempt to capture the principles and concepts of measurement amid contention from a deregulation push supported by vested political and business interests. These framework projects might also be seen as redundant by some, as market oriented thought promote(d) accounting as an information science informing capital markets (Moore, 2009) as purported by the now discredited 'EMH'.

Can science, economics and politics agree on a solution to global warming when each field has a different view of pollution exacerbating global warming? (as argued by Callon, 2009, p. 3). Carbon accounting and accountability is currently focused on the measurement technicalities of atmospheric pollution for trading purposes, rather than the broader society-nature problem. A conceptual framework for sustainability might be useful to support the technical characteristics of measuring GHGs in a broader social and environmental context. For example Haberl *et al*, (2004) propose a material and energy flow accounting (MEFA) framework that conceptualises sustainability from society-nature perspective rather than being an externality as perceived by the

classical neo-economic theory (Friedman, 1962). Moreover, Stiglitz, Sen and Fitoussi (2009, p. 17) argue that the usual measures of economic success fail to capture many aspects necessary for life on Earth and state that,

At a minimum, in order to measure sustainability, what we need are indicators that inform us about the change in the quantities of the different factors that matter for future well-being. Put differently, sustainability requires the simultaneous preservation or increase in several “stocks”: quantities and qualities of natural resources, and of human, social and physical capital.”

Carbon reporting is currently voluntary in most countries, but various NGOs and industry organisations have developed standards for private regulatory reasons. For example the Carbon Standards Disclosure Board, a consortium of business and environmental organisations, released an exposure draft on a proposed reporting framework in May 2009 (see cdsb-global.org). Carbon reporting is also a joint project of the IASB and the FASB. The IASB/FASB project scope is restricted to emissions trading (Chalmers *et al*, 2009). The reality is that the value of the unit is not monetary, unless translated through the price of carbon on a commodity market. This neoliberal approach to global warming has several problems.

By restricting carbon reporting to emissions trading, confines accounting and accountability to the information needs of carbon markets and market participants, (rather than focusing upon accountability to the wider society); this marketised orientation of the atmosphere reduces the development of a conceptual framework for sustainability reporting by emphasising technicalities to measure pollution to trade, rather than a more holistic conceptualisation of global warming as a society-nature problem to ensure sustainability.

Further carbon accounting lacks ethicality, as argued by Bumpus and Liverman (2008, p.133):

“The way in which the rights to carbon emissions and reductions have been allocated provides enormous benefits to some—industrial countries and firms with high levels of pollution in 1990 and easily achieved efficiencies, for example—but disadvantages others who were more efficient or less powerful in negotiations or were willing to assign their carbon rights to others at a low cost—such as forest owners in the developing world.”

7. Conclusion

The Earth is a holistic and subtle bio-system where land, water and air interact and blend to generate and support all life, not just humanity. Hence value should not be reductively monetised for the sake of market participants because “the market fails to acknowledge the existence of non-instrumental goods” (Lehman, 1996, p.670). Yet the regulation and associated accounting rules for water and land are treated as distinct economic commodities valued for their productive contribution, but not recognized for their importance to life. Another concern is that an entity’s disclosure about the use of the atmosphere for production is different to the disclosure rules for the productive use of land and water. As such the current accounting rules require entities, particularly in the extractive industries, to recognise and disclose the restoration obligations as a contingent liability to rehabilitate land and water after the event.

However, the mandated disclosure of an entity’s productive non-use of the atmosphere, commoditised as a financial product, may not be clearly disclosed unless regulations are introduced in what is now a largely opaque and unregulated derivatives market. The emissions trading scheme as the Australian Government’s centrepiece to reduce harmful greenhouse gases therefore appears to be more focused

on appeasing vested interests, such as the fossil fuel lobby and mining unions, rather than the vital aim of actually reducing global warming. We therefore argue that more focus is needed on developing alternative policies like those proposed by ClimateWorks Australia: Low Carbon Growth Plan for Australia, which suggests 25% below 2000 levels can be achieved at a low cost using technologies that are available today (www.climateworksaustralia.org).

The accountancy profession has been passive regarding corporate accountability of the impact of climate change, leaving disclosure standards to NGOs such as the Global Reporting Initiative or the International Organization for Standardization. The World Bank and World Trade Organization were influential in the recent widespread promulgation of international accounting and auditing standards, which began in the early 1970's with the crucial exception of the U.S. FASB. After nearly 30 years the IASB and the FASB are now negotiating for harmonised accounting standards. We would argue that if the accountancy profession takes 30 years or more to agree on international reporting and accountability of the corporate use of nature, the planet will be in dire danger. Cook (2009) examined the failed attempt by the IASB in early 2005 to regulate the accounting for the EU ETS under the Kyoto Protocol. His examination does not augur well for timely and effective accounting policies.

Finally, Governments used taxpayer funded bailouts to rescue the international financial markets and their participating financial institutions from the brink after systemic regulatory and market failure implicating complex financial products. National and international public policy is now largely focused on a risky experiment of emissions trading as a market solution to global warming (see Callon, 2009). If

emissions' trading fails to reduce human induced global warming, no amount of taxpayer funded bailouts will be able to rescue life on Earth from the catastrophe of extreme climate and nature's meltdown. The ALP, along with other governments, are betting on a complex market solution to reduce GHG emissions through the financialisation of the atmosphere, with little public debate about the atmosphere as a public good. Rather than governments relying on the narrow neo-liberal doctrine of market fundamentalism and associated small government that seeks to reduce the public sphere, we contend that leadership initiating comprehensive, innovative, diverse and even simple approaches to reduce global warming that embrace and engage the wider community action is needed now.

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¹ This is a legally binding plan for ratifying countries to cut six key greenhouse gases (GHG) causing climate change, namely carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

² Guy Pearse is a former member of the Liberal Party and was a speechwriter for former environment minister Robert Hill. He has also been an industry lobbyist, consultant and spin doctor. In 2007 he exposed the politics behind Australia's response to climate change on Four Corners and in his book *High & Dry* (Pearse, 2007).

³ LTCM was an offshore fund with a notional value of derivatives contracts in excess of \$1trillion. LTCM was rescued by a New York Federal Reserve and a creditor consortium of banks in September 1998 after Russian banks and securities firms defaulted. Federal Reserve Chair Greenspan testified before congress that the rescue of LTCM was necessary to avoid substantial damage to many market participants and impair economies including the U.S. Another reason for LTCM's rescue is that they held huge derivative positions and derivative counterparties would have suffered large potential losses if LTCM failed to make good on future payments of those contracts. This would have triggered further defaults and wholesale liquidation (Edwards, 1999).

⁴ This caveat is on the front page of this report "*The Final Framework Report* has been prepared by State and Territory officials from the National Emissions Trading Taskforce. It should be noted that the report and its recommendations have not been adopted by State and Territory Governments and should not be taken as representing the formal policy positions of those Governments. Premiers and Chief Ministers have agreed to the report being released on this website as an input into the ongoing consideration by the Garnaut Climate Change Review and the Commonwealth Government of issues relating to an Australian emissions trading scheme."

⁵ The legislative GHG measurement and reporting framework supporting the proposed emissions trading scheme is the *National Greenhouse and Energy Reporting Act 2007*, No. 175, 2007 (hereafter the *NGER Act*) passed by the Australian Parliament. This Act was introduced by the conservative Coalition parties led John Howard who lost the November 2007 election and his seat. The Act is effective from September 2007 (Commonwealth of Australia Law 2007) and was amended in September 2008 (Commonwealth of Australia Law 2007a).

⁶ **"2. The GEDO's Compliance and Enforcement Approach**

Managing compliance is about encouraging corporations to voluntarily comply, and dealing with contraventions appropriately.

We will use intelligence analysis and risk assessment to make strategic decisions about the allocation of resources, with the intent to maximise the number of corporations that voluntarily comply with their obligations under the NGER Act.

The core elements of this approach are:

- assisting corporations to understand their rights and obligations;

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- making it as easy as possible for corporations to meet their obligations;
 - supporting corporations who want to do the right thing;
 - monitoring compliance through a range of methods, including the use of targeted audits; and
 - actively pursuing those corporations that opportunistically or deliberately contravene the law.” (The National Greenhouse and Energy Reporting Scheme - Education, Compliance and Enforcement Policy, May 2010, p. 4).

⁷ Information about the appointed GEDO (GHG emissions regulator) is difficult to find on the Department of Climate Change and Energy Efficiency website. In fact the researcher phoned and emailed the Department several times finally eliciting a name but no other information such as a CV.

⁸ Lehman Brothers Bank collapsed in September 2008 the largest bankruptcy ever filed amid accusations of securities and accounting fraud that precipitated the global financial crisis (Valukas, 2010).