

# **Bio-politics of Climate Change Governance- The Australian Narrative**

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# **CERTIFICATE OF ORIGINAL AUTHORSHIP**

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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# Glossary of Acronyms and Abbreviations

- AGO: Australian Greenhouse Office
- AAU: Assigned Amount Unit (AAU) is a tradable 'Kyoto unit' representing an allowance to emit greenhouse gases comprising one metric tonne of carbon dioxide equivalent calculated using their global warming potential. Assigned Amount Units are issued up to the level of initial "assigned amount" of an Annex 1 Party to the Kyoto Protocol
- ABARE: Australian Bureau of Agricultural Economics
- AJ: Activities Implemented Jointly: Voluntary Pilot Phase of the flexible mechanisms that allowed industrialized countries (Annex 1 Parties) to implement projects in other countries that reduce emissions of greenhouse gases or enhance their removal through sinks.
- CDM: Clean Development Mechanism: Article 12 of the Kyoto Protocol establishes a mechanism whose role is to assist non- industrialized countries (non-Annex 1 Parties) in achieving sustainable development and to assist industrialized countries (Annex 1 Parties) with their quantified emission limitation and reduction commitments.
- CER: Certified Emission Reduction: a permit issued by CDM administrators equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials from 1995 IPCC Second Assessment Report
- COP: Conference of the Parties- highest level meeting of signatory parties (nation-states) to the Kyoto Protocol
- CPRS: Carbon Pollution Reduction Scheme [The Australian Emissions Trading Scheme]
- ESD: Ecologically Sustainable Development
- ERU: a tradable 'Kyoto unit' representing an allowance to emit one metric tonne of greenhouse gases absorbed by a removal or carbon sink activity in an Annex I country
- EEA: Economic and Energy Analysis Pvt Ltd
- GWP: Global Warming Potential
- GWA: George Wilkenfield Associates Pvt Ltd
- IPCC: Intergovernmental Panel on Climate Change
- Kyoto Units: Each flexible mechanism of the Kyoto protocol has units intended to represent one metric tonne of CO<sub>2</sub> equivalent. Jurisdiction vary on their allowance of Kyoto Units for compliance with domestic climate legislation. A CER is the Kyoto Unit for Clean Development Mechanism.
- LULUCF: Land Use Land Use Change and Forestry
- NGRS: National Greenhouse Reduction Strategy
- NCAS: National Carbon Accounting System [Australian]
- QELRO: Quantified Emission Limitation or Reduction Objective, expressed as a percentage in relation a base year, denotes the average level of emissions that an Annex 1 Party could emit on an annual basis during a given commitment period
- REDD: Reduced Emissions from Deforestation and Degradation: international financing mechanisms to offset industrial emissions by sponsoring an array of governmental techniques to prevent deforestation of a certain area of land.
- SLATS: State-wide Landcover and Trees Survey [Queensland]



UNFCCC: United Nations Framework Convention on Climate Change (signed 1992, entered into force 1994) establishes the commitment by signatory countries to avoid dangerous interference with the climate system

# Abstract

The central research question of this dissertation is how can a bio-political and historico-materialistic framework help define the specific features of climate crisis and its governance? Through a theoretical assemblage of Foucault's governmentality supplemented with Marxist conception of primitive accumulation, the main objective of this thesis is to trace a genealogy of climate change governance in Australia in order to unravel different modalities and configurations of relationship between climate and capital creating socio-ecological links in neoliberal environmental governance.

Within the broader context of international negotiations on climate governance this thesis focuses on the terrain and specificities of climate governance in Australia between 1990-2008, as a trajectory that connects the discourses of sustainable development from 1990's to green economy concepts popularized during the course of 2000. The trajectory and policy terrain illustrates a continuing chapter in the history of neoliberalism as progressively hegemonic governmental rationality, creating new modes of regulation in converting nature from enacting limits to economic process to a fundamental element of market valorization.

This thesis propose to understand climate policies as regime of power practices organized through problematization, rationalities, programmes and technologies of government. The concept of governmentality helps to explore the social and political logic of such practices as routinized, normalized, sedimented, contested and defended practices of a regime. The merit of a Marxist conception of primitive accumulation helps in the analysis of neo-liberalization of nature that facilitates the expansion of capitalist accumulation through the capture, valuation, monetization and pricing of climate.





# Introduction

*Hegel remarks somewhere that all great world-historic facts and personages appear, so to speak, twice. He forgot to add: the first time as tragedy, the second time as farce.*

***Karl Marx, 1852, The Eighteenth Brumaire of Louis Bonaparte***

The tragedy-cum-farce nature of climate change governance arises from its ubiquitous and complex nature of in-betweenness: its tendency to transcend established borders between nation-states, between class and ethnic groups, natural sciences and the social sciences. Due to the increasing connectivity of the globalized world the issue of climate change tends to be interconnected and multidimensional. As John Dryzek (1997:9) puts it, 'environmental problems by definition are found at the intersection of eco-system and human social system, so one should expect them to be doubly complex'.

To cite an example of this double complexity, it might be useful to consider the United Nations Conference on Climate Change (Conference of Parties COP21) held in Paris 2015. The first COP was held in 1992 at Rio de Janeiro. After 23 years of international policy negotiations the apparent failure in reaching a global binding reduction in greenhouse gas emissions, demonstrates a form of hegemonic order structured through the workings of a specific rationality, power and politics. The current ecological crisis therefore has less to do with preservation or destruction of the so-called natural world, than with the crisis in interpretation of this 'natural world'.

Within the broader context of international negotiations on climate this thesis focuses on the terrain and specificities of climate governance in Australia between 1990-2008, signaling an emerging bipartisan consensus in Australia on

economized climate governance, culminating in the Garnaut Review. This period is significant for analysis as it illuminates the problems underlying this consensus as after 2008 the consensus was broken entering into a period deep re-politicization and dissension leading to a policy void.

Broadly, it is a critique of climate policies over a period of 25 years in Australian politics. The position I take in this thesis is that; climate policy as a regime of power practices by respective governments was aimed to create a form of social order, structured through the workings of a particular rationality, processes and techniques to represent, organize, regulate climate, society and social fabric. Climate governance was about governing the climate, governing the population and governing the society. This thesis attempts to unravel the genealogy of climate governance in Australia integrating micro and macro power practices which took place through the intersection of nature, population and economy.

Global climate change has been the most contentious and divisive issue in Australian politics over which many elections were fought and many leadership challenges and spills took place. Australia's relation with climate crisis is a double-edged sword. It is not only vulnerable to the manifestations of global warming, but at same time to the mitigation of the crisis. Whilst Australia is a land of heat and drought, it has a dominant economic interest in the maintenance of fossil fuel economy being one of the world's largest exporters of coal.

Within this context, it is rather unsurprising that climate crisis has been defined as a 'wicked' or a 'diabolical' problem. Contestations over climate crisis in the last decade have been frequent and ferocious, as has been the oscillation of public opinion on whether and how to respond to the global climate issue. Making sense of these contestations and dynamics require attention to the construction of the climate issue as a political problem or an object of political concern. At the same time inquiry is needed into the different ways groups have been mobilized in opposition to action, into the framing of the responses, in terms of what policies has been pursued in and to what effects. The endemic failure of an effective climate policy under Labor and Liberal governments across generations points to the need for a serious and critical reflection and interpretation of the norms, rationale and processes through which climate change is governed in Australia.

## Climate Change Governance

During the 1990's, as the issue of climate change began to metamorphose, the notion of 'global governance' began to emerge in academia. Contrary to the proponents of international relations who equated the idea of governance with an authoritative inscription of norms imposing constraints on state behaviour, the global governance approach focused on the rise of hybrid, non-hierarchical and network modes of governance. The approach debased the centrality of nation-states by shifting 'authority upwards to transnational and supranational organizations, side-wards to social movement and NGO's and downwards to subnational groups, so that the logic of governance does not necessarily follow hierarchical lines' (Rosenau, 1999:293).

The emergence and use of the notion of governance indicated a dissolving distinction between state, business, NGO's, rise of public-private partnerships, national, domestic and international realms of governance, thereby detaching the processes of governance from the institutions of government (Rosenau and Czempiel, 1992). Jagers and Stripple (2003:385) defined the concept of global governance in the context of global warming as 'all purposeful mechanisms and measures aimed at steering social system towards preventing, mitigating or adapting to the risks posed by climate change'.

Climate governance, under the purview of global governance theory, is often analyzed between two poles of integration and fragmentation. Integration is defined as a normative ideal, recognizing the involvement of various actors, state and non-state, public vs private, in the process of governance and emphasized the processes and mechanisms through which policies were framed (Jagers & Stipple, 2003). The pole of fragmentation involved understanding the shifting authority through fragmentation, with the multiplicity of actors involved in agenda setting, policy development and policy implementation in the context of climate governance. It emphasized the inter-linkages and issue-linkages of climate change politics, various interests and motives of the actors, beyond the nation-state (Paterson et al, 2003)

However, despite the optimism of the proponents of global governance approach, Barnett and Duvall (2005) criticized the scholarship of global governance, claiming it does not account for the role of power. The focus of the governance approach was on the transfer of power from public to private actors, and has been questioned on the extent to which 'critical independence of non-state actors' is rarely examined. Critics note (Hunold & Dryzek, 2005) that just because some of the activities are not directly controlled by the state does not necessarily mean that they were devoid of state's influence.

Sending & Neumann (2006) argue that the global governance approach fails to identify the basis of the emergence and rising influence of non-nation state actors. The approach only focused on the involvement of the actors in the process of governance, without any analysis on 'why' and 'how'. With reference to the field of human rights, the scholars show how the emergence of transnational governance by private actors is actively promoted by the government in order to exert influence indirectly. Sending and Neumann (2006:188) argue that 'the capacity to generate compliance' perpetuates the very 'state-centric framework that they seem to transcend'.

In the field of climate crisis Okereke et al (2009) similarly argue a more nuanced understanding of power would reveal that climate governance involves a changing rationality of power and politics rather than in a shift of zero-sum game between state and non-state actors. Okereke et.al (2009:61) argue that the current theorization of climate politics in global governance terms has reached a 'conceptual impasse' and requires an engagement with theoretical perspectives that can open up the taken-for-granted ground concerning the 'who', 'why' and 'how' of governance.

## **Governance and Governmentality**



One of the mammoth challenges confronting us today is the crisis of explanation of neoliberalism's resilience in the face of devastating economic, social and environmental effects. A chronology of national and international climate negotiations demonstrates that the dominant paradigm driving climate governance is based on the rhetoric of convergence of environment protection norms with those associated with neoliberal rationality and maintenance of the economic order. The international response to climate crisis highlights, the imperative of economic growth which is never contested or questioned. More importantly the gravity and urgency of climate crisis is assessed and measured in so far as the solution to it is market-based and protects and perpetuates growth. In the last two decades international negotiations on climate change have been waged over the merits, design and implementation of market-based mechanisms of mitigation of greenhouse gas emissions. The mechanisms of the Kyoto Protocol, created to facilitate greenhouse gas reductions were geared to the continued accumulation of capital and maintenance of overall economic growth. The paradox is the very same economic system that relies on constant growth, endless accumulation and ever-deepening human alienation resulting in climate crisis is being entrenched as the solution to its effective mitigation. Current government and intergovernmental action on climate change primarily focused on the orthodox position on market fundamentalism to maximize economic growth, extend capitalism and protect the vested interests of the capitalist class and the "minority haves".

Elizabeth Meehan argues (2003:3, c.f Brown, 2015:125) 'the attention to governance in academic scholarship today arises from a Foucauldian understanding of power as 'dispersed and relational'. Foucault's (1991) conceptualization of '*governmentality*', focused on 'the analytics of power' is germane, as it takes into account the ways of thinking about how governing relates to the empirical terrain of material inscriptions, rationalities, technologies, programmes and identities of government and more importantly how economic concepts and programmes have been constituted as trajectories of power. It helps us unravel the nature of power and authority of different actors involved in governance and how government achieves its aims and ambitions through its techniques and programs.

Contrary to the proposition of global governance theory Elizabeth Meehan (c.f Brown, 2015:125) argues that governance arises from a 'lack of capacity by governments, acting alone to effect desired changes'. Governance becomes a specific mode of 'engaging and mobilizing a variety of state and non-state actors; inciting new practices, networks, arrangements, partnerships and all together signaled an erosion of centralized and hierarchical exercise of power' (Lemke, 2007:13). Wendy Brown (2015:122) states that 'contemporary neoliberalism is unthinkable without governance' as it reconfigures the relationships between the market, state, and society, reorders the operation of power and rule. Neoliberalism as a political rationality or governing rationality provides and enables conditions of governance. Governance thus becomes a crucial technique of power and political modality through which government ensures 'conduct of conduct of subjects' through constituting of environment configuration of constraints and incentives in a deregulated society and market. The metabolization of materiality, thought and action is also about production of concepts such as economic growth and artificially arranged conditions for freedom, entrepreneurialism and so on. Most importantly, neoliberalism as a governing rationality is an extension of specific articulation of economic values, practices and metrics to every aspect of our life, involving 'economization' of non-economic spheres and practices, a process of remaking the knowledge, form, content and conduct appropriate to these spheres and practices' (Callon and Kaliskan, 2009 c.f Brown 2015:30) including climate crisis.

Neo-liberalism is the governing political rationality, integrated in climate change as an object of concern and knowledge and a political sphere within which the exercise of power is rationalized. Climate governance becomes synonymous with governing climate change, subjected to bureaucratic and administrative intervention and management techniques, practices, processes, institutions created and deployed to entrench the government's larger aim of managing 'all life' across nature, population, economy and society. Governance thus constitutes a joint process of what (Callon, 2009:545) rightly describes as

politicization, economization, scientization and above all technocratization of climate change, as an object of concern.

## **Rationale for Research**

The issue of climate change is not just an environmental problem but it is an institutional, economic, social, cultural and most importantly a political one (Newell & Paterson, 2010)

My interest in the politics of climate change has been inspired by my own childhood and years of practicing social work in India and the intertwining of my life within the situated environment. Born and brought up in a lower-middle class family, in a small town in India, basic necessities like electricity, running water, and sanitation were unaffordable. During the monsoons excessive flooding would disrupt and dislocate our house, livelihoods and means of basic existence. During social work practice I was fortunate to travel and live in pristine ecologies of The Himalayas in India. Living with rural and indigenous communities, I witnessed a sense of belonging, sustenance and symbiosis between nature and communities, their culture, knowledge and wisdom. Over the centuries, these communities had developed an integrated system of ensuring ecological balance to sustain, conserve and protect their environment.

I was associated with mobilizing the communities on issues such as their rights to ownership and access to natural resources, to continue to protect, conserve and manage their own environment against the regulatory strategies of the government and state which intended to exclude the communities from ownership and access to forests and other natural resources which they so intimately depended on and protected through various traditional ways. State control and centralization of natural resources had resulted in severe environmental degradation and erosion of traditional knowledge and practices. The communities were involved in everyday resistance and struggle against draconian state legislations, laws, policies of

commercial forestry, dams damaging the environment and against dispossession from livelihoods, ownership of their natural environment and most importantly against exclusion and expropriation from their land and forests.

This thesis is inspired within the overall scholarship and concern for social justice and development. Climate crisis as one of the contemporary ecological crises is first and foremost a result of deep seated social and economic inequalities between nation-states, between minority haves and majority have-nots within nations. Debates about climate justice raise concerns about the unfair distributive impacts and responsibilities for the mitigation of climate crisis. With regards to unfair impacts the fact is those countries, communities and classes who are least responsible for emitting greenhouse gas (GHG) suffer the worst consequences of climate change in the form of ecological disasters, catastrophes and most importantly depletion and degradation of natural resources.

The fruits of economic development garnered by a minority of haves, through the process of industrialization allowed the free use of natural resources and the right to pollute the air and water. The minority reaped continuing benefits of development at the cost of the have-nots who are intimately dependent on natural resources for sustenance and basic livelihoods and at the same deliberately excluded from development. The affluent drive cars, use fossil-fuel electricity to watch television, use refrigerators; whilst the majority of the have-nots live in slums, cooked meals in kerosene or fuelwood and relied on their two feet for transportation. The contemporary ecological crisis is therefore the result of intensified inequality between haves and have-nots, ruthless industrialization, production and crass consumption in the developed western countries, including Australia being one of them. Developed countries are responsible for close to 75 percent of emissions caused by fossil fuel burning while per capita emissions of developing countries are minute by western standards.

Regarding responsibilities of climate change mitigation; the international climate governance norms stipulated that developed countries should take a lead in

the control of greenhouse emissions and that mitigation should be pursued via domestic targets and timetables. Throughout the history of climate governance, Australia led by example in playing a laggard: not only obstructing the process to secure agreement on national emission targets, it adopted various illicit tactics and strategies to successfully negotiate concessions through inclusion of 'Australia Clause' and finally rejecting the ratification of the Kyoto Protocol. Australia's participation in international efforts in mitigation of climate crisis demonstrated the incongruence between climate governance norms and domestic climate policies. The consistent nature of climate policies under successive federal governments in adopting regressive action on climate crisis was heavily influenced by the structural dominance of fossil fuel industries in Australian political economy. The successive government's embrace of neoliberalism as project defining economic policy, underscored the politicization, scientization, economization and technocratization of climate governance and translating into minimalist commitment to meaningful greenhouse gas emissions management. The market as a discursive and material device became the general art of government. The dogma of carbon trading and use of different rhetoric from the 'no regrets' proviso to 'competitive advantage', and national interest' by the Labor and Liberal governments all reflected an apathy towards successful mitigation of climate crisis. The case study of Australia is particularly interesting as it displays discursive and structural power, domination and hegemony exerted by the government internationally and nationally in regulation of the environment, across climate, population and the society.

## **Objectives of the Research**

The main objective of the thesis is to trace the bio-political and historico-materialist nature of climate policy and the different modalities and configurations of interactions between nature and capital creating socio-natural links in neoliberal environmental governance.

As Foucault explained (1988:262) 'I set out from a problem expressed in the

terms current today and I try to work out its genealogy. Genealogy means that I begin my analysis from a question posed in the present'. Following Foucault this thesis is about the 'history of the present', a diagnosis of the current situation in order to trace its genealogy. In the light of current paralysis of international and national commitment to meaningful greenhouse gas emissions, investigating into the policy and political trajectory of environment, population and society as an object of regulation and control is warranted. The merit of genealogical analysis lies in the discovery of 'why' and 'how' contemporary practices and institutions of climate governance emerged out of conflicts, alliances and the exercise of power. Specifically, genealogy refers to 'why' and 'how' historically power and knowledge were related to each other and in doing so allowed a specific hierarchical system to emerge and work in climate governance.

The intention is to seek new insights into the terrain and specificities of climate policy in Australia created by new forms of social order, and the ways these were structured through the workings of rationality, power and politics. This research is concerned with the evolution of neoliberal transformation in Australia and its political, social and discursive impact on successive governments' climate policies, thereby disclosing the relationship between climate and the capitalist mode of production and to shed light on the process through which the object and political concern of climate crisis; and its possible solutions, was turned into exclusively an economic problem.

A central task of this thesis is to trace the genealogy of climate governance through a critical analysis of the domestic climate policy of consecutive governments in Australia from the 1980s to 2008 as a trajectory that connects the notion of sustainable development of the 1980's to the green economy concepts popularized during the course of 2000's. The policy terrain is a continuing chapter in the history of neoliberalism as a progressively hegemonic governmental rationality designed to create new modes of regulation and new avenues for capitalist accumulation and economic growth.

I propose to understand climate policies as a regime of power practices to investigate how climate change as an object of concern or a political problem was represented, structured and organized through the rationalities, apparatus, procedures and technologies of the government. The concept of governmentality helps to explore the *sociality* of such practices as routinized, normalized and sedimented rules of power . At the same time, it helps criticize the *political* logic of emergence and formation such practices in terms of different ways social relations, institutions are structured, challenged and contested. The merit of the Marxist conception of capitalist mode of production lies in the analysis of neoliberalization of nature, that is how climate policy as a discursive and micro-power practices operates within broader material macro-structures and facilitates the expansion of capitalist accumulation through the capture, pricing and monetization of environmental goods and services, including climatic systems.

## **Research Questions**

The central research question of this thesis is: how can bio-political and historical materialist frameworks help define specific features of climate governance in Australia? My core interest in exploring climate politics and failure of meaningful action on climate crisis is explored through the following secondary questions:

1. How does climate governance act as a discursive and material field of power relations, between various actors in the process of climate change governance, in public discourses as reflected in policy documents?
2. What relationship is linking the notion of climate change governance to the power-knowledge apparatus of political economy?
3. How is climate change governance accomplished in practical and technical terms?
4. How are these aspects of climate governance reflected in the period of climate policy-making at the Federal level from the early 1990s's to the late 2000?

## **Methodology-Discourse Analysis**

The outlined rationale, objectives and research questions point to the centrality of structural and discursive power in climate governance. I propose to understand policy as a regime of power and regulatory practices, using critical policy analysis

will generate insights as to 'why' and 'how' a particular policy was formulated and implemented. This involves analysis of how a particular definition of the problem and its solution emerged, how economic programmes and concepts were constituted as vectors of power, and how complex practices of deliberation, inclusion and exclusion developed defining the boundaries, norms and values that characterize a particular policy. Critical policy analysis will involve examining the importance of material interests and macro-social structures, social relations and institutions in the origin and characterization of a particular policy and its development.

The main methodological device for the empirical inquiry will be discourse analysis. As Howarth, Norval and Stavrakakis (2000:4) states:

*'Discourse analysis refers to the practice of analysing empirical raw materials and information including a wide range of linguistic and non-linguistic data-speeches, reports, manifestoes, historical events, interviews, policies, ideas, even organisations and institutions as 'texts' or 'writing'.*

In most basic terms 'a discourse is a shared way of apprehending the world; embedded in language, which 'enables those who subscribe to it to interpret bits of information and put them together into coherent stories or accounts' (Dryzek, 1997:8-9). However, discourses are not only representation and systems of meanings where the subjects subscribe to the shared ways of perceiving and understanding the world. Discourses also have a richer ontological role in constituting social relations and material practices (Howarth, 2010). Discourse analysis under the label of 'interpretive analytics' of social sciences is a useful methodological tool to investigate the process of 'problematization' (Foucault, 1984) which defines 'why' and 'how' certain things (issues, phenomenon, processes, behaviour) become a problem and how they are shaped as particular objects of thought. Foucault (1988:257) define

*'Problematization doesn't mean the representation of a pre-existing object, nor the creation through discourse of an object that doesn't exist. It is the set of discursive and non-discursive practices that makes*



*something enter into the play of the true and the false and constitutes it an object for thought (whether under the form of moral reflection, scientific knowledge political analysis etc.)'*

The problematization of climate governance includes particular objects of thought and practice including definition of the problems, causes, consequences, attempted solution, positive and negative consequences of these solutions and legitimizing principles. The issue of global warming can be divided into a series of distinct definitions of the problems, causes, consequences based on political, economic, social, technological and scientific assumptions. Similarly, the multiple actors involved, directly and indirectly, have their own conceptions, projects, interests, expectations on the basis of which they promote different discourses, modes of structuring and organizations.

Following Foucault, the focus of discourse analysis is on 'rules of formation' which make individuals perceptions and statements possible in the first place. The legacy of discourse analysis can be traced back to Foucault's work *The Archeology of Knowledge* (1972: 48-49), where he takes as a starting point the assumption that there are a set of 'practices that systematically form the objects of which they speak' and seek to reveal the 'regularities in dispersion' in these practices. He brought attention to discourse or 'multiplicity of statements' which produced 'coherent, unified and intelligible expressions of knowledge' (Foucault, 1972:21)

Foucault's conceptualization of the asymmetrical relation between power and knowledge that is the way in which power produces knowledge or knowledge comes to bear the mark of power is through organization of discourse, as he argued 'it is in discourse that power and knowledge are joined together' (Foucault, 1990:100). He shows how discourses are governed by a set of rules of construction and evaluation which regulate what may be said and by whom and define the institutional legitimacy of the speaker, in what context and with what effect (Rabinow, 1994). Foucault was particularly interested to the productive

function of power in the ways societies manage 'population' as he demonstrates how sex became central to the economic and political problem of population, 'through a whole web of discourses, special knowledge, analyses and injunctions settled upon it' (Foucault, 1990:26). For Foucault the emergence of a discourse was a precondition for the articulation of any form of knowledge, and so any account of knowledge that did not abide to the nature of discourse was considered void. Foucault's (1980:131) notion of the organization of forms of knowledge relates to his concept of 'regime of truth'<sup>1</sup> that is historically specific mechanisms which produce discourses that function as true in particular times and places. He believed that truth isn't outside power and every society has its own regimes of truth.

The interpretive perspective emphasizes the relationship between discursive and non-discursive practices. Discourses cannot be constructed, validated and transmitted in isolation of material or non-discursive practices. At the same time discourses have significant material effects which are used as 'technologies' to govern. As Foucault (1980:92-93) argues 'we must produce truth as we must produce wealth, indeed we must produce truth in order to produce wealth in the first place'. Discourses are therefore concrete systems of social relations and material practices that are intrinsically political as their formation involves the drawing of political boundaries between 'insiders' and 'outsiders' (Howarth & Stavrakakis, 2000:4). The constitution of discourses involves exercise of power as it excludes certain possibilities and consequently structures of the relations between different social agents. The relations between social agents' point to questions like who practices hegemony? Or why might one discourse have been successful in a specific historical context and underpin power struggles.

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<sup>1</sup> Regimes of Truth (Foucault 1980: 131) defines regimes of truth: that is types of discourse which it accepts and makes function as true, the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned, the techniques and procedures accorded value in the acquisition of truth and the status of those who are charged with saying what counts as true.

The genealogical analysis involves a close examination of a discursive and non-discursive practice or events in history, the birth of concepts and their subsequent transformation into “principles of domination” (Foucault 1991). It is focused on the process by which we construct origins and give meaning to particular representation of the past. Genealogical analysis traces establishment of contemporary practices and institutions which emerged out of specific struggles, conflicts, alliances and exercise of power. The intent is to problematize the present, revealing the power relations and processes which brought it into being, and was dependent on.

Foucault’s genealogical method for accessing ‘problematization’ starts with practices which are necessary to reveal why and how an issue was questioned, becomes an object of concern, a political problem to be analyzed, classified and regulated. Foucault state (Foucault, 1969 in Eribon, 1991:216).

*Rather than perusing the library of scientific books, as one so happily does, I had to visit a groups of archives, including decrees, regulations, hospital or prison register, judicial precedents.... I began analysis of a knowledge whose visible body is neither theoretical of scientific discourse nor literature, but a regular daily practice.*

Foucault (1986:12-13) argues these regulations and decrees are ‘practical texts’ or ‘prescriptive texts’, written for offering rules, opinions, and advice on how to behave.

As I take power and hegemony to be constitutive of practices of policy making, I will undertake a discourse analysis of policy documents, policy documents, legislations, speeches, reports, manifestoes, historical events, interviews, ideas, best practice guidelines, newspaper articles, political and commentaries as ‘practical’ or ‘prescriptive’ texts to provide an entry point to the genealogy of climate governance from 1980s to 2008. To develop a genealogy of climate policy I will reflect on the ‘thought’ (neoliberal political rationality) and the role it played in constituting the kind of ‘objects’ (climate crisis) and ‘subjects’ (population, individuals) that made

governing possible.

As the focus of the thesis is on the material, economic power reflected in the hegemony and governmentality, the focus of the discourse analysis is on economic climate governance at the national level climate policies aimed to achieve mitigation of emissions reductions.

Discourse analysis of the following policy documents, policy white-paper, legislations government and independent evaluation reports was carried out in a comprehensive manner.

- 1) National Strategy on Ecologically Sustainable Development, Commonwealth of Australia, 1992
- 2) Our Country Our Future, Statement on the Environment, Prime Minister Bob Hawke, 1989
- 3) One Nation, Paul Keating, 1992
- 4) The National Greenhouse Reduction Strategy (NGRS), Commonwealth of Australia, Commonwealth of Australia, 1992
- 5) Greenhouse 21C, Commonwealth of Australia, 1995
- 6) Safeguarding the future: Australia's response to climate change, 1997, Prime Minister John Howard
- 7) Australia's Climate Change Policy: Our Economy, Our Environment and Our Future, 2007, Prime Minister John Howard, 2007
- 8) The Garnaut Review, Commonwealth of Australia, 2008
- 9) The Carbon Pollution Reduction Scheme White Paper, Commonwealth of Australia, 2008

In addition to the domestic policy documents, legislations from the 1990's to 2008, and supplementary sources, I have analyzed international climate policy documents, best practice policy guidelines with regards to the Kyoto Protocol, flexibility mechanisms such as carbon accounting, sinks, Clean Development Mechanism (CDM), newspaper articles, political commentaries, ministerial speeches, so on.

In this thesis, discourse analysis is used primarily as a framework in the

sense that it points out a set of key factors which enable an understanding of the phenomenon of climate governance. It focusses on the process and practices of policy making, looking for regularities in text and language situated within a particular context and how this affects practice vis-à-vis institutions and identities. According to Backstrand (2001:47):

*In a discourse perspective, empirical material cannot be used to verify or falsify hypothesis and in this sense it is not a theory. Rather than being an objective standpoint in the choice between different theories, a discourse analysis can generate arguments in favour or against different theories. Empirical data in discourse analysis are best understood as arguments in a theoretical debate.*

## **Thesis Structure**

### **Chapter-I-Theoretical Framework -Assemblage of Foucault-Marx**

Chapter I delineates the specific elements of the main theoretical framework through which the object of study is going to be investigated. Through a theoretical amalgamation of Foucault's governmentality and Marx conception of primitive accumulation, the aim is to forge a connection between historical materialism and the technical notion of bio-politics to elaborate political and epistemological grid of neoliberal environmental governance. The central research question preceding the theoretical assemblage is: how do circuits of capitalist valorization intersect and interact with government in climate change governance? The theoretical convergence between Foucault's governmentality and Marxist conception of primitive accumulation is possible due to the shared understanding of capitalism as a central problem and of capitalist reproduction, and is therefore relevant in understanding and explaining different modalities of power and socio-ecological configurations, in which the formal logic of capital finds its expression in context-specific, spatio-temporal constellations, and more specifically in neoliberal climate change governance. The issue of climate crisis exemplifies the constitutive tension between abstraction and concreteness making it suitable to analyze it as a

contemporary form of enclosure and new wave of primitive accumulation.

## **Chapter II – History of Climate Change Governance in the International Context**

This chapter sets the background to the critical explanation of the historico-materialist and bio-political character of climate policies in the Australian context corresponding to the international climate negotiations. The purpose is to provide a prelude, in framing the debate by tracing the socio-historical context and chronology of international climate negotiations and policy milestones as a ‘history of the present’ to grasp the dominant discourses and regimes of practices driving international climate governance since 1990’s until 2012. Through an analysis of important policy milestones, it aims to demonstrate the terrain and specificities of shifting discursive, socio-material frames and political settlements that have defined international climate change negotiations and policies at particular historical moments. The chapter further highlights institutional arrangements of climate governance as a result of the complex process of political bargaining and negotiations between a range of nation-state, non-nation state actors and identities. The key assumption here is that climate governance and politics is an imperious constant that runs through the history of neoliberalisation, and is configured to create avenues for capitalist accumulation by reworking state-market and civil society relations by expanding and deepening of commodity production, circulation and exchange. The trajectory of climate governance beginning with sustainable development as a road to the Kyoto Protocol and through to the present concepts of green economy is discussed. The institutionalization of norms and mechanisms to facilitate greenhouse gas emissions corresponding with the rationalities and virtues of competition and free market and maintenance of overall economic growth.

## **Chapter III – A Genealogy of Ecologically Sustainable Development (ESD) and Bob Hawke**

This chapter details the genealogical terrain of climate governance and politics in Australia, situating it within the field of Ecologically Sustainable

Development policy (ESD) of the Bob Hawke government in the 1980's. Through the application of a Foucauldian-Marxist theoretical framework the attempt is an inquiry into a particular 'problematization' of climate crisis that is why and how it actively constructed climate crisis as an object of concern or as a political problem, and defined the specific elements, techniques, processes, that constituted the solution to respond to the problem. The chapter details the emergence of climate as an object of public and scientific concern, that was made thinkable and governable through sustainable development discourse, defining a bio-political horizon, intertwining life and politics. While sustainable development was deployed as an ecological imperative to secure the life of the biosphere, neoliberals prescribed the economy as the very means of achieving that security. Critical to the ambition of an ecologically sustainable development policy was continuation of economic growth and sustained capitalist accumulation. Reflecting this, the target for reducing greenhouse gas emissions was made conditional upon these being having no adverse effects on the Australian economy and upon trade competitiveness, in absence of similar action by other countries.

#### **Chapter IV – National Greenhouse Reduction Strategy and Paul Keating**

This chapter critically examines the nature of climate policy of the Paul Keating government which developed between competing discourses of sustainability and realignment of electricity production in Australia according to neoliberal principle of 'self-correcting' market. Restructuring of the electricity industry took place under the active regulatory intervention of the state in the form of competition principles translated into governing rules. Energy policy was recreated through the process of market valorization, corresponding to the regulatory structures of economic competition. The electricity industry restructuring and National Greenhouse Reduction Strategy (NGRS) were developed simultaneously. The principles of economic efficiency of a competitive electricity market ran contradictory to the principles of ecological sustainability linked to the measures and strategy formation of NGRS, as reflected in a significant increase in greenhouse gas emissions during this period. The NGRS policy, characterized by the implementation of actions of a

'no-regrets' nature that is those that have net benefits (or at least no net costs) marked an important milestone in the ruthless expansion and consolidation of fossil fuel extraction interests in the climate politics of Australia.

## **Chapter V – Carbon Governmentality and John Howard**

This chapter examines the emergence of the new master signifier in the form of carbon governmentality and carbon accounting under the Kyoto Protocol, and specifically focuses on techno-politics of carbon accounting in Australia under the Howard government. From the 'no regrets' policy of Paul Keating, under Howard government there was acute hostility towards any action on climate mitigation and therefore 'no action at all'. Through the analytics of carbon accounting the chapter attempts to demonstrate accounting as a specific governmentality, as a complex assemblages between human and extra human mechanisms for measuring, monitoring and verifying carbon. Carbon governance was accomplished in practical terms through categories of accounting including 'national carbon sinks' which had a direct bearing on Australia's commitment to emissions reduction and consequently on economic competitiveness. The techno-politics of a national carbon accounting enabled Australia to secure concessions through the loophole of the 'Australia Clause' allowing Australia to inflate its baseline emissions from 1990. By relying on land-clearing cuts and forestry carbon sinks, Australia avoided any serious action on reducing fossil-fuel emissions. Lastly the chapter examines the politics of Howard government's decision not to ratify the Kyoto Protocol, and successive strategies, policies and partnerships such as Securing Australia's Energy Future and Asia Pacific Partnerships designed to entrench fossil fuel interests and expand accumulation nationally.

## **Chapter VI- The Garnaut Moment 2008 and Kevin Rudd**

This chapter undertakes a critical analysis of the Garnaut Climate Change Review of 2008, as it formed the most comprehensive government inquiry into the climate crisis in Australia. The significance of the review is twofold: the context and



the content. The review took place during the period marked by global revitalization, concern and awareness on climate issues triggered by the IPCC's Fourth Assessment Report and the Stern Review on the Economics of Climate Change. However, the most important landmark of this period was the global financial crisis, which resulted in renewed 'problematization' of climate crisis as an economic problem. The solving of the crisis was considered as part of the solution to many other enumerated problems embodied in notions of the 'green economy' or 'green growth'.

On the domestic front the review marked the transition from the Howard to the Rudd government. On assuming power, the Rudd government promised to introduce domestic climate policies based on the review. The findings and recommendations pointed to the need for an emissions trading scheme (ETS) as the only possible solution to the problem. The Garnaut review received bipartisan political support and an interesting case-study demonstrating a close nexus between neo-classical economics of cost benefit calculation and neoliberal logic of market as an epitome of perfection, fairness and justice. However, a critical analysis of the review recommendations depicts the chasm between climate science and politics. The review recommended that reducing emissions to a dangerous 450-500 ppm was in the national interest of Australia so not to reduce economic growth. The analysis portrays the installation of a carbon market as cost-effective and efficient but the model was ridden with flaws, ignored inter-generational and intra-generational injustice led to the unfair distribution of costs/impacts across sectors and most importantly bolstered injustice between nation-states through offsetting as a way to help Australia avoid emission reductions. Most importantly the Garnaut's realpolitik of carbon trading was to sustain capital accumulation and economic growth at the cost of environmental protection, population and culture.

## **Chapter -VII - Carbon Pollution Reduction Scheme and Kevin Rudd**

This chapter examines the dynamics and specificities of emissions trading scheme in Australia, the cornerstone of the Rudd government's policy on climate

crisis. The chapter attempts to explore 'the politics of market design' centered in permits and offsets and its role in supporting the carbon trading dogma. The chapter discusses the construction of a carbon market/commodities as a specific governmentality, that enables enclosure for a new wave of primitive accumulation. The Carbon Pollution Reduction Scheme (CPRS) demonstrates a disjuncture between the rhetoric of climate change as the 'greatest moral challenge' followed by symbolic ratification of the Kyoto Protocol on the other hand and the reality of meaningful of effective environmental policy in practice. The CPRS was built on a series of caveats as result of industry lobbying. The policy had weak reduction targets of 5-15% below 2000 by 2020 dependent on action by other advanced economies and included generous assistance package for polluters in the form of free permits for emissions intensive trade exposed industries (EITEI) and also structured assistance for other exposed sectors. It allowed for unlimited permit imports in the form of offsets from international Kyoto units, from project-based mechanisms in developing countries. The proposed offsets from Reduced Emissions from Deforestation and Degradation REDD+ emerged as a key strategy for Rudd government for displacing of emissions reduction elsewhere. The chapter confirms that carbon trading as a machinery of liberal government, is a contemporary form of enclosure for capital 'accumulation by decarbonization' based dispossession and carbon colonialism.

## **Chapter-VIII- Conclusion**

The closing chapter of this thesis reflects on the theoretical framework, and on its merit in the understanding of Australian climate policy.

The history of climate governance since 1980s demonstrates the reliance of successive governments on variants of market dictated climate policy, based on weak definitions of national and international climate responsibilities strategies/tactics to displace abatement tasks spatially and temporally, to serve a protectionist agenda for narrowly defined economic interests for energy intensive industries and above all de-democratization by economization of 'all life' undermining principles of justice, political cultures, democracy and citizenship.



# Chapter 1 - Theoretical Assemblage of Foucault's Governmentality and Marx's Primitive Accumulation in Climate Change Governance

The central research question of this dissertation is how can a bio-political and historico materialistic framework help define the specific features of climate crisis and its governance? Following from the central research question, the main objective of the thesis is to unravel different modalities and configurations of interactions between capital and climate creating socio-ecological links in neoliberal environmental governance.

This chapter aims to draw out the theoretical convergence of Foucault's governmentality (1991) and Marxist conception of primitive accumulation (1990) to understand the historical development of the relationship between socio-ecological governmentality and capitalist mode of production. The main assumption being: consecutive problematization of climate crisis and its governance has seen the abstraction of nature, converting 'natural distinctness' into 'economic equivalence', determined by exchange values and the ex-ante creation of capital-based-use values.

The chapter is subdivided in three sections:

## *Conditions of Climate Governance:*

In this section the aim is to examine Foucault's (1991) conceptualization of governmentality to analyze how the *problematization* of global warming emerged as a consequence of capitalist historical development from liberalism to neoliberalism.

Climate governance as an ensemble of procedures, policies, institutions, calculations and tactics is aimed at creating a specific form of social order structured through the workings of rationality, power and politics. The merit of governmentality lies in exploring the specificities and terrain that is interrogation of diverse sites of climate governance for example households, professionals, accountants, technology, markets, forests, renewable energy all becomes interwoven with the issue of climate and how we organize our societies. The notion of governmentality is useful in integrating micro and macro power relations pointing to the discursive and material features of environmental management to the regulation of nature, individual behaviour, population and societies.

*Conditions of production:*

This section aims to review various strands of ecological Marxism to shed light on the relation between capitalist production and climate governance i.e. the process through which the grammar of climate crisis and its possible solution was constituted as an economic one, a crucial element of market valorisation. Climate politics must be seen as a part of broader material structures and practices of re-working of socio-nature inherent in the consistent imperative of history of neo-liberalization: to facilitate the expansion of capital accumulation through the capture, pricing and monetization of eco-system services and other environmental goods including climatic systems. This section will attempt to combine specific elements of historical-materialist understanding of ecological crisis beginning with Marx's (1990) articulation of human production as a combination of socio-nature and material relations and dual subsumption of labour and nature in capitalist production. The subsumption of labour and nature represents a specifically capitalist abstraction from the differentiated unity of human and extra-human nature and increasing domination of exchange value over use values referred to as the opposition between 'natural distinctness' and 'economic-equivalence'. The continuities and disruptions in the interchange between human modes of production and natural systems resulting in 'metabolic rift' (Foster, 2000) accompanies a periodic crisis of accumulation that marks capital's reproduction. The notion of the 'production of nature' conceptualized by Neil Smith (Smith, 2008)

is intimately related to the qualitative change of nature in capitalism which lies in the altered relation between use-value and exchange-value. Smith (2008) follows Marx in understanding the 'production of nature' within the capitalist mode of production actively produced through transformation of nature and facilitated by institutions such as the market. Under capitalism, appropriation of nature and its transformations into means of production occur for the first time in a world scale as appropriated nature becomes a productive force. O'Connor's (1998) contribution expounds the contradiction between forces and relations of capitalist production as he analyses the crucial role of state as a mediator/interface between capital and nature to regulate the conditions of productions such labour, nature, infrastructure as productive force (quantity, quality, place and time) in order to ensure its continuing supply to capital. In Moore's (2015) perspective rather than looking at history of capitalism and its impact on the environment one should posit an intertwined relation between 'endless accumulation' and the 'endless conquest of nature' (Moore, 2015). As Moore (2015) puts it 'capitalism does not have an ecological regime, it is an ecological regime'.

#### *Conceptual Framework of the Thesis:*

Based on the theoretical assemblage of Foucault's governmentality and Marxist conception of primitive accumulation, this section provides a conceptual framework in understanding of operation 'socio-ecological governmentality' in neoliberal climate governance. The conceptual framework for understanding the metabolization of issues between scientific, economic and political frames of reference in the operation of climate governance. The conceptual framework will help delineate the link between governance as a discourse to manage and promote the social stability necessary fundamental to capital- accumulation.

## ***Conditions of Governance***

### **Foucault's conceptualization on Governmentality**

The fulcrum of Foucault's overall intellectual contribution was his concern on power.

Foucault's conceptualization of 'microphysics of power'<sup>2</sup> through the reciprocal constitution of power-knowledge relation (Foucault, 1977:29) took a different direction when he re-engaged himself to articulate the genealogical<sup>3</sup> examination of the concept of *governmentality* or power of government (Foucault 1978, 1991). In recommending the study of power should begin from below, Foucault was further interested in two interrelated issues: first how do the diverse micro relations of power are centralized and articulated in becoming general mechanisms which are reproduced to more encompassing forms of domination and second how specific power practices are linked to the production of knowledge.

By the term *governmentality* Foucault (Foucault, 1991:102-103) meant three things:

*1)The ensemble formed by institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of this specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security. 2) The tendency that, over a long period and throughout the West, has steadily led towards the pre-eminence over all other forms (sovereignty, discipline, and so on) of this type of power - which may be termed "government"- resulting on the one hand, in the formation of a whole series of specific governmental apparatuses and, on the other, in the development of a whole complex of knowledges (savoirs).3)The process, or rather the result of the process, through which the state of justice of the middle Ages, transformed into the administrative state during the fifteenth and sixteenth centuries gradually became 'governmentalized'.*

Foucault's conceptualization of *governmentality* as a 'specific form of power' exercised through governing apparatuses, bureaucratic knowledge (*savoir*) and

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<sup>2</sup>Micro-physics" of power, which is constituted by a power that is strategic and tactical rather than acquired, preserved or possessed (Foucault, 1977:26)

<sup>3</sup> Foucault's philosophical development can be divided into three distinct phases. In the first period (History of Madness, 1961; The Order of Things, 1966; The Archeology of Knowledge, 1969) his approach was 'archeological' to undertake how a given discourse manages to create and investigate its own objects. In the second period (Discipline and Punish (1977, The History of Sexuality, Vol I, 1978) the emphasis was 'genealogical' how historically power and knowledge relate to each other and in doing so, allow a specific hierarchical system to emerge and work. The third phase Foucault's work (The Use of Pleasure, The Care of Self 1986, The Birth of Biopolitics, 2008) was based on his analysis on different modalities through which in the West, individuals and collectives have constructed themselves in relation to various power /knowledge dispositifs.

technologies of reason of state was intimately linked to bio-politics<sup>4</sup>. According to Foucault a set of practices which he denoted as *governmentality* was organized around four main fields of intervention: 'birth-rate, mortality rate, biological disabilities and the effects of environment' (Foucault, 2003:245). Through the related concept of bio-politics, Foucault shows how 'techniques of power' and a series of governmental strategies was extended to all aspects of human life including health, hygiene, longevity, race and accordingly regulate the behaviour of the entire population (Darier, 1999, Dean 1999).

First, bio-power was exercised through demographic regulation and statistical analysis of birth rate, death rate and so on. As Foucault argues techniques such as 'forecasts, statistical estimates and overall measures' which were unpredictable, uncertain and to 'intervene at the level of their generality' (Foucault, 2003:246). Secondly this power extends to the medicalization of society referred to as health variables such as endemic and epidemic diseases through conception of death, as termination of individual and collective performances in productive life. Third bio-power intervenes by means of a development of a pervasive system of governmental insurance in events such as accidents, infirmities and anomalies etc. Lastly through bio-politics government creates intermediate political space between the natural environment and artificial urbanization, 'investing in particular, the process of shaping natural systems (including climatic systems) according to governmental expansive necessities' (Darier, 1999:23). Through all these variables there were deliberate interventions constituting intersection of life and control and institutions of the government.

Bio-politics as a reflection of a 'politics of life' in general has close relevance to the concerns of environmentalism' (Darier, 1999:5) where nature and

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<sup>4</sup> Foucault (The History of Sexuality, 1978) saw the emergence of techniques of power centered on the individual body as 'micro-politics of the body'. At the same time emergence of power on 'man as species' as they form a global mass that is affected by overall processes characteristic of birth, death, production, illness and so on'. Foucault (In Society Must Be Defended, 2003) termed this new technology of power a bio-politics of human race and in History of Sexuality (1978) he calls it a bio-politics of population.



humans are deliberately brought together within the fields of governance and rationality of government through the exercise of power. Foucault argues bio-politics emerged when sovereignty started to be conceptualized as that which deals with nature, as he (Foucault 2007:23) state:

*...or rather with the perpetual conjunction or rather with the perpetual conjunction, the perpetual interaction of geographical, climatic, and physical milieu with human species insofar as it has a body and a soul, a physical and moral existence.. the sovereign will be someone who will have to exercise power at the point of connection where nature, in the sense of physical elements, interferes with the nature in the sense of nature of human species.*

Foucault's analysis of bio-politics in the urbanization and migration particularly concerns the relationship between the emergence of bio-politics and the process of industrialization or the rise of capitalism as mode of production. There exists an inextricable link between the two. As Foucault states in the first volume of *The History of Sexuality* (Foucault, 1978: 140-141)

*The bio-power was without question an indispensable element in the development of capitalism; the latter would not have been possible without the controlled insertion of bodies into the machinery of production and the adjustment of the phenomena of population to economic processes...the adjustment of the accumulation of men to that of capital, the joining of the growth of human groups to the expansion of profit, were made possible in part by the exercise of bio-power in its many forms and modes of application. The investment of the body, its valorization and the distributive management of its forces were at the time indispensable.*

The disciplinary power and regulatory power of bio-politics were combined and interlinked in what Foucault called a 'normalizing' society (Foucault, 2003:253). The various techniques and new forms of power –discipline, regulation and normalization were enabled to meet the needs of an emerging capitalist society to economize the organization of population and to insert them into processes of production, economic profitability and political utility. Foucault was not only interested in codification of the existing power relations but in consolidation and institutionalization. As Foucault (2003:30-1) puts it:

*'immanent multiplicity of relations and techniques of power are colonized, used, inflected, transformed, displaced, extended, and so on by increasing general mechanism and forms of overall domination...and above all, how they are invested or annexed by global phenomena and how more general powers or economic benefits can slip into the play of these technologies of power'.*

Foucault's analysis of bio-politics and capitalism is relevant as the critique of political economy theorized by Marx can be said to provide conditions of possibility for the exercise of bio-political *governmentality*. According to Lemke (2005) Foucault himself established the convergence of the theoretical triad of bio-politics, *governmentality* and capitalism when he insisted that Western society, in the course of the second half of the Eighteenth century has crossed a 'threshold of biological modernity' and had wagered the life of the species on its own political strategy' (Foucault, 1978:143 c.f Lemke, 2005). As human beings begin to wager their life as species on the products of their bio-political strategies and technological systems, they began wagering the lives other species as well. Bio-politics as mode of power brings 'all life' into the field of political calculations, including human and nature and material conditions upon which life is dependent inside the strategies and technologies of power.

Biopolitics not only included physical life but also the moral and political existence as Foucault argue (1978:142) 'for the first time in history, no doubt, biological existence was reflected in political existence'. Before the emergence of bio-politics the relation between life and politics were extrinsic, distinct from each other, polar-opposites and defined by different fields of intervention. However, after the emergence of bio-politics the two fields merged into one set of phenomena and become indistinguishable.

Life and population became a target of political power and their relationship became intrinsic (Leonardi, 2012). Foucault notes that previously population was managed through territorial function, which was a mere sum of individuals inhabiting a specific geographical area or territory. With emergence of bio-politics population is no longer external it becomes a governmental function as he insists 'my proposal is

to analyze bio-politics as an 'art of government' (technical-political object of management and government) since the active regulation of this development is the peculiar goal of the art of the government. In his words (Foucault, 2008 :70-71)

*the naturalness of population signify'?...in fact population is not a primary datum ; it is dependent on series of variables. Population varies with climate; it varies with the material surroundings. It varies with intensity of commerce and activity in the circulation of wealth...and it is this naturalness identified in the fact of population is constantly accessible to agents and techniques of transformation'.*

The notion of population provides a grid of intelligibility through which governmental *dispositif*<sup>5</sup> is accomplished. Current environmental concerns including climate change can be regarded as an extension of this 'bio-politics' to all life-forms (Darier, 1999) so it is necessary to extend the notion of bio-politics to the management and control of conditions of life in general. According Francois Ewald (1986:9) 'ecology is not a rupture, rather it accomplishes the dream of bio-politics'.

Population and politics merged into one, creates a field of intervention for the government, the possibility to govern the environment, where the 'political artificiality and species naturality become one indistinct domain exposed to governmental rationality, that is life, nature, government becomes interconnected' (Leonardi, 2012: 25) Foucault (2007:21) conceptualized milieu as a form of *natural-artificial* construct:

*a set of natural givens- rivers, marshes, hills- and a set of artificial givens- an agglomeration of individuals, of houses etcetera, this together acts as a field of intervention, a target of intervention of power. The milieu is a certain number of combined, overall effects bearing on all who live in it. It is an element in which a circular link produced between effects and causes, since an effect from one point of view will be a cause from another.*

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<sup>5</sup> Foucault use the term *dispositif* in 1977 'The Confession of the Flesh' interview where he states' what I am trying to pick up with this term, is firstly a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decision, laws, administrative measures, scientific statements, philosophical, more and philanthropic propositions-in short the said as much as the unsaid. Such are elements of the apparatus. The apparatus itself is a system of relations that can be established between these elements.

The milieu as a natural and artificial construct points to the socio-ecological link as individuals depend on environment and material conditions within which they live and environment is social as it is modified and affected by individuals who live within it. The milieu becomes one single nodal point where separate domains of social and natural are merged as a field of intervention of power directed to the conditions of life to obtain desired effects in socio-economic and political field. The 'heterogeneous elements of the environment comprising the *natural* and the *artificial* are subjugated to an *abstraction* in order to be formally managed and politically regulated' (Leonardi, 2012:26).

Foucault's conceptualization of problematization has close relations to the understanding of environment as subordinated to *abstraction*. Foucault conceptualized '*problematization*' as the definition of material practices that constitute the conditions upon which what was previously taken for granted emerges as an object of government, and at the same time exposed to power/knowledge relations and to a potentially autonomous process of subjectification (Foucault, 1978). Foucault refers to *problematization* as the emergence of certain objects of thought such as 'madness', sexuality or climate crisis. The unproblematic field of experience, a set of practices which were previously accepted and familiar without question discussions become progressively contested issues, incite new reactions, object of new public interests and the target of social institutions, discursive practices and technologies of power and politics.

Foucault's notion of governmentality is helpful to analyze how the problematization of environment emerged as a consequence of capitalist historical development from liberalism to neoliberalism. In liberalism the first wave of environmental issues was linked to industrial production such as pollution and depletion of natural resources. It was only after the establishment of population as a target for governmentality from liberal to neoliberal governmentality (Rose, 1999; Harvey, 2005) that it became a political issue. Nature was posited in terms of exchange in liberalism, whereas in neo-liberalism nature is constituted as a political surface upon which new

commodities are produced based on creative conception of economic competition, entrepreneurship and so on. Neoliberalism as technique of power links macro-political aims with micro- management of life. The problem of environmental crisis was made visible through fields of knowledge (rise of political economy) politics (the bourgeoisie rule and proletariat resistance) and technology (productive applications for systematic pollution) (Leonardi, 2012).

The establishment of population as a target for governmentality opened up new configurations of relationship between the natural environment and the social environment and politics. As Leonardi (2012:55) puts it ‘without the peculiar intertwining of life and politics which defines bio-political horizon, the emergence of the environment as an object of public and scientific concern would be unthinkable’.

Foucault’s ideas of bio-politics and governmentality is critical in understanding the contemporary environmental crisis for three reasons: First, the concern with environmental crisis is closely linked to what Foucault called ‘regulatory bio-politics of the population’. Second, development of contemporary bio-politics has allowed institutionalization of new forms of knowledge through scientific and economic expertise based on bio-economic understanding of environment. Third, the articulation of bio-politics and governmentality led to the rise of techniques, procedures, tactics for managing population and environment.

In order to comprehend the theoretical amalgamation of bio-political *governmentality* and the capitalist mode of production as a grid of intelligibility for understanding of contemporary climate change crisis, it is important to analyze independently the Marxist approach of nature and capitalist mode of production.

## ***Conditions of Production***

### **Marx’s conception of Capital as Nature**

Marx's conception of nature begins with the basic premise that nature is shaped by human production and that human production can be understood in terms of the mutual constitution of its social form and material content. The relevance of Marx's approach lies in the fact that human history helps account for the environmental disharmonies associated with human production. Marx's emphasis on historical materialism can be depicted from the following (Marx and Engels, 1845:148-60)

*The first premise of all human existence and, therefore, of all history is that men must be in a position to live in order to be able to make 'history'. But life involves before everything else eating and drinking, housing, clothing and various other things. The first historical act is thus the production of the means to satisfy these needs, the production of material life itself. And indeed this is an historical act, a fundamental condition of all social history which today, as thousands of years ago, must daily and hourly be fulfilled merely in order to sustain human life.*

Marx analyses human history from viewpoint of production of wealth, defined as use values, that is anything directly used for consumption or indirectly for means of production. Marx argue (1990:36-45) 'Use values ...constitute the substance of all wealth, whatever may be the social form of that wealth so an increase in the quantity of use values is an increase of material wealth'. Both nature and labour contribute to the production of use value or wealth as the worker cannot create wealth without the nature and labour therefore produces wealth 'by effecting exchange of matter between man and nature' (Marx, 1990:183-84). Marx (1990:290) further adds 'the labour process is purposeful activity aimed at the production of use-value. It is an appropriation of what exists in nature for the requirement of man. It is the universal condition for the metabolic interaction [*Stoffwechsel*] between man and nature, the everlasting nature-imposed condition of human existence, and it is therefore independent of every form of that existence, or rather it is common to all forms of society in which human beings live'.

The merit of Marx's approach lies in the fact that he contends the significance of labour and nature as sources of wealth can be understood in terms of socially mediated relations and character of labour and capitalist production.

Marx's analysis of pre-capitalist societies is relevant here. According to Marx pre-capitalist societies characterized by agriculture and landed property was based on an economy where the main objective was to create use-values devoted to mere subsistence of communities with no interest for generation and accumulation of surplus. The main purpose of labour was limited to simple reproduction of the community form as Marx (1993:471-472) state in *Grundrisse* 'the aim of this work is not the creation of value...its aim is sustenance of the individual proprietor and of his family, as well as of the total community'. Marx (1993 :473) puts it:

*In this natural community...the earth is the great workshop, the arsenal with furnishes both means and material of labour, as well as the seat, the base of the community. They relate naively to it as the property of the community of the community producing and reproducing itself in living labour. Each individual conducts himself only as a link, as a member of this community as proprietor or possessor. The real appropriation through the labour process happens under these presuppositions which are not themselves the product of labour, but appear as its natural or divine presuppositions.*

In pre-capitalist societies nature and man are treated by one another as inorganic conditions for the reproduction of community; the mediation between the two is concrete, centered on the production of use values and ultimately satisfaction of social needs. According to Marx labour before capitalism is a qualitative practice represented by simple circulation of (C-M-C) where money is benchmark for usefulness of a given commodity. There unity between man and nature is concrete. As Marx argues (1993:471-472) 'the natural unity of labour with its material presuppositions which is to say concrete mediation-via a use value oriented labour process between man and nature'.

In Marx's approach the dialectic between the capitalist mode of production and the natural system starts with the surplus labour value, as an essential determinant for the rate of capital accumulation and an essential characteristic of capitalist mode of production. As Marx argues (1990:511). 'thus we may say that surplus value rests on a natural basis namely on the originating productivity of labour which produces more than absolutely necessary subsistence of the worker, a natural productivity

which of course rests on qualities of its inorganic nature-qualities of soil, etc.' With the onset of capitalism the natural unity and concrete mediation between man and nature breaks down with the establishment of complex articulation of (M-C-M<sub>1</sub>) based on exchange value and surplus oriented abstract labour.

Marx draws attention to two aspects which are hinged to the concept of primitive accumulation: first, land acquisition and second population management that is the phenomenon of relative surplus population. Marx (1990: 873 ) in his title 'The Secret of Primitive Accumulation' referred to the primitive accumulation like 'the original sin in theology' and stated:

*In the history of primitive accumulation, all revolutions are epoch-making that act as levers for capital class in course of formation; but, above all, those moments when great masses of men are suddenly and forcibly torn from their means of subsistence, and hurled as free and 'unattached' proletariat on the labour market. The expropriation of the agricultural producer, of the peasant, from the soil, is the basis of the whole process. The history of this expropriation, in different countries assumes different aspects and runs through its various phases in different orders of succession and at different periods.*

Marx documents the process of expropriation through land enclosures, extreme violence and exploitation and his characterization of primitive accumulation as violent related to exercise of power and coercive force was necessary to create conditions of possible for capitalist relations of production. The process of accumulation is ongoing process as Marx argue ( 1990: 876) 'accumulation is only the continuing development of what appears as a particular historical process in primitive accumulation'.

According to Marx the only use-value that is absolutely required for capital accumulation is the use of labour power which is the ability to produce surplus labour, hence of surplus value. Surplus labour value is objectified as commodities which have exchange value as products in the market (Burkett, 1999). In short, 'when a commodity commands a money price, the particular concrete labour that



went into is production is validated as socially necessary (abstract) labour without regard to the mode of its expenditure' (Burkett, 1999:58). The worker is socially separated from natural conditions of production and from the subjective conditions of production, that is labour capacity is the immediate use value for which it has to exchange itself. According to Marx the exchange process involves real abstraction from particular characteristics of concrete labour that produced the commodities whose value is equated in trade.

The separation of producer and means of production is accompanied by an increase in the level of abstraction. As Marx argue (1993:164) 'these objective dependency relations appear, in antithesis to those of personal dependence....in such a way that individuals are now ruled by abstractions, whereas earlier they depended on one another'. The system of exchange value exchange of equivalents is measured through labour and turns into the appropriation of alien labour and the complete separation of labour and property.

The separation of labour from means of production is closely related to the conversion of natural conditions into separate conditions for capital's exploitation of free labour power thereby breaking the unity between man and nature. As Burkett states (1999:65) 'the increasing dominance of exchange value over use value thus progressively converts nature's contribution to wealth production into a new social form specific to capitalism-with natural conditions now appearing as 'separate' conditions for the reproduction of 'free' labour power and the objectification of its labour into vendible use values'. Capitalist reproduction occurs on a 'continually extending scale' ( Marx, 1990: 364) is made possible through the exploitable configuration of space and time, inverting the relationship between town and countryside, creating a 'metabolic rift' (Foster, 2000).

To summarize, the accumulation of surplus value through labour power represents (a) capitalist abstraction from the necessary unity of man and nature and (b) the social demotion of nature and producers and subordination of value to mere conditions of money making.

## **Marx conception of Dialectics of Nature and Capital**

International debate about the relationship between Marxism and ecological thought has flourished in the rich analysis of Paul Burkett (1999) Jason Moore (2011), John Bellamy Foster (1996), Foster and Clark (2010), Neil Smith (2008), James O Connor (1998), Harvey (1996) and Heynen et al (2007).

Burkett (1999) shows how in Marx's work, the dialectal relation between capitalist mode of production and environmental crisis is based on two dependent processes: (1) the crisis of capital accumulation based on the imbalance of capital material requirements and natural conditions of raw material production and the (2) rural-urban organization generated by capitalism that thereby disturbing the quality of human social development.

The first tension between capital's material requirement and natural conditions of raw materials production can be explained through what Marx termed as overproduction, which he called as 'general law' of accumulation. Marx proposed 'the rate of profit is inversely proportional to the value of the raw materials' (Marx 1981, Capital-III : 111).

Capitalism's basic motive is to generate surplus profit vis-a-vis surplus labour, and in order to achieve that, it needs drive down the inputs or costs of raw materials while ensuring that there is simultaneous expansion in material volume of production, across space. The dialectic can be depicted through what Marx describes as the overproduction of machinery' or 'underproduction of raw materials' (Marx, 1990 :119). So with increasing productivity and technological advance, capital needs to constantly appropriate materials of production in order to achieve an expansion of value and surplus value. Also in order to drive down the cost of inputs/ capitalism simultaneous expands geographically to extend the

material volume of commodity production (Burkett, 1999; Moore, 2009). This is further increased in competitive capitalist economies where every individual capitalist tries to cheapen its commodities, by increasing the productiveness of labour (Marx, 1990).

This dialectic between overproduction and underproduction results in under-valuation of natural conditions as depicted by John Bellamy Foster (1994:123, c.f Burkett, 1999 :110)

*Capitalism maximises the throughput of raw materials and energy because the greater this flow-from extraction through the delivery of the final product to the consumer –The greater the chance of generating profits. And by selectively minimising labour inputs, the system promotes energy using and capital intensive high technologies. All of this translates into faster depletion of non-renewable resources and more waste dumped into the environment.*

In relation to this Foster also explains how capital's greed for raw materials and energy is not only quantitatively anti-ecological but also capitalist valuation of throughput according to necessary wage labour time is a qualitatively anti-ecological representation of wealth or use value<sup>6</sup>.

The notion of the 'production of nature' conceptualized by Neil Smith (Smith, 2008) is intimately related to the qualitative change of nature in capitalism which lies in the altered relation between use value and exchange value. Smith (2008:28) argues , nature is not separate from the same as society as it is 'socially produced'; the 'differentiated unity' between society and nature is actively produced through labour processes that transform and retransform nature, guided by dominant social

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<sup>6</sup> Moore argues (2009:18) 'The sustenance of capitalism through quantitative cheap inputs was supplemented by qualitative moment of revolutionizing ecological relations of production and mobilization of succession of 'great leaps forward' in the relative ecological surplus. Ecological surplus value is produced through two forms of accumulation by appropriation one pivoting on process of biophysical reproduction (labour power, forestry, agriculture) and the other on geological extraction of energy and minerals.

relations of production and reproduction. The intensity and depth of this can be understood by Marx's phrase (Marx, 1993) 'Coal is Coal. It becomes fossil fuel only in certain relations'.

Smith (2008:52) employs Marx's method of 'rising from the abstract to the concrete' to explore how vectors of social differentiation in produced nature unfold at different levels of 'logico-historical' abstraction. In his analysis Smith begins with production in general, and then production for exchange and finally capitalist production, demonstrating at each level of abstraction the influence of class relations and social institutions and how it regulate the division of labour and nature as they become mediated by complex value determination. In production in general, labour transforms nature to produce use values, to full-fill their needs, for the sustenance of material life (Smith, 2008:53). With production for exchange production and reproduction of nature takes place for the fulfilment of one particular need, and that is profit. The transformation of nature from use value to 'pure exchange value' takes place through the alienation of labour as commodities, subjected and facilitated by institutions such as market (Smith, 2008:63).

Smith (2008:69) argues, capitalist production is characterized by a separation of workers not just from the commodities that they produce but from the very means to produce and reproduce themselves. As Smith (2008: 65) state ' humans not only produce the immediate nature of existence , but produce the entire social nature of their existence'. This socio-ecological organization in capitalist productions forms the basis of the generalization of wage labour in production relations, and the determination and dominance of value. The 'value measured by socially necessary labour time, becomes the matrix where labour and nature are profitably recombined' (Smith, 2008:69). Smith (2008:71) further argues, 'Under capitalism, appropriation of nature and its transformation into the means of production occur for the first time in a world scale as appropriated nature becomes a productive force' Competition between capitalists denotes abstract determinations at the level of value that are continuously translated into concrete social activity in the relations with nature, 'with the aim of producing surplus value and expanding the

accumulation of capital necessary condition for the reproduction of material life' (Smith, 2008:70).

Jason Moore's contribution to the discussion of dialectical relationship between capitalism and environmental crisis lies in his conceptualization of capitalism as world ecology: a totality of nature-society relations, a specific articulation of he what he calls '*oikeios*'. He describes *oikeois* as (Moore, 2011 a:114):

*the relation that produces manifold environments and organisms as irreducibly plural abstractions. To take Nature/Society binary as a point of departure confuses the origins of a process with its results. The plethora of ways that human and biophysical natures are intertwined at every scale-from the body to the world market - is obscured to the degree that we take nature and society as purified essences rather than tangled bundles of human and extra human nature.*

In Moore's perspective, rather than looking at the history of capitalism and its impact on the environment one should posit an intertwined relation between 'endless accumulation' and the 'endless conquest of nature' (Moore, 2011b: 6). As Moore (2011b:4) puts it 'capitalism does not have an ecological regime, it is an ecological regime'. Moore's conceptualization of 'capitalism in nature' is characterized by a complex and multilayered process of simultaneous internationalization and externalization of nature (Moore, 2011a:110); abstract labour become the measure of value through which mediation of nature takes place. Moore introduces the concept of '*commodity frontier*' (Moore, 2011b:16) as 'a strategy of capitalism to further expansion is possible only insofar as beyond frontier, non-commodified land and labour are available'. The fundamental dialectic is between logic of capital which does not account for nature unless in the form of free raw materials or free waste disposal and the actual history of capitalism with its unaccountable episodes of plunder and degradation. Moore (2011a:109) argues 'Capitals dynamism turns on the exhaustion of the very webs of life necessary to sustain accumulation; the history of capitalism has been one of recurrent frontier movements to overcome that exhaustion, through the appropriation of nature's free gifts hitherto beyond capital's reach'. Capitalism does not produce environmental

crisis but it is the environmental crisis, hence the bio-political nature of ecological crisis (Leonardi, 2012).

The pace of commodification and extraction of raw materials under the capitalist mode of production is closely related to Foster's formulation of 'metabolic rift' of capitalism as dialectically bound to an epochal shift in the town-country division of labour, Marx's 'urbanization of the country side' (Marx: 1993:479). Marx conceptualized continuities and disruptions in the interchange between human modes of production and natural systems through the use of the concept of 'metabolism', originally developed by German agro chemist Liebig in 184. As he wrote in Volume III of Capital it denotes the rise of 'an irreparable rift in the interdependent process of social metabolism under conditions of capitalist production and urban-rural organization' (Marx, 1981: 949). According to Marx, a primary form of ecological disruption generated by human production is the separation of town and country. The concept of metabolic rift is useful to understand how industrialization and urbanization, broke the natural balance of subsistence economy and ecology and produced conditions of possibility for environmental crisis. Foster (2000:148-149) in his analysis show the emergence of ecological crisis within the development of capitalism through the first agricultural revolution, as capitalism farming techniques increased the yield but at the same entailed significant soil exhaustion. Through his analysis Foster (2000) demonstrate that inherent in capitalist system, there is a systemic tendency towards biophysical degradation in the countryside and towards increasing pollution in the city. Foster argues that the crisis of the earth is based on a contradiction between 'natural distinctness' and 'economic equivalence' (Marx, 1993:141) that accompanies periodic crisis of accumulation.

It is important to highlight here that Foucault in his analysis of history of medicalization demonstrated the how urban medicine emerged as a result of urbanization and growth of cities closely linked to a capitalist economy. In *Birth of Social Medicine* Foucault (1994:137) argues

*'capitalism which developed from the end of the eighteenth century to the beginning of the nineteenth century started by socializing a first object, the body, as factor of productive force of labour power. Society's control over individuals was accomplished not only through consciousness or ideology but also in the body and with the body. For capitalist society, it was bio-politics, the biological, the somatic, the corporal, which mattered more than anything else. The body is a bio-political reality; medicine is a bio-political strategy'*

Foucault goes on to show how institutionalization of urban medicine through establishment of city authorities gave rise to a homogenous and coherent mechanism of regulation and control of the working labour population in cities. Meanwhile in middle of eighteenth century binding legislation relating to subsurface soil was formulated for the first time, and it provided that the state and the king were sole owners of the subsurface for digging and mining.

Further James O'Connor's (1998) contribution is useful in understanding the role of ecology and the state in capital accumulation through his synthesis of political ecology and political economy in the accumulation crisis of capitalism. His notion of capital-ecology as 'second contradiction of capitalism' highlights the tension between capitalist relations of production and forces of social reproduction. The distinction between 'production conditions' and 'conditions of production' are based on a synthesis of ideas of Karl Polanyi and Karl Marx (O'Connor, 1998:144) Marx identified three production conditions: 'personal conditions' or human labour-power, 'external conditions' or environment and 'general conditions' of infrastructure or space (O'Connor, 1998:125). O'Connor borrows Polanyi's (1944) concept of 'fictitious commodities' as he identified land, labour and money as fictitious commodities because capitalism organizes them as commodities but their true essence is as nature, human beings and purchasing power, rather than as produced commodities. O'Connor describes conditions of production as anything and everything that are not produced as a commodity but is treated as *if* it is a commodity (O'Connor, 1998:144). Therefore, conditions of production are requirements for capitalist production accumulation which are produced and reproduced outside the circuit of capital including nature. The role of state is therefore crucial as a mediator between capital and nature in order to ensure that

conditions of capitalist production remains intact and available all times.

O'Connor's 'second contradiction of capitalism' relates to the tendency of productive forces of capitalism and social relations of production to impair them rather than reproduce the natural, human and spatial conditions of capitalist production. The basic reason behind this is 'capitals self-expanding nature and its lack of ownership of conditions of production' (O'Connor, 1998:165).

In Connor's analysis, the state forms an integral part in struggle around second contradiction. He argues the 'state must regulate capitals access to and use of conditions of production because natural conditions like fossil fuels are produced and reproduced outside the circuit of capital' (O'Connor, 1998:148). One of the central functions of the state is to secure access for capital to nature, labour power and infrastructure. This means that the state is partly responsible for any impairment of natural conditions of production but also central for any possible reconstruction of these conditions. He argues 'States often reconstruct both natural conditions as 'productive forces' and the 'social relations of their reproduction, as result of potential social and natural barriers to capital' (O'Connor, 1998:167)

The role of state can be understood in terms of 'two basic and often mutually contradictory functions- accumulation and legitimation' (O'Connor, 1973). The state fulfils the accumulation function as 'states are capitalist states' (O'Connor, 1998:154). The capitalist state provide capital with access to conditions of production such as land, labour, environment required for the accumulation of capital. States regulate production conditions in a manner which is viewed as legitimate, acting in the name of people as a whole. The dominant path and interpretations are therefore decided by the political power of social movements, capital and state (O'Connor, 1998:165).



## Foucault's 1978-79 Lectures: The Birth of Bio-politics

The convergence between Marx and Foucault has been best described as a shared understanding of capitalism as a central problem, where both attempts to decode and destabilize the power relations of capitalist axiomatic (Jameson, 1998). As Lemke (2002:60) puts it, 'Foucault's analytics of government offers a theoretical and critical perspective that parallels similar endeavours and recent developments in Marxist theory'. In Marx's approach the analysis was focused on valorisation of capital and exploitation of labour-power, whereas Foucault was interested in configuration of power relations between governmental effects and bio-politics.

In his 1978-1979 course lectures at the College de France, *The Birth of Biopolitics*, Foucault (2008:27) reads liberalism as a 'governmental rationality' a distinctive 'art of government' and a novel 'reasoned way of governing best'. Rather than an economic theory or ideology Foucault viewed liberalism as denoting shift from the legal limits of the absolute power of the sovereign to the increasing importance of art of government based on political economy and security apparatuses. According to Foucault (2008:13) 'political economy not only aims at analysis of production and circulations of wealth but it also refers to the method of government or a reflection on the organization, distribution and limitation of powers in the society'. According to Foucault (2008:15) political economy as an ensemble of knowledge practices and power *dispositifs* allowed a coherent, contingent management of 'nature' and 'life' (biological statistical set of fluctuations) internal to the exercise of governmentality. Nature thus is something that runs under, though, in the exercise of governmentality (Foucault, 2008:16)

The constitutive link between the concept of nature and political economy and the mechanism through which population is mobilized to enact it was put forward by Foucault (2008:15-16) as:

*Political economy does not discover natural rights that exist prior to the exercise of governmentality, it discovers a certain*

*naturalness specific to the practice of government itself. The objects of governmental action have a specific nature. There is a nature specific to this governmental action itself and this is what political economy will study. The notion of nature will thus be transformed with the appearance of political economy. For political economy nature is not an original and reserved region on which the exercise of power should not impinge, on pain of being illegitimate. Nature is something that runs under, through and in the exercise of governmentality*

The constitutive link between political economy, 'nature' and 'life' acquires social effectiveness through the role played by the market. The market constitutes 'a site of veridiction' that allows the new art of government to effectively work' (Foucault, 2008:32). The laws of the market allow for the formation of a 'natural' price which makes it possible to 'verify' or 'falsify' the practice of the government and the market becomes the nucleus of a new regime of bio-political regime governmentality. The market principles dictates and frames every sphere and human activity.

The market as a 'site of veridiction' within the nature- political economy nexus was articulated by Foucault (2008:32) as:

*Inasmuch prices are determined in accordance with the natural mechanisms of the market they constitute a standard of truth which enables us to discern which governmental practices are correct or erroneous...inasmuch as it enables production, need, supply, demand, value and price, etc. to linked together through exchange, the market constitutes a site of veridiction, I mean a site of verification-falsification for government practice.... The market now means that to be a good government, government has to function according to truth...In this history and formation of new art of government political economy does not therefore owe its privileged role to the fact that it will dictate a good type of conduct to government. Political economy was important inasmuch as it pointed out to government where it had to go to find the principle of truth of its own governmental practice*

The justification towards the laws of 'naturalness' of the market is that it plays a limiting role with regard to sovereign power. The liberal state in need for logic and justification in order to guide its action respect the autonomy and freedom of economy. However according to Foucault as the economic world is naturally opaque

and naturally non-totalisable it is impossible to fully grasp it and so the sovereign must be playing a limited role in correcting market failures. He states 'what we see appearing in the middle of Eighteenth century is 'naturalism' much more than liberalism'<sup>7</sup> (Foucault, 2008:62).

In his analysis of transformation from liberalism to neoliberalism, Foucault demonstrate neoliberalism's 'reprogramming' of liberalism and its configuration through relationships between state, economy and subject. According to Foucault what was significant about neoliberalism was how the naturalness of the political economy or market was created through the artificial principle of formalization represented by competition i.e. nature has to be artificially constructed in order to allow formal structures of economic competition to work. Foucault notes that for neo-liberals market is not a primary datum where spontaneous structure is revealed by competitive logic, competition has to be first and foremost established and reinforced under constant supervision of the state. For the neo-liberals competition is essential and valuable but not natural and so it must be supported and corrected from outside which formed a crucial function of the neoliberal state.

*In the words of Foucault ( 2008: 120)*

*For what in fact is competition. It is absolutely not a given of nature. The game, mechanisms and effects of competition which we identify and enhance are not at all natural phenomenon; competition is not the result of a natural interplay of appetites, instincts, behaviours and so on. In reality, the effects of competition are due only to the essence that characterises and constitutes it. The beneficial effects of competition are not due to a pre-existing nature, to a natural given that it brings with it. They are due to a formal privilege. Competition is an essence. Competition is an eidos*

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<sup>7</sup> Foucault (2008:63) use word 'liberal' specific to governmental practice as a consumer of freedom. It is consumer of freedom inasmuch as it can only function insofar as number of freedoms actually exist: freedom of the market, freedom to buy and sell, the free exercise of property rights, freedom of discussion, possible freedom of expression and so on. The new governmental reason needs freedom therefore; the new art government consumes freedom. It consumes freedom which means that it must produce it. It must produce it; it must organize it...liberalism formulates simply the following I am going to produce what you need to be free. I am going to see to it that you are free to be free.

*Competition is a principle of formalization. Competition has an internal logic, it has its own structure...competition as an essential economic logic will only appear and produce its effects under certain conditions which have to be carefully and artificially constructed*

As Terranova explains (2009), in liberalism nature is internalized to function as an enacting limit defined by the logic of economic exchange, in neoliberalism nature is artificially created to enact a process of valorisation subjected to the formal and generative structure represented by economic competition. Further in neoliberalism the gaze of the sovereign is replaced by economics, computer models which aim to simulate the spatial and temporal unfolding of market-based transactions. Terranova (2009:249) puts it rightly 'as the ideal nature of economic processes is actualized within the formal games of competition...the life of the market becomes increasingly both abstract and machinic'.

The transition is from liberal capitalism in which 'nature is perceived as a limit of valorization to neoliberal capitalism in which nature is an element of valorization' (Leonardi, 2012:105). Nature becomes a political surface through which new fictitious commodities are produced in order to sustain a creative and artificial conception of economic competition. The abstract internalization of nature is evident from marketization of climate change through carbon trading, privatization with valorization as a productive element. The neoliberalism conception of competition, *naturality and artificiality* is helpful to shed light on these processes through which environmental degradation takes place and transformed into of political problem which is pervasive and unavoidable. The ecological crisis is rooted in the process of industrialization and as such emerged in liberal phase of capitalism. In neoliberal capitalism it is through the environmental policies of governmental actors that 'an eco-political strategy is set into motion' (Leonardi, 2012:105). As Heynen et al puts it (2007:10) 'in neoliberalism capital accumulation and valorization occurs within the circuits of nature conceive of as a target for capital's reproduction where biophysical nature in the present day (including human body) is an important frontier for expansion and deepening of commodification'.

In order to ensure the artificial creation of competition there is a need for the state to be in constantly intervening within the market to rearrange and structure reality according to its needs. There is a requirement of an interventionist active governmentality, a proactive political entity whose task is to produce and reproduce material conditions of a society according to competition. In order for competition to function, which is the very essence of the market, 'the government must accompany the market from start to finish' and so, 'one must govern for the market rather than because of the market' (Foucault, 2008:121). The German Ordo-liberal principle of social market economy exemplifies this transformation as for them the problem was to 'create a state under the supervision of the market rather than a market under the supervision of the state' (Foucault, 2008:116). The 'state-phobia'<sup>8</sup> for the ordo-liberals meant that not only was the market was to become a mechanism to restrain the excesses of the state, but the state's duties and responsibilities must be clearly and forcefully delineated through laws and policies. In liberalism the state sought principles and techniques to separate itself from the sphere of autonomous market, in neoliberalism the state extract the market principles and push it to the non-market social and political spheres. The promotion of economic growth through virtues of competition becomes 'the only one and true fundamental social policy' (Foucault, 2008: 144). The formal principles of competition of the market are employed to reconstitute political and social calculations. The economic grid becomes a permanent tribunal of political and governmental action, extended as a critical audit of public management, bureaucracy and social decision making.

Under liberalism there was separation between political and economic spheres, in neoliberalism instead there are mutual interferences. As Lemke (2002:14) puts it

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<sup>8</sup> Foucault (2008:189) notes 'you will find this critique of polymorphous, omnipresent and all-powerful state in these years when, liberalism, or neo-liberalism, or even more precisely, ordo-liberalism was engaged in distinguishing itself from the Keynesian critique and at the same time undertaking the critique of New Deal and Popular front policies of state control and intervention ...or, in a word, of socialism generally'.

‘the difference between state, society, politics and economics does not function as a foundation or a borderline, but as element and effect of specific neo-liberal technologies of government’. The neo-liberal agenda regulates the behaviour of subjects between each other: the behaviour of the governed amongst themselves as well as their behaviour towards the government (Goldschmidt & Rauchenschwandtner, 2007:2). It is important to highlight that neoliberal climate change policies are closely related to the governmental need to intervene in the economic field to create solutions for profit maximization.

According to Foucault, liberalism is neither a theory nor an ideology but a practice with many variants, one of which is ordo-liberalism. The ordo-liberal market economy was based on an assertion that social order would be created through ‘competition as an eidos’ (instead of natural given) of the market’ (Goldschmidt & Rauchenschwandtner, 2007:2). The market built on an eidetic foundation was not only to be an outcome of individual interest through competition but a competitive market is to be desired by all individuals, as Goldschmidt & Rauchenschwandtner (2007 :2) argues ‘ not only one’s desire must be articulated on the market but the agonal character of the market itself it to be desired’.

The ordo-liberal’s idea of ‘social market economy’ was based on production of subjectivity or *homo-economicus* influenced by the Chicago School of neoliberalism of ‘man as an entrepreneur of himself’. Foucault’s argues that the Marxist conception of abstraction of labour was not a product of real capitalism but a result of economic theory that has been constructed out of capitalist production. Foucault’s (2008:224) analysis whereby labour can be defined as human capital, drawn from Chicago School, was straightforward: individuals work for a wage and so from their point of view the wage is income, and therefore income of capital, so from workers point of view labour can be defined as capital, since labour is inseparable from its producer. Then it is the labourer that ends up being perceived as an enterprise. As Foucault argues (Foucault, 2008:225) ‘the worker himself appears as a sort of enterprise of himself an entrepreneur of himself’. Therefore, the abstraction of capital in neoliberalism is not only an external measure of social value but also a subjective

identification as *homo-economicus*. It can be said that in neoliberalism the real subsumption of labour takes place through this mass subjectivity.

In neoliberalism, Foucault (2008: 270-71) explains

*Homo economicus, that is to say the person who accepts reality or who responds systematically to modifications in the variables of environment, appears...as someone who responds systematically to systematic modifications artificially introduced into the environment. Homo economicus is someone who is eminently governable. From being the intangible partner of laissez faire, it now becomes a correlate of a governmentality which will act on the environment and systematically modify its variables.*

Wendy Brown (2015) draws attention to the contemporary consequence of interventionist governmentality is the process of de-democratization. Brown (2015:77) contends in order to generate a rich account of neoliberal de-democratization, Marx analysis of capitalism requires to be welded to Foucault's account of neoliberal reason. Marx's contribution lies in his critical engagement with political economy, namely science of capital from capitalist relations of production. His engagement was with the modality through which capital's real *abstraction* came to dominate field of social production or reproduction. Foucault one the other hand, showed how political economy as internally structured scientific rules, became coterminous with the emergence of bio-politics. As Lemke (2002:11) puts it 'Foucault hoped to complement and enlarge Marx's critique of political economy with a critique of political anatomy'. Foucault (1977:25-26) showed in the development of capitalism , the economic exploitation required a prior' political investment of the body' starting by 'socializing the first object, the body , as a factor of productive labour power'. In his analysis of neo-liberal reason he extends his analysis that political economy becomes the new reason of state or 'frugal government' as it produced, organized, managed individual freedom all without touching the subject' (Foucault , 2008:63-64). The neoliberal de-democratization is through casting of political and social spheres both as appropriately dominated by market concerns and as themselves organized by market rationality. Further the

state is constructed and construed itself in market terms as well as develop policies and promulgate a political culture that figures citizens exhaustively as rational economic actors in every sphere of life.

## **Analytical Framework of the Thesis**

After the discussion on Foucault's governmentality and Marxist conception of primitive accumulation, this section provides a conceptual framework in understanding the operation 'socio-ecological governmentality' in neoliberal climate governance. The conceptual framework will focus on the link between discursive and material features of governance as it expresses a metabolic link between governance as a discourse (scientific, economic and political frames) to manage and promote the social stability which is necessary and fundamental to capital accumulation.

### **1) How does climate governance act as a discursive and material field of power relations, between various actors in the process of climate change governance?**

According to Foucault (1991) modern government is a problematizing activity, that is specifically preoccupied with the question of 'how to govern'. Foucault use the terms 'governmental problematic' or 'problematic of government' interchangeably, deliberately organized according to rational principles concerning the effectiveness of authority and rule. Foucault notes that modern government is based on reason which requires those who govern to reflect rationally on the nature and practice of government, on the question of 'how to govern'. The government as a problematizing activity requires not only thinking or rationality about 'how to govern' but also on the practices of government that is the 'question of method' or 'who and what to govern'. According to Rose and Miller (1992 :181) 'the history of government might as well be written as history of problematization', fundamentally concerned with 'making the world thinkable and calculable' (Dean and Hindess, 1998:2) by 'posing the task of government in terms of the problems it seeks to address' (Rose and Miller, 1992:181). Foucault suggests that such problematic of



government can be usefully analyzed not only in term of political rationalities or ‘the changing discursive fields within which power is rationalized’ (Rose and Miller, 1992:181) but also in terms of governmental technologies such as ‘calculations, techniques, apparatus, documents and procedures through which authorities give effect to governmental ambitions’. Foucault’s idea of government as a problematizing activity not only requires discursive framing of a problem, moral justification or a normative reason for governing and exercise of power by different authorities and experts but at the same time requiring material solutions in terms of policies, procedures, techniques, apparatus to address it. The concept of problematization is significant in the context of climate change governance as it enables us to grasp the nuances of framing of climate crisis as an object of political concern<sup>9</sup> that is as an economic, social, moral problem and associated principles of economic growth, prosperity, efficiency, fairness, responsibilities, equality to which government should be directed. The central analytic focus in governance of climate change is concerned with how the problem is understood that is, in terms of scientific, economic and political terms and solutions based on such problematization. Further through an analysis of the link between political rationalities and technologies one can also understand the formation of multiple networks and assemblages of actors, expertise, knowledge, disciplines, theories, projects, experiments, groups, organizations that becomes connected to the common political concern and become central components in climate governance in terms of solutions and mechanism required to address it. Rose and Miller (1992) suggests that it is through these interconnected and delicate networks political power is exercised in advanced liberal democracies ‘through a profusion of shifting alliances between diverse authorities in projects to govern a multitude of facets of economic activity, social life and individual conduct’. As Stephen Collier (2009) suggests that we think Foucault’s analyses of power and governmentality as more ‘topological’ in terms of heterogeneous patterns of correlations such as techniques,

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<sup>9</sup> As Marres shows (2007, c.f Callon, 2009:542) ‘best starting point for studying the process of politicization’ is the notion of ‘problematization’, as to how the issue becomes a matter of concern.

texts, material forms, institutional structures, technologies of power, problematization all cohere into spatio-temporal configurations of climate governance.

The notion of 'problematization' is a shared conceptual territory between governmentality studies and Actor Network Theory (ANT) and is relevant to the understanding of the uncertainties, ambivalence and political turmoil in the domain of climate governance<sup>10</sup>. The uncertainties, ambivalence and turmoil of the politics of climate governance results from contested, multiple framing or gradual fragmentation of climatic problems qualified as political, economic, technological and scientific and suggests that the instrumentality of climate policy has a complex relationship with environmental protection discourse and economic ideas. Callon (2009, c.f. Blok, 2014:44) rightly notes 'climate governance manifests a characteristic topology- one that transforms an unsolvable 'issue' into multiple, possibly solvable, 'problems'. An analysis of the 'trajectories of problematization' (Callon, 2009) such as sustainable development and green economy demonstrate climate governance has been co-practiced through the globalized scientific expertise in Intergovernmental Panel on Climate Change (IPCC), via economic tools of accounting constituting transnational carbon markets. The various discursive formations in climate change governance draws attention to the institutional and socio-material context, that make true the neo-liberal claim about the superiority of valuation, pricing, monetization and market based mechanism over other regimes in climate change governance. Actor network theory (ANT) scholars argue that the specific problematization of climate crisis is not only a new rationality or thought but also 'collective experimentation' around fully material and practical objects of shared political concern (Blok, 2014). According Callon (2009) the process of politicizing of global warming is incomplete and fragile as the economic, scientific, socio-political qualifications are far from being complete and always susceptible to

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<sup>10</sup> There are clear conceptual similarities between these two strands of 'post-structuralist' theorizing; however whilst Foucauldian studies seek to reconstruct the rationalities of power embedded in specific governmental domains, Actor Network Theory (ANT) focus on hybrid association of human and nonhumans assemblages (BloK,2014: 42)

revision. This unsettled nature of the problematization of global warming in turn 'stimulates the inventive and creative capacities of actors who are prompted to devise solutions and politics emerges as an ongoing collective experimentation' ( Callon, 2009: 545 ,c.f Blok, 2014:43)

Callon (2009) demonstrates that in the climatic domain the processes of assembly formation involve the conjoint work of scientific, political and economic actors, knowledges and techniques or socio-material *agencements* i.e. combining material and technical devices, texts, algorithms, vocabularies rules and human beings with their various instruments and prostheses necessary to establish the economic calculability and accounting on which carbon markets rely. The ANT approach to climate governance supplements Foucault's conceptualization of 'problematization' not only as a discursive and non- discursive practices, material-semiotic configuration but it provides a pragmatic framework in order to track such patterns of correlations as to how specific network of actors ( government, civic, scientific, technological and economic), discursive and material devices, come together, tied by common concern in political arenas and organized conflicts, as authorities of experts and power. Governmentality as ways of thinking of how to govern intersect empirical terrain of material inscriptions, rationalities, technologies, programs and identities of government.

The socio-material *agencements* or the heterogenous mechanisms draws attention to the network of actors, agents and institutions, as effects of governmental power in the successful mobilization and enrollment of these actors, agents and institutions, artefacts and procedures in the pursuit of its goals. As Rose and Miller (1992:184) notes 'power is stabilized in lasting networks guaranteed through the materialization of mechanisms of their enrolment takes place in more or less persistent forms-for example through machines, obligations, techniques of documentation and calculations and so forth' . This process is captured in the notion

of 'translation'<sup>11</sup>(Callon and Latour, 1981, c.f Rose and Miller, 2010) whereby shared interests are constructed in and through political discourses, persuasion, negotiation, shifting alliances, domination, exclusion, violence and so on. The process of translation establishes links between nature, character, causes and solutions of problems connecting it to individuals and groups in such a way that a ceaseless chain is created. Callon (2007:12) further proposes that 'discursive conditions of formulating statements that describe singular events localized in time and space are not possible without describable socio-technical *agencements* which are then adjusted and calibrated accordingly'. A particular discourse 'is made true if the environment, that the statement requires is available throughout its circulation and in all places to which it leads' (Callon, 2007:331). This utilization, instrumentalization and mobilization of agents and techniques into networks and circulation is what enables to 'govern-at-distance' (Rose and Miller, 1993) a characteristic feature of advanced liberal societies, such as Australia. According to Rose and Miller (1993) government in advanced liberal societies adopts a range of devices which are intended to recreate the distance between formal political institutions and authority and other social sectors, in an attempt to direct, shape, mould identities and interests or 'conduct of conduct'.

## **2) What relationship is linking the notion of climate change governance to the power-knowledge apparatus of political economy?**

Foucault (1991) identified the conception of government characterized by large-scale management of the population in the eighteenth and nineteenth centuries. Associated with these practices was the emergence of 'economy' as a new

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<sup>11</sup> Callon and Latour (1981:279, c.f Barry & Slater, 2002:178) defines 'By translation we understand all negotiations, intrigues, calculations, acts of persuasion and violence, thanks to which an action or force takes, or causes to be conferred on itself, authority to speak or act on behalf of another actor or force'.

object of political management and intervention<sup>12</sup>. Foucault shows that the 'essential issue in the establishment of the art of government was introduction of economy in the political sphere' (Foucault, 1991:92) as political economy assumed the role of a knowledge central to the art of governing the state, by managing its population and resources. However economy not only provided the intellectual machinery lateral to governing but it had to be first and foremost constituted. As Gordon (1991:11) suggested that 'the economy of a functioning whole is a machine which has to be continuously made and not merely operated by the government'. The constitution of economy as an object was constituted only through deployment and inventing new ways to define, measure and calculate economic processes, relations and activities that 'the economy' came into existence (Mitchell, 2002)

Timothy Mitchell (2008) shows that the development of modern electricity industry and its associate metrology<sup>13</sup> brought the object of economy into being. Mitchell argues (2002: 1117) 'the kind of work involved in making of the economy in electricity industry required new technical processes, new forms of distribution, addressing and monitoring new forms of calculation that were simultaneously electrical, chemical, economic and social'. Thus the economy as an object of power-knowledge was constituted through specific socio-technical *agencements* such as material, institutional and cognitive investments; the economy as socio-technical and discursive arrangement is one of the many elements of this assemblage (Callon and Caliskan, 2009; Mitchell, 2013; Barry and Slator, 2002). The role of economic thought, ideas and economists formed an integral and an inseparable part of the object of economy. As Rose and Miller (1992:182) puts it 'in a very real sense, the economy, is brought into being by economic theories' and 'a great work of

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<sup>12</sup> As Foucault (1991:102) explains 'the new science called political economy arises out of the perception of new networks of continuous and multiple relations between population, territory and wealth; and this is accompanied by the formation of a type of intervention characteristic of government, namely intervention in the field of economy and population'.

<sup>13</sup> Latour (1987:251) defines metrology meaning the gigantic enterprise to make of the outside a world inside which facts can survive.

imaginings on the part of economists' (Mitchell, 1998:92). The emergence of the economy as an innovation does not exist in a vacuum but takes place within the broader social and political practice as it becomes a field of operation based on government powers of regulation, planning, statistical enumeration and representation (Mitchell, 1998).

Further, Callon (1998) attributes the idea and emergence of the market to the work of economists including what he referred to as 'economists in the wild' such as accountants, management consultants and their intellectual work. The economists through their economic ideas and theories about properties of markets and what a functioning market should look like has been central in formulating neoliberal policies in recent decades. These theories have been instrumental in the economization of non-economic and social spheres such as climate change and contributed in re-framing of markets in such spheres such as the insertion of carbon markets.

Mitchell's (2013) analysis of economists' expertise is relevant in understanding the re-framing of the market in the climate domain and the uncertainty of the estimation of oil and gas reserves. Mitchell shows how uncertainties about the estimation of proven oil and gas reserves become mechanisms for establishing the expertise of economists in making of the market as an 'anti-scarcity mechanism'. This is achieved as the economists create and take advantage of the extraordinary gap between 'proven reserves' compiled largely from company data and estimates of undiscovered reserves based on uncertain government models of the estimated 'total petroleum system' (Mitchell, 2013: 246). In the context of the carbon market, carbon offsets, forestry offset credits are similar to that of 'proven reserves' and the construction of the market in carbon prices are intended to convert greenhouse gas emissions into sequestered carbon at minimum costs, flattening the world by redefining the place of nation-states North and South countries in the carbon offset mechanism.

The rule of technocratic expertise of economists is particularly relevant to Australian climate change governance as economics and economic models were used to treat the entire climate policy as amenable to calculation, projecting costs of mitigation options combining general equilibrium models to weigh cost-benefits of

taking action against greenhouse warming (Garnaut, 2008). These models became powerful tools for policy making as it became the yardstick for an efficient policy in climate change mitigation. Mitchell's (1998) argument about the process of constitution of the 'national economy' through the establishment of institutions such as Australian Bureau of Agricultural and Resource Economics (ABARE) and economic models such MEGABARE and GIGABARE was significant in defining climate change as an economic problem for the national economy and trade liberalization (Global Trade Analysis Project) foreshadowing 'environmental reality' with 'economic reality'. The MEGABARE model was instrumental in constructing of a 'fossil fuel national economic imaginary' and fossil-fuel future without any opportunities or scope for transition to renewable energy. The constitution of the 'national economy' occurred within the broader socio-political practice related to the re-casting of geopolitics in Australia in Asia Pacific and its predominant role in fossil-fuel exports. Further the use of econometric models and variables used to describe 'the state of the economy' such as Gross National Product (GNP) growth rate, production consumption are referents to the geographic space of nation-state and enabled cost-benefit analysis of climate impacts and mitigation options. Reflecting this here are controversies around definition of Gross National Product (GNP) as to what economic activities should be included in its definition or its calculations. For example, environmental disaster, climate change, negative consequences of fossil fuels were not deducted from the measurement of GNP. In the Garnaut Review of climate change (2008) 'market impacts' and 'non-market impacts' of climate change mitigation were intentionally separated, and obvious priority was given to 'market impacts' as that which can be measured and calculated through a computable general equilibrium economic model.

### **3) What are the actual processes of climate change governance, how is it accomplished in practical and technical terms?**

#### ***Scientization of Climate Change***

The early trajectories of global warming and economization owes to

scientization of climate change as natural science and its authoritative institutions played a crucial role in shaping climate as a public political concern. While it is a common perception to understand science as value free entity, in the domain of climate governance scientific facts have been actively constructed in order to perform important political and economic functions to favour various coalitions such as corporations, governments, economists and accountants. In *Science in Action*, Latour (1987) depict scientists as entrepreneurs chasing political, scientific and economic goals simply by 'black boxing' the actual contents and workings which are never examined.

Governmentality scholars show how the representation and ordering of climate change was brought into existence in and through modern forms of knowledge such as science and statistics related to and constitutive of the ways through which climate was integrated into economic and political rationality. The production of knowledge through quantitative scientism is closely connected to the construction of nature to be mapped, quantified, rationalized and above all controlled in order to be subjected to the circuits of accumulation of capital. The mobilization of scientific 'inscription devices' (Latour, 1987, c.f Miller and Rose, 1992) including advanced computer models, theories, and remote sensing technologies referred to an active, technical processes to render reality of climate into calculable form. As Lohmann (2009 :2) notes, 'making climate into benefits and dis-benefits opens them up to the possibility of exchange' and role of science is crucial to transform climate into such 'things' or singular commodities. In the climate domain statistical aggregations, graphical inscriptions and observations such as geosciences, maps, cartography emerged as powerful and productive 'regimes of practices' constituting of a particular seeing and knowing of climate (Lovbrand and Stirrple, 2014). Edwards (2010) suggest the linkage between extreme weather events and global warming is not immediate. For such a correlation to make sense or for it to be open to scientific investigation as well as governmental management, the role of knowledge infrastructures is inevitable and unavoidable. Edwards argues (2010:8) climate science as a 'vast machine' or socio-technical system that collects data, models, tests theories and generate widely shared understanding of global carbon cycle. The issue of climate was established



as a political concern through the workings of 'knowledge infrastructure' as it not only offered specific data about the past and future of Earth's climate, but it also enabled the imagining of the planetary climate as something observable, measurable and governable'(Edwards,2010:8).The transformation of climate into concerted statistical aggregations, observations, models and theories led to the establishment of Intergovernmental Panel on Climate Change (IPCC), referred to as 'hybrid science-policy' assembly which played a powerful role of conceptualizing climate change (Miller, 2001). The overlap between climate science and politics is apparent as although the IPCC was established to provide expert and independent inputs on climate system but it was to be directed in its mandate by governmental representatives. This emergence of climate change as an intergovernmental issue collided with the establishment of IPCC as policy action on climate needed to be global affecting the entire economies of both developed and developing countries (Agarwala, 1998). Using Sheila Jasnoff's (2004, c.f Hulme & Mahony, 2010) idiom of 'co-production' several science studies have shown how climate models and data enact or co-produce particular social and political forms, especially in terms of positing a smooth transition towards 'low carbon' economy (Wynne, 2010). Scientific knowledge far from representing nature, works as a reality based social and policy heuristic. Reflecting this Shackley and Wynne (1997) show how scientific concepts such as global warming potential (GWP) perform important political and economic functions as an organizing basis for broader coalitions of motivations, specific material interests and political concerns.

### ***Technocratization of Climate Change***

The role of science, scientific authority and expertise in enabling climate to be something as observable, calculable and measurable led to technocratization of climate change through market governance via emissions trading system. Once the scientific research made visibility, measurability, calculability and most importantly the tangibility of carbon dioxide as a negative externality, the key policy prescription to manage them was to internalize in the economic transactions. Market governance driven by assumptions that climate change is a techno-economic problem was thus

amenable to neo-liberal policy prescriptions. The carbon market as a technology of liberal government can be best understood as an amalgamation of concepts of materiality and sociology of translation, central to actor network theory (ANT) and governmentality studies. Several studies on the formation of the carbon market focused on the politics and problems of market design (Mackenzie, 2009, Lohmann, 2006, Callon, 2009) including examination of politics of offset mechanisms (Bumpus, 2010, Lovell & Mackenzie, 2015). The studies show that the design of the carbon market relates to issues of accounting and technical boundaries of economic interactions and the requirement of numerous interdependent actors to create registries for permits, formulate parameters for project assessment and validate projects.

Governmentality studies (Lovbrand and Stripple 2011, Lippert, 2011, Ascui & Lovell, 2011) on the 'analytics of carbon accounting' demonstrate accounting as a rationality of the government, primarily concerned with the ways carbon can be measured, quantified, demarcated and statistically aggregated. Through the regimes of carbon 'sink', 'credit' and 'budget', the stocks and flows of carbon have been constituted as administrative domain amenable to economic and political rationalities such as government regulation, market exchanges and 'self-governance by responsible individual subjects' (Stripple and Bulkeley, 2013:11). Ingmar Lippert (2011:7) propose the term '*extended carbon cognition*' to refer to various assemblages of heterogeneous entities in the constitution of contested notion of greenhouse gas emission as he argues 'carbon emissions came into existence through a socio-technical network based on cultural setting that configured humans and non-humans in a specific corporate driven way'.

Proponents of actor network theory (ANT) (Mackenzie, 2009, Callon, 2009, Blok, 2014, Voß, 2007) have focused the specificities of organization of various

actors, rich nodes of knowledge making practices<sup>14</sup>, conflicts, involved in constructing carbon as an object of 'market calculability and commensurability'. According Callon (2009), EU emissions trading as 'a grand new policy experiment' has been implemented with the intention clearly to build up competencies, to develop a learning dynamic and to construct a network of all disciplines, enrolling both specialists and NGO's into a 'community of practice'. The 'community of practice' comprising experts, specialists, accountants provides a vital link between socio-political objectives and minutiae of markets. Callon shows (2009) that communities of practice are organized around the conflicts and disagreements of a diversity of actors regarding the construction and functioning of the market and that managing differences between experts, such as accounting professionals, economists, NGO's is a key component of knowledge making<sup>15</sup>. The notion of a 'community of practice' emphasizes knowledge production is a matter of political selection. The truth claims of efficiency, low cost option, and efficacy in the context of a carbon market are partial and socially contestable and therefore such claims must be understood within the plethora of socio-technical agencement of concern.

O'Connell (1993:130) has demonstrated that the universality of technoscience is accomplished by expensive and labour-intensive metrological practices; whereby 'communities of persons and institutions mutually exchanging same representations and material representatives for abstract scientific entities'. The notion of a 'material collective' is relevant in the context of understanding electricity production and marketization as standardization, representation, maintenance of electricity prices in a community of practitioners. As O'Connell (1993: 157) argue 'evident in the metrological literature is a distinction between natural reasons and social causes for granting authority to particular representatives'. This distinction is

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<sup>14</sup> Foucault (1966: 179, c.f Callon and Caliskan ,2009: 22) pointed out the need to include the practical knowledge elaborated and mobilized by agents as he argues 'A currency reform, a banking practice, or a commercial practice can be rationalized, developed, maintained or disappear in its own form; it is always based on a certain knowledge'

<sup>15</sup> Marx in (Fragment on Machines Grundrisse 1858) his analysis and definition of the Postfordist mode of production refer to the knowledges that make up the epicentre of social production and preordain all areas of life as general intellect (c.f Virno, 2001:1)

felicitous in understanding electricity production and marketization based on two competing norms of desirability of economic growth and environmental protection. O'Connell's (1993) analysis concerns the how standardized units in electricity production depend on the authority of particular representative, circulated among engineers, scientists persuaded to accept these standards as representatives of universal scientific entities. In the domain of the carbon market standardized units of carbon equivalent CO<sub>2</sub>-e not only requires precise measurement and valuation but also expert authority to legitimize the quantification of counterfactuals. As Callon and Caliskan (2009) rightly argues standardized units which are precisely controlled and qualified creates a surer basis for their commodification.

### ***Governmentalization of State***

Foucault in his analysis of governmentality relocated the state within the 'analytics of government' referred to as 'governmentalization of state' (Foucault, 1991:103); as an effect and instrument of political strategies and social relations of power<sup>16</sup>. Foucault argued for a nominalistic conception of state and state institutions and distanced himself from the conception of state as an autonomous actor. The 'analytics of government' provides a useful framework in tracing the materiality of the state through the technologies of government and forms of knowledge in ascertaining the ways and to what extent state is articulated into the activities of government. As Rose and Miller (1992:276) explains Foucault's articulation of state as 'to the extent that the modern state 'rules', it does so on the basis of an elaborate network of relations formed amongst the complex of institutions, organizations and apparatuses that make it up, and between state and non-state institutions'.

In his discussion on neoliberal governmentality Foucault shows the so called

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<sup>16</sup> Various scholars such as Nicos Poulantzas (1973) and Bob Jessop (1990) have been distinguished for Marxist undertaking of 'theory of state' where they have argued state as an effect and instrument of social relation of power and that state power as the strategic condensation of social forces. Bob Jessop; (1990) drawing from Nicos Poulantzas (1997) argues, state as a social relations, as a site of strategic action or 'strategic selectivity'.

'retreat of state' is in-fact a restructuring of power relations from formal to informal techniques of government and a new relation between state and civil society. The difference between state, market society, politics and economy is an element and effect of specific neo-liberal technologies of government (Lemke, 2001). Governmentality studies situates historically neoliberalism's recoding of the locus of state as it entails a 'roll-back' of state and simultaneous role out of new liberal forms of rule through audits, performance management, civil experts, non-state governing mechanism and so on. Against 'state-phobia', one of the central mechanism of neoliberalism is the proliferation of strategies to create and sustain a market to restrain the excesses of the state and at the same time bring the state under the purview of the market. The market becomes the main organizing principle of state and society and the purpose of the state is to facilitate the economy and its legitimacy becomes linked to the economic growth. As Foucault argues (2008:247)' the economic critique the neoliberals try to apply to governmental policy is also a filtering of every action by the authorities in terms of contradiction, lack of consistency and nonsense'.

In the domain of climate change Bumpus and Livermann (2008:145) notes that carbon offsets may be seen as a case of neoliberal environmental governance in which management of an environmental problem is partly devolved to the market and to the individual but in which the state ultimately establishes the rules under which markets operate. The structural role of state in creating the conditions for stable growth and capital accumulation points to broad action to establish new modes of regulation for energy and environmental security, and specific climate policies to promote new forms of accumulation and sectoral growth. It brings to the fore the state's role in intervention and allocation and secure private property rights, provide scientific knowledge and creation of stable market institutions (Newell and Paterson, 1998)

The role of state in issuing carbon commodities is considered as an act of a rentier that redistributes value as 'global public good' to corporate actors (Lohmann, 2012). The violence of the state in the form of accumulation by dispossession, land

grab, expropriation of peasant livelihood in the context of climate domain have been well documented. Lohmann (2011:97) lends an understanding to this violence by arguing project developers expropriate the 'inextricably interwoven relations between humans and their natural environment' at offset sites when they are issued carbon credits for emission reduction. This is most applicable in forestry projects that enable a 'stupendous extraction of surplus-value from generations of painstaking labour' in community forest management. As Parenti puts it (2013:8) 'the modern state can be defined sociologically by specific means that are peculiar to it namely physical violence...but which state acts to regulate and produce both human and non-human natures: bodies, labour power, and the use-values of natural resources all crucial components of value'.

Overall Carbon markets as an accumulation strategy accords with Jessop's understanding of state accumulation strategies as he argues (Jessop, 1990:198) 'an accumulation strategy emerges when a model of economic growth is linked to a framework of institutions and state policies that are capable of reproducing it' (Jessop, 1990:198).

## **Conclusion**

Drawing on my analysis of theoretical framework of Foucault's governmentality and Marxist conception of primitive accumulation, the three analytical themes of climate governance copractised through are: scientization, economization and governmentalization of the state. In order to answer the research questions I would explore climate change governance in Australia from a period of 1980's to 2008 through the analytical lens of politicization, scientization, economization and above all technocratization of climate change. The analytical themes discussed focus on the link between discursive and material features of governance as it expresses a metabolic link between scientific, economic and political frames of the climate crisis, fundamental to capital accumulation. The rise of climate governance involves meshing of political and economic lexicons, integrated in climate change as an object of concern and knowledge within which the exercise of power is rationalized.

Climate governance becomes synonymous with governing climate change, subjected to scientific, bureaucratic and administrative intervention and management techniques, practices, processes, institutions created and deployed to entrench the government's larger aim of managing 'all life' across nature, population, economy and society.

## **Chapter 2 - History of Climate Change Governance: International Context**

Mitchell Dean (1999:44) describes genealogy 'as an attempt to renew acquaintance with the strangeness of the present against all attempts to erase it under the necessary dialect of reason in history or to mark it as a moment of millenarian rupture, the final denouement of irreversible loss'. This forms the main aim of the chapter. The attempt is to trace the genealogy of climate governance and negotiations in the international context for the past decade. The concern is to focus on the specificities of policy terrain i.e. problematization, process and procedures of climate governance, to make unfamiliar familiar and to show how the past is not so different from today in many respects.

Through the application of a Foucauldian-Marxist theoretical framework this chapter details the historical context and chronology of international climate negotiations to explore the dominant discursive and materialist aspects which helped define its governance. It focusses on the relations between bio-politics and capitalism in order linking climate change to the power knowledge apparatus of political economy. The assumption being successive problematization of climate change coincided with the emergence of 'bio-political governmentality' with a consecutive array of various discourses, rationalities, techniques, practices adopted in its governing. Supplemented with aspects of Marxist analysis, the aim is to explore the conjoined history of capital and climate and how nature was defined as an

element of market valorization.

The chapter argues the history of climate change governance is nothing else than a series of episodes of neoliberalism<sup>17</sup> as progressively hegemonic governmental rationality. The trajectory of climate governance followed the path of sustainable development which emerged in the 1990s based on the idea of the compatibility of ecological protection with that of economic growth and moved to a more radical contemporary manifestation of the green economy of approaching ecological crisis as a profitable business opportunity rather than an unavoidable limit. As such climate change offered a new form of enclosure for a new wave of capitalist accumulation.

## **The Genealogy of Sustainable Development and Ecological Modernization**

A collective awareness about the damaging potential of global warming owes to the publication of The Brundtland Report in 1987. In 1988 following the publication of The Brundtland Report, United Nations Environment Programme (UNEP) was established along with Intergovernmental Panel on Climate Change (IPCC), marking a key milestone in the consolidation of both scientific and political consensus on the issue of climate change. The establishment of IPCC was aimed at providing policy makers with accurate scientific knowledge concerning global warming and its social, economic and environmental impacts.

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<sup>17</sup> *The pervasive effects of neoliberalism as a hegemonic discourse on ways of thought and economic-political practices became the order of the day from 1970s onwards when the organization of global economy underwent a massive shift from what was termed a Fordist-Keynesian model to a neoliberal one (Harvey, 2005). The transformation was an effect of the aftermath of various economic crisis of 1970's followed by the end of Bretton Woods system and high level of indebtedness of industrialized nations. In identifying the main cause of economic problems, the version that won was best exemplified by Thatcherism in UK, Regonomics from US popularized as neoliberalism.*



The establishment of IPCC was considered as a reassertion of governmental control over the climate change crisis (Bodansky, 2001). The science of climate change was effectively political as it was caught up in political divisions within and among governments of US, European and other industrialized nations and the less developed ones, with divisions over energy, economic development, equity, and other issues, entangled with global warming. As Jager & Riordan (1996:346) puts it 'The science of climatic change...is increasingly being drawn into politically supported analytical structures, to the point where 'climate change science' is not always separately identifiable from the political process that shapes it'. The establishment of the IPCC as a single source of authority on the science of climate change was due to the American desire to side-step United Nations Environment Programme (UNEP) and create a platform balancing the advocacy positions of the fossil fuel and environmentalist lobbies. (Agarwala, 1999c.f Hulme and Mahony, 2010:3). When asked whether official climate change mitigation science should be considered contaminated with politics, activist Larry Lohmann (2006:38) replied

*No. To say the science is 'contaminated' would imply that it's an abnormal situation for science to be enabled, constrained and motivated by politics. But it's not abnormal. It's unavoidable. No world can exist in which policy can be 'science-led' without science being 'policy-led' at the same time. Nor would such a world be desirable. Nor would it be desirable to live in a world in which believed a world was possible or desirable.*

Governmentality studies focused on the emergence of climate change as an object of concern, through the generation of knowledge considered as an exercise of power. As Miller & Edwards argue (2001) the establishment of Intergovernmental Panel on Climate Change in 1988 an exercise of power and authority as it signified the ascendance of climate change as a global environmental risk to be understood and governed on a planetary scale. Miller (2004) attributes the convergence of many things in 1988 provided the opportunistic space within which IPCC emerged, such as the reframing of climate as 'global', the rising power of climate modelling and Earth system science, the rise of environmental politics during the 1980s, the politics surrounding the end of the Cold War and a new 'green' imperialism in

European societies.

Climate change politics genuinely became a global polity (Corry, 2013) as the issue of climate change came to be viewed as 'governance-object' constituted as real, malleable and subject to attempts at steering' (Corry, 2013: 223) through the availability of technologies of governing. Technologies such as statistical and graphical inscriptions, surveys, geosciences, statistics, maps, inventories and accounting schemes emerged as powerful and productive regimes of practices constituting particular ways of seeing, knowing and acting up on climate amenable to governmental interventions (Lovbrand and Stripple, 2013). Climate crisis was constituted as a political concern through the workings of the 'knowledge infrastructure' (Edwards, 2010:8) as it enabled the imagining of planetary climate as something observable, measurable and governable.

In the late 1960's and early 1970's the global responses to environmental problems focused on the negative environmental consequences of unregulated industrial development and in general was skeptical of economic growth. A report titled *The Limits to Growth* (Meadows et al, 1972) and the position adopted at the first United Nations Conference on the Human Environment held at Stockholm in 1972 adopted a tough stand on consumption resulting in environmental degradation and called for top down, state-led regulations against such degradation. The 1980's saw a shift in the international community to a more diffused acceptance that there is room for synergy between economic growth and environmental protection expressed in 'sustainable development discourse' that viewed economic growth and environmental protection as compatible objectives (Bernstein, 2002)

Sustainable development discourse received world prominence following the publication of *Our Common Future* by the World Commission on Environment and Development in 1987 (widely known as *The Brundtland Report*). This brought to the fore tensions between preserving nature and the practical ends of 'maintaining the economy'. The report challenged the earlier 'limits to growth' discourse and stressed on win-win linkage between environmental protection and economic

objectives. The advocates of sustainable development problematized 'limits to growth' into everyday ecological damage rather than a one single catastrophic collapse. At the same time they proposed that anti-ecological tendencies could be managed with appropriate governmental tactics and techniques by taking alternative paths towards continuing economic growth. This is demonstrated by the definition of sustainable development provided by The Brundtland Report (1987:8) as it states:

*Humanity has the ability to make development sustainable- to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does not imply limits –not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities but technology and social organization can be both managed and improved to make way for new era of economic growth*

The report offered a new synthesis of environment and development reflecting the Keynesian compromise of 'managed sustainable growth' (Bernstein, 2001:7). This new discourse on economy-environment integration was what Albert Weale (1992) dubbed 'the new politics of pollution', reflecting the importance of longer term environmental and economic assessment of costs and benefits of pollution and a cautious approach to risk assessment and scientific uncertainty.

Albert Weale's (1992) 'new politics of pollution' popularized as the 'ecological modernization' perspective played a central role towards the advancement of dual objectives of sustainable development. The principle of 'ecological modernization'<sup>18</sup> was premised on the optimistic belief that 'economic

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<sup>18</sup> The spectrum of ecological modernization discourse range from 'weak' (false or merely technical) to 'strong' (reflexive) depending on the efficacy to promote enduring ecological sustainability (Christoff, 1996: 490). This 'weak' (Christoff, 1996) variant of ecological modernization is based on the principle that one can sought to more environmentally efficient ways to continue to expand output placing economic and environment in a positive sum relationship. At the core of 'strong' variant of ecological modernization is the notion that economic growth and environmental deterioration can be decoupled by pursuing greener growth rather than by slowing growth. By 'greener growth' it is usually meant economic growth that use less energy and resources, produces less waste per unit of

and environmental considerations could be made to work synergistically'. As Eckersley (2004:83) argued 'rather than pose as a threat to economic growth, environmental criteria such as sustainability and precautionary principle can make capitalist production more efficient and consequently more profitable'. Ecological modernization re-conceptualized ecological crisis as an opportunity for 'innovation and reinvention of the capitalist system' (Hajer, 1997:32) as environmental pollution was considered as a product economic inefficiency. The aim of environmental policy was not to eliminate pollution altogether but to determine the levels of pollution which nature can endure in order for the continuation of industrial production and development.

Neo-classical economics provided the theoretical veneer for the new environmental policy debate (Weale, 1992) as the principles of sustainable development proposed incorporation of environmental costs into prices and markets. The justification behind this was that humans benefit from the ecosystem in multitude ways through ecosystem services. These services and benefits are used for human economic activities resulting in resource degradation or pollution. The 'markets fail' to take into account the costs and benefits of the environmental goods and services which are essential factors of production as they serve important economic and welfare functions. Environmental costs and benefits are therefore seen as representative of 'incomplete or missing markets' (Helm and Pearce, 1991:2, c.f Eckersley, 1995:14). So in order to rectify market failure, a price has to be imposed on negative externalities such as depletion and pollution which would enable the 'environmental factors of production' to be internalized by the market so that prices reflect 'full cost of production'. Hence the only way to tackle the environmental problem is to correct such market failures through the adoption of

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GDP, and seek constant technological innovation in production methods and product design in ways that less material- energy intensive' (Eckersley, 2004:72-73). The state enacts policies that support ecological modernization strategies while is left to the private sector to develop, test, and market these new ecologically efficient innovations and production methods (Barry and Eckersley, 2005)

market based instruments.

Timothy Luke (1995) re-reads the sustainable development discourse as a specific governmentality based on power and knowledge formations where governments and the state exert their authority to foster economic growth and development through the mobilization of new knowledge to reconstitute nature in geo-power and eco-knowledge system. As Timothy Luke (1995:28) brilliantly puts it:

*The categories of sustainable development reconstitute nature – through their recognition of the encirclement of space and matter by national as well as global economies –as a system of systems that can be dismantled, redesigned and assembled anew to produce ‘resources’ efficiently and in adequate amounts when and where needed in the modern market place without seeing a degradation in carrying capacity.*

The problematization of climate change crisis was based upon the idea of society vs nature as the constitutive antagonism as it promoted the idea of capitalist development threatened by nature and not the other way round. The logic of market rationality and ecological modernization became the overriding discourse to optimize the use of external nature for economic ends.

## **From Sustainable Development to Liberal Environmentalism**

The sustainable development discourse aimed at reconciling economic growth and environmental protection was further reinterpreted during UN Conference on Environmental and Development (UNED) in 1992 institutionalizing the position (Bernstein, 2002:4) ‘that liberalization in trade and finance is consistent with and even necessary for international environmental protection, and that both are compatible with overarching goal of sustained economic growth’. Bernstein

(2002:12) referred this newest incarnation of global environmental norms as the 'compromise of liberal environmentalism' which predicates international environmental protection on the promotion and maintenance of liberal economic order. The market friendly discourse of liberal environmentalism only became institutionalized after the consolidation of neoliberalism, and was therefore adapted to fit the new neoliberal frame.

The Rio Declaration on Environment and Development in 1992 laid down the specific elements of this institutionalization, extending state sovereignty over resources, the promotion of global free trade and open markets, polluter-pays principle, precautionary principle and its implicit support of market instruments over strict command and control mechanisms (Bernstein, 2002). The Rio Declaration specified the adoption of market based instruments as means of implementing the polluter-pays principle such as tradeable pollution permits or privatization of the commons operated to incorporate environmental costs into prices.

This 'compromise of liberal environmentalism' well reflected in the development of responses to particular environmental problem such as climate change. As Bernstein (2002:11) notes 'indeed the FCCC as a whole, as explicitly stated in Article 4(2) (a and b) rests on the link between developed countries 'modifying greenhouse gas emissions while recognizing inter alia the need to maintain long and sustainable economic growth'. The evolution of possible governance regimes for climate change was to be expected to occur within the opportunities and constraints of market mechanisms. In cases where solutions to climate change were not consistent with liberal environmental norms, international cooperation was likely to remain difficult.

## **The Road to the Kyoto Protocol**

The Kyoto Protocol can be best understood in the light of this history.

International negotiations on climate change crisis began in 1992 at the Rio Earth Summit organized by the United Nations Climate Change Convention (UNFCCC). During this meeting the countries of the world committed themselves to the Framework Convention on Climate Change (FCCC), proposing 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system' (Article 2, UNFCCC, 1992). The goal of UNFCCC was to stabilize emissions of greenhouse gases at 1990 levels by the year 2000 through voluntary measures taken by individual countries. However, it was soon realized that voluntary commitments were producing next to nothing in actual policy measures. Another major component of the UNFCCC was an agreement to accept 'common but differentiated responsibilities' (Article 3, UNFCCC, 1992) resulting in the separation of countries into two main groups, high income countries listed in its Annex I, known as Annex I parties (Developed/North nation-state) and low income countries as non-Annex I parties (Developing/South nation-state). As per the agreement, the Annex I countries agreed to make voluntary reduction in emissions; however, in practice, several of these countries made minimal efforts toward meeting their targets as proposed in UNFCCC (Gardiner, 2001)

The UNFCCC at Rio 'represented not an end point, but rather a punctuation mark in an ongoing process of negotiations' (Bodansky, 2001:34). The Annex I countries were reluctant to accept the implementation of UNFCCC emission targets and demanded a replacement of historic responsibility with that of reciprocity-based regime (Saran, 2010). The 1992 Framework Convention on Climate Change was not negotiated primarily to reduce greenhouse gas emissions but rather 'as part of wider bargain between rich and poor countries, competing energy interests and governments faced with growing economic problems making investments in the future increasingly more essential but also more difficult' (Christiansen 1994 c.f Lohmann 2006:33)

After the UNFCCC entered into force in 1994, one year later the Conference of Parties (COP)-I met in Berlin, where the parties agreed that UNFCCC would have

little effect on greenhouse gas emissions unless individual countries were held to 'quantified limitation and reduction objectives within the specified time frame', an approach described as setting 'targets and timetable' for emission reductions (Mckibbin&Wilcoxon,2002). The 1995 Berlin Mandate at the COP-I established a new round of negotiations focused on establishing Quantifiable Emissions Limitations and Reduction Obligations (QELROs) for industrialized countries without imposing any new commitments for the developing countries. Negotiations on the Kyoto Protocol took place within a special convened Ad Hoc Group on Berlin Mandate (AGBM). Although the negotiations took place within a positive geopolitical context with an active engagement of US, fault-lines were beginning to emerge (Depledge, 2005). There was growing resistance rise of skepticism on the part of Annex I countries curbing emissions as it would practically result in economic downturn. Over much of the following year, negotiations remained stalled over two issues emission targets for Annex-I countries and the adoption of flexible mechanisms to meet their targets (Bodansky, 2001).

The outcome was 'The Kyoto Protocol'; initially adopted at COP-3 in 1997 and refined and revised in subsequent meetings before it finally came into force on February 16, 2005. The process of finalizing the rules and operational details of the Protocol were agreed at COP-4 in 1998 as a part of the Buenos Aires Plan of Action.

The United States was initially party to the negotiations and lobbied for the inclusion of market-based mechanisms, allowing industrialized countries maximum flexibility, but ultimately walked away from the Kyoto Protocol in 2001. This took place after the US presidential election in 2000, won by Republican George Bush and the US repudiated the Kyoto Protocol mainly as it exempted economic competitors of developing countries such as India and China. The US decision to reject ratification was cited as a strategy to assist big benefactors i.e US oil and coal industry. The US rejection of the Protocol galvanized the remaining convention parties, and with Russia's ratification, the Protocol finally entered into force in 2005 without the participation of US or its climate change ally Australia under Prime Minister Howard (Delepedge, 2005).



With Russia ratifying the Kyoto Protocol in November 2004 and it came to force on February 16<sup>th</sup>, 2005. The ratification was considered a major breakthrough in the global politics of climate change but it raised new anxieties over the efforts required to forge new arrangements post-2012 at the end of first implementation period. At the COP-11 at Montreal, the first meeting of Member of Parties (MOP1) to the Kyoto Protocol after 1997, an agreement was hammered out to extend the life of the Kyoto Protocol beyond its 2012 expiration date and negotiate deeper cuts in greenhouse gas emissions (Sinha 2010). The Bali Action Plan agreed at COP-13 paved the path for negotiations towards Copenhagen calling for a long term goal of emissions reductions with measureable, reportable verifiable mitigation commitments including nationally-appropriate mitigation actions by Least Developed Countries (LDC's) as well as enhanced adaptation action on technology development and transfer and financial resources and investment (Bulkeley et al, 2010)

In terms of emission targets European Union (EU) and developing countries proposed 15 percent cut in GHG emissions below 1990 levels by the year 2010, while countries such as US and Australia proposed weaker targets and Japan was somewhere in the middle. The issue was resolved by specifying different emission targets for each party. The debate over 'flexibility' was even more divisive. The United States backed by industry and NGOs, proposed mechanism such as emissions trading, or through emission abatement projects in other countries. As climate expert Michael Grubb noted (2004: xxxvi) 'the dominance of US power, and the continuing weakness of foreign policy elsewhere has ensured that negotiations following the Kyoto Protocol as well as the Protocol itself have been very much as sought by the US administration'. It is interesting to note that EU and developing countries proposed domestic action to achieve emissions reductions and resisted any mechanism that would allow developed countries to obtain credit for emission reductions occurring in developing countries.

## The Kyoto Protocol- Governing Carbon

By 1995, the hegemonic discourse of sustainable development in international climate change negotiations had shifted to a new master signifier of carbon governmentality. Governmentality scholars (Oels,2005) interpret the establishment of the Kyoto Protocol as a shift in discourses and practices of climate change governance from green- governmentality (scientific and administrative rationality for management of climate change) to advanced liberalism<sup>19</sup> based on market solutions that spur technological innovations and economic growth, and construct the broader population as active participants in governance via markets. Backstrand & Lovbrand (2006) conceptualized green-governmentality and advanced liberalism as two interlocking devices adopted in governing of climate change since the Kyoto Protocol. Green-governmentality creates the global climate system by calculating carbon cycle and mobilizing scientific and administrative rationality for measuring, monitoring and certifying carbon removals. The latter provided the blueprint for action or rendered its governance on the basis of advanced liberal technologies of government. Economic thought and practices became the cornerstone of climate protection through measurement, valuation, cost-benefit analysis and risk assessment. The insertion of an efficient and cost effective emission reduction through carbon trading was deemed to account for carbon sequestered in the terrestrial ecosystem by natural carbon sinks, such as forests and oceanic phytoplankton. The measurement and valuation of forest carbon gave nation-states to access carbon markets and other sources of investment capital which would make forest preservation economically viable. Reflecting Foucault's (1991) conceptualization of bio-politics as prerequisite of governmentality, carbon accounting through sources and sinks becomes a bio-political space where humans, nature, ecosystems are infiltrated with power and authority of government. Through technologies of agency such citizenship, contracts and partnership (Dean,

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<sup>19</sup> Nikolas Rose (1993) Advanced liberal government entails the adoption of a range of devices that seek to recreate the distance between the decisions of formal political institutions and other social actors and to act upon these actors in new ways through shaping and utilizing their freedom.

1999) there was increasing participation of non-state actors, public policy networks, public-private partnerships in governing of climate change, mirroring the Foucauldian notion of heterogeneous and dispersed governing practices or 'governing at distance' (Rose, 1993). Technologies of performance such as accounting, auditing (Dean, 1999) the 'conduct of conduct' of experts, accountants, consumers, and corporations are regulated as calculating subjects in favour of optimal climate protection in the face of market prices. Under advanced liberal rule 'calculative regimes of positive knowledge of human conduct are to be replaced by calculative regimes of accounting and financial management but also to a more general problematization of the forms of reciprocal social understanding that were embodied in rationalities of trust' (Rose, 1993:295). The development of governing conduct in accounting and audit is reflected in regulations and rules directed at economic efficiency based on cost benefit analysis.

Thus relationship between neoliberal reforms and environmental politics, governance and change correlates to the imperatives of neoliberalization: of creating opportunities for capital investment and accumulation by reworking state-market-civil society relations to allow for the stretching and deepening of commodity production, circulation and exchange (Heynen et al, 2007:10). Further this is combined with individual rights and freedoms in the form of private ownership and property rights of global commons which as a necessary reworking of a socio-nature. As Heynen et al puts it (2007:10)

*In this way both neoliberalism and liberalism are both products of and drivers toward, reconfigurations of socio-natural systems. In both cases, moreover the transitions are neither inevitable or smooth, requiring as it does coercions, political contests, physical confrontations and deliberate manipulations of institutions, including in science policy, state-industry-university relations and property rights.*

Governmentality scholars focus on the specific tools, techniques and process in governing of carbon as an object of market calculability and commensurability (Methmann, 2011, Mackenzie 2009). Lovbrand and Stripple (2011) develop an 'analytics of carbon accounting' drawing attention to calculative practices that turn carbon stock and flows into objects of governance. Carbon accounting as a

rationality of government entails abstraction of carbon blurring the ‘natural distinctness’ and ‘economic equivalence’ determined by exchange values sold or traded in the market. The carbon is abstracted through the assemblage of humans and non-humans as a socio-technical network in practices of measurement, quantification and statistical aggregation. Markets are socio-technical ‘combinations of material and technical devices, texts, algorithms, rules and human beings with their various instruments and prostheses’ (Callon and Caliskan, 2010). Voss (2007) further argue the emergence of carbon trading is contingent on the way economic theories of ‘market failure’ were elaborated into new technologies of governance.

## **The Birth of Carbon Trading**

The establishment of Kyoto Protocol in 1997 marks the official date of the birth of carbon trading. Under powerful political pressure exercised by the US delegation the parties structured both the design and implementation of the Kyoto Protocol around three market-led mechanisms called flexibility mechanisms. The dogma of carbon trading was based on an economic rationale, that markets for emissions permits and credits would simultaneously reduce the aggregate cost of meeting the emission reduction targets, foster sustainable development and create profitable business opportunities for green business. The pervasive pursuits of market-based responses to climate change is consistent with the assumption: the environmental limit is converted by neoliberalism into the process of market valorization.

At the Rio+20 United Nations Environmental Programme (UNEP) held in 2012, a preparatory document entitled Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication climate change crisis was dubbed as a market failure<sup>20</sup> perpetuated by short term profitability of capital. However, this

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<sup>20</sup> The notion of market failure was advanced by Nicholas Stern (2006:1) ‘The science tells us that GHG emissions are an externality; in other words, our emissions affect the lives of others.

market induced deficiency can be rectified by market based incentives since it is assumed that markets failed due to imperfect information. The logical path is therefore a better collection and elaboration of data that will provide the competitive monetary drive to internalize the previously, costless damaging externalities. This internalization required the creation of a new ensemble of commodities around the notion of 'carbon' and the establishment of dedicated markets to exchange them.

From an economic perspective, the aim of the Kyoto Protocol was to tackle the threat of climate change by establishment of an efficient regulatory framework that would set an international 'price'<sup>21</sup> on emissions of six greenhouse gases<sup>22</sup> of 39 Annex-I countries<sup>23</sup> with practices for offsetting against projects in developing countries. The core mechanism to achieve this is quantified emission commitments for industrialized countries (during Kyoto's first commitment period 2008-2012), entitled to market-based flexibility through use of emissions trading and other international economic instruments (Grubb, 2003). The Kyoto Protocol's Article 3(1) provides (The Kyoto Protocol, 1997)<sup>24</sup>

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When people do not pay for the consequences for their actions we have market failure. This is the great market failure the world has seen'.

<sup>21</sup> The pricing mechanism is primarily based on the work of Pigou (1932) and Coase (1960) where negative environmental externalities are attributed to the absence of market and property rights in relation to the environment. The standard neoclassical solution to the problem of negative externalities is through the introduction of property rights and private transactions in markets where ecosystem service and can be freely bought and sold. Market based instruments such as user fees, tradeable permit schemes and other market based incentives can be used to price resources, stimulate reductions in resource waste, enhance efficient resource utilization and ultimately result in the development of an alternative resource or replacement.

<sup>22</sup> The greenhouse gases are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulphur hexafluoride (SF<sub>6</sub>). The two groups of gases are: hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs)

<sup>23</sup> The key feature of the Kyoto Protocol is an appendix, known as 'Annex B' that specifies annual greenhouse gas emission limits for 39 industrialized countries including the developed members of the Organisation for Economic Cooperation and Development (OECD) and countries that were formerly part of the Soviet Union popularly known as Economies in Transition (EITs). In continuation to UNFCCC's segregation of countries the Protocol imposed targets on the Annex I countries while the non-Annex I countries (developing countries) were not imposed any legally binding emission reduction standards.

<sup>24</sup> <https://unfccc.int/resource/docs/convkp/kpeng.html>

*The parties included in Annex I, shall individually or jointly ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex I do not exceed their assigned amounts calculated pursuant to their quantified emission limitation and reduction commitment inscribed in 'Annex B' and in accordance with the provision of this Article with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period of 2008-2012*

The Protocol provided three 'flexibility mechanisms' that can be used by Annex I countries to enable emission reductions to occur in the most cost effective manner and in cheapest locations across the globe. These mechanisms are 'Emissions Trading', 'Joint Implementation' and 'Clean Development Mechanism' (The Kyoto Protocol, 1997). Article 17 of the Kyoto Protocol allows Annex I countries to 'participate in emissions trading for the purposes of fulfilling their commitments' provided that trading is supplemental to domestic action.

The first of the flexibility mechanisms is Emissions Trading: Though originally objecting to the inclusion of the 'flexibility' mechanisms in the Kyoto Protocol, European Union had been at the forefront of developing the carbon market. The protocol provides each Annex -I country an initial target of limiting or reducing emission expressed as allowed emissions or 'Assigned Amount' over 2008-2012 commitment period. In the EU emission trading works as follows: a governmental agency sets a maximum limit to the amount of pollutants that can be emitted. The limit or cap is reduced to basic units (emission credits 'Assigned Amount' Units' (AAUs) under the Kyoto Protocol 'European Union Allowances' (EUA), which are auctioned to firms or allocated (grandfathering). Firms to hold a number of permits equivalent to their emissions and the total number of permits cannot exceed the cap; thus the amount of total emissions is limited to that level. This cap and trade model is a hybrid form where the cap is set by the state, and the eventual allocation and transfer of permits is organized as a trade.

The second and third flexibility mechanisms are joint implementation (JI)

and the Clean Development Mechanism (CDM). The economic rationale underlying these mechanisms are that it is cost effective to save emissions not at source where it is actually produced, but elsewhere through technology transfers and investments in renewable energy. These reductions are labelled as 'carbon offsets' which are used by Annex I countries to meet their commitments in the Kyoto Protocol (Hepburn, 2007). This difference in emission is counted as a credit to the Annex I country, referred to as 'Certified Emissions Reductions' (CERs). The politics of offsets is centered around the assumption that reductions made in one given place is ecologically equivalent to reductions made in another place. Here capital's internalization of nature through creative destruction takes place spatio-temporally. The Joint Implementation (JI) among the Annex I countries are bilateral projects based rather than market-based, in which one country receives Emission Reduction Units (ERUs) for undertaking emission reduction projects in another Annex I country.

Another mechanism, Reducing Emissions from Deforestation and Degradation through conservation and enhancing forest carbon stocks and sustainably managing forests in developing countries (REDD+) was conceptualized for the post 2012 international climate regime. The rationale for REDD+ was based on the need to maintain forest sinks as deforestation and forest degradation accounted for 10-20% of greenhouse emissions.

The system of carbon sinks was first envisaged in Article 3 of the Kyoto Protocol to allow countries to offset part of their fossil fuel emissions by activities or processes such as land use, land use change and forestry(LULUCF) or other activities – collectively known as 'sinks' which facilitate in removal of carbon dioxide from the atmosphere.

The primary beneficiary of this provision is Australia, commonly referred to as Australia clause as sub-clause 3(7) allows it to include LULUCF emissions when calculating its 1990 base year emissions, treating them almost like an additional source. This concession was to result in inflation of Australia's baseline emission

scenario and thus make it easier to meet the Kyoto target for the commitment period of 2008-2012. In 2007 at COP-13 in Bali forest offsets were recognized and REDD+ was included in the final document.

Put this later!

## **The Politics of Carbon Trading**

Market-based response to climate change rest on the logic of neoliberalism, the primary assumptions being that 'privatization, marketization and commodification of ecological systems are the optimal means of conservation' (Castree, 2008:147). The connection between neoliberalism as an environmental project and the neo-liberalization of nature can be best explained in terms of the congruence of market rationality to the theory of capitalist accumulation and valorization. The relationship between science, power, economy and society is imperative in understanding how technical discourses of environmental conditions or change are enrolled in the political and economic momentum for enclosure, control and reconfiguration of socio-nature (Heynen, et al, 2007). Nature as a 'technological artefact' is constructed and constituted as it gains meaning through the knowledge practices where representations of nature as an object of political concern is stabilized and transformed (Baldwin, 2003). As Braun (2000:14) argues 'nature ordering in and through modern forms of knowledge is related to and in part constitutive of the ways in which nature is integrated into forms of political and economic rationality'.

The ascendance of carbon markets has become a dominant feature of climate change governance as it views the market as a source of innovation, efficiency and incentive necessary to combat environmental degradation without compromising economic growth (Newell, 2010). When the issue of climate change became prominent in the international policy agenda during 1970-80's it was soon realized by the economies contributing most to the problem that the market offered the most politically acceptable solution as it would bring down the costs associated with reductions and increase 'flexibility' about where reduction in emissions would take



place (Newell et al, 2012). Carbon market soon became the defense using neoliberal rhetoric: 'If we have a global carbon price, for advocates the market sorts it out' (Scott, 2008, c.f Lohmann, 2011)

The protagonists of market-based solution argue that there is no real difference where in the world a tonne of carbon 'tCO<sub>2</sub>e' is reduced so it makes sense to create a mechanism which would allow the countries to pay for reductions where it is most cost-effective and cheapest to do so. The basic idea is to set a standard which is regulated by issuing permissions or permits to pollute. Polluters must have enough permits which would allow them a certain amount of pollution they produce at given period. The efficiency aspect arises from making the permits tradeable. As the polluter has no choice but to reduce pollution in line with their existing amount of permits they can alternatively buy permits on the open market (Spash, 2009).

The invocation of the ideology of market 'efficiency' justified the claim that permit trading would result in large cuts in emissions at a lower cost than traditional 'command and control' measures by providing financial incentives for heavy polluters to reduce their emissions and a reward system for less polluting countries that are entitled to sell surplus permits (Lunde, 1991). The inclusion of 'flexibility' was the price paid to the big carbon polluters to participate in the climate change negotiations particularly at the Kyoto (Newell, 2010; Eckersley, 2009). The prospect of a transfer of resources from the global North to the South through trading of offsets provided an incentive for many developing countries negotiators to support market-based approaches.

Thus, Emission Trading became a preferred solution because of its ideological fit with neoliberal logic and most importantly it fit with the newly emerging interests of the dominant financial actors that carbon markets could be a significant site of growth and profit (Newell and Paterson 2010). Emission Trading Scheme became unstoppable once the private, financial actors realized its potential as a new market, with its derivatives, options, swaps, insurance and so on.

There was indeed a proliferation of whole range of private actors such as Eco-securities (1997), CO2e.com (2000) in the voluntary carbon markets. Various banks opened their carbon trading offices such as Barclays or Dresdner Kleinwort. Associations of actors like International Emissions Trading Association (IETA), Emissions Marketing Associations became key drivers in promoting the Emission Trading Scheme in the face of challenges to abandon it (Newell and Paterson, 2010). As Lohmann (2010: 235) 'as financialization gained momentum, governments, financial and energy interests facing a potential unrest due to the uncertainty and deepening of climate crisis were encouraged to turn to 'quants' for developing or creating a 'commodity' as a neoliberal solution to global warming'. The mechanism worked on the premise 'that assigning property rights to emissions and creating a market that allows them to be transferred will enable emission reductions to be achieved where it is most efficient, or cheapest to do so' (Bernstein, 2002:10). It essentially aimed to create carbon as a measurable commodity. Turning greenhouse gas into a commodity and its allocation through permits, equivalent to attributing property rights to the polluters, created an incentive to hoard and speculate. Further, as the emissions trading allowances are semi- permanent property rights which are used to privatize common goods, Lohmann notes (2006:77) 'far sighted companies treat carbon trading as an opportunity to gain new property, assets and openings for capital accumulation, even if climate change is accelerated in the process'.

A commodity form of carbon gains currency through the process of commensuration<sup>25</sup> or 'sameness' (Mac Kenzie, 2009) where once the carbon is quantified into benefits and dis-benefits and identified into emission reductions, an emission cut in one place becomes equivalent and thus exchangeable with a cut of the same magnitude elsewhere. The commensuration of carbon takes places

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<sup>25</sup> As Lohmann (2009:502) points out 'while the Marxist tradition has stressed the priority of exchange to commensuration, it has perhaps neglected exploring the way categories created by new commensurations help make possible new forms of exploitation and wealth, preferring instead to follow out a more classical attempt to locate supposedly calculable surplus value'

through various financial procedures and practices and accounting is one of them as it makes economic items visible and classifies them into an entity. As Lohmann (2010:238) puts it 'in this way a 'thingified' climate commodity is created whose cost-effective allocation via pollution rights trading can become coherent, 'a political' programme for action and whose status as asset, grant or financial instrument can be engineered to fit various 'accounting standards'.

Critics argue that setting an arbitrary emission limit is flawed. It is very hard to say how much emissions should be limited, as it is determined by factors such as technological change and economic growth both of which are unpredictable (Victor, 2001). In order for the trading to begin, the government first allocates the emission permits. As countries are unable to anticipate future emission, one does not really know how many permits it will need. As a result, each country demands a large share of permits, imagining that future emissions and costs of control would be higher than expected (Victor, 2001). One of the biggest failures of the Kyoto Protocol was to develop fair, objective and transparent formula for the allocation of permits to firms or individual countries (Eckersley, 2009; Spash, 2009). In the EU ETS the tradable instruments of European Emission Allowances (EEAs) were distributed for free to the biggest polluters, referred to as 'grandfathering'. The allocation of permits under grandfathering use a 'business as usual' (BAU) baseline which requires forecast of economic growth and other factors which influence output and so were heavily influenced by the primary concerns of those producing the estimates (Spash, 2009:20). Due to government growth promotion and protectionism towards industrial exports, the industries often inflated actual emissions to create high baseline estimates. This influence of capital can be explained through the prevailing assumption of state managers that growth in energy production and consumption is fundamental to economic growth. The argument that substantial GDP losses would result from even a modest CO<sub>2</sub> limitation has been dominant in policy debates on climate change. As Newell & Paterson argued (1998:693) 'the interest of 'capital in general' has thus become synonymous with promoting the interests of fossil fuel companies'. Hence over-allocation of permits often results in little or no abatement, risking a collapse of the

trading system. The firms use these allowances as incentives to emit more in order to receive free allocations in the future.

Contrary to the viewpoint of conventional economics that permit prices need to be relatively stable to convey a consistent message about the cost of emissions, there is ample evidence of price volatility and large fluctuations in the carbon markets. This occurs due to uncertainty in government rules and regulations, because of the shape and coverage of the emission reduction target trajectory, and the extent and range of carbon credit offsets that can be certified (Rosewarne, 2009: 25). It has been realized that free market therefore cannot guarantee price stability (Rosewarne, 2009) and that emissions trading in itself cannot predict with certainty about future carbon prices (Spash, 2009). The proponents of carbon markets call for the creation 'secondary markets', markets in carbon futures market, including trade in carbon credit offsets and CO<sub>2</sub> derivatives to ensure stability emission permit price (Rosewarne, 2009:25). As Rosewarne (2009:29) puts it 'carbon futures establish a window into the future, that purportedly unveils 'efficient inter-temporal carbon permit price formed in the context of emission reduction target'. In futures markets price formation and decisions about mitigating emissions entail producers weighing up the costs and benefits of buying emission permits or offset credits the expected future price of permits. This also entails hedging against the risk of holding or not holding these future rights (Mackenzie,2006 c.f Rosewarne, 2009).

Therein lies the paradox of neoliberalism where markets conceived as natural and 'self-regulating' mechanism as the most efficient and the most moral form of social and economic organization (Hayek, 1944). The enhanced liquidity provided by futures markets result in the inversion of the forces that shape price formation. As Chang notes (2009) 'current prices will be driven by expectations, including speculation, about futures pricing, and thus bear little relation to the marginal cost of emissions or the marginal cost of abatement and what would be regarded as an 'efficient emission permit price'.

Contrary to the neoliberal doctrine that carbon trading takes place in a free

market scenario where the firms are price takers with no market power, in actual practice large corporations possess power allowing them to regulate and manipulate the market through practices such as mark-up pricing, price discrimination and monopsony (Spash, 2009). Spash (2009:13) notes 'the potential for price manipulation and variation due to market structure means the standard assumptions of marginal costs rising under ETS and price signaling working to indicate social costs of pollution no longer holds'. As the market power of industries and corporations result in over-allocation of permits, speculation, profiteering, it also increases investment in polluting technologies. For instance Czech electricity giant CEZ were allocated one-third of the country's allowances, selling them in 2005 when prices were high; when the price collapsed they bought them back and the profits were invested in coal energy production (Lohmann, 2006:91). Polluting firms often engage in this 'rent seeking behavior' to invest in valuable resources in order to obtain higher allocation of permits (Victor, 2001, Hepburn, 2007).

The carbon market itself is a distraction from the actual problem of climate change mitigation. Equating carbon with tradable property rights, results in the entrenchment of fossil fuel through a 'polluter earns' system, distracting from long term structural changes required under global warming. As Martin Weitzman correctly comments (2009:17, c.f Lohmann2010:242), 'to disregard the incredible magnitude of the deep structural uncertainties that are involved in climate change analysis, by presenting a cost-benefit estimate for a situation with potentially unlimited downside exposure, as if it is accurate and objective, is dangerously misleading'.

In carbon markets there is not only an abstraction of how emissions cuts are made but also an abstraction for where they are made maximizing efficiency and 'cost-effectiveness' (Lohmann, 2008). Carbon offsets is a particular kind of commodity, constitutively intangible and dependent on abstract calculations and accounting. Carbon offsets compensate for excess emissions in one location through a carbon reduction in another based on the principle of commensuration or fungibility. The principle of commensuration is considered scientifically dubious as

how much space exists above ground, which can act as a safe dump for carbon from underground fossil sources, cannot be calculated accurately (Lohmann, 2008).

Offsets are commodified into saleable units through the specific emission projects which can be quantified, owned and traded. The financial market often dominates the buyer's side of the credit market as they play an important role in commodifying offsets as speculative assets like financial derivatives, and in turn finance offsets projects or buys carbon credits. Offsets create new investment opportunities thereby facilitating accumulation by new carbon entrepreneurs. The financial market actors drive the enthusiasm for carbon markets for opportunities in direct investment in offset projects, and indirect opportunities for commodification in secondary markets, such as verification of reductions, derivatives and insurance associated with trading in emissions (Paterson, 2005; Bumpus and Livermann, 2008)

The carbon market has been described a new form of 'accumulation by decarbonization' insofar 'capital can achieve higher rates of accumulation as it needs to invest less in domestic emission reduction' (Bumpus & Liverman, 2008:142). This flexibility offered on the part of polluters to find a least cost solution through offsets and trading has been seen as ways by which rich countries and heavy polluters shirk their responsibilities, by avoiding expensive domestic investment and picking up low hanging fruit elsewhere. Carbon offsets through CDM have been referred to as 'carbon colonialism' (Bachram, 2004) pointing to the power unevenness resulting unequal exchange between countries of North and South. The countries of the South become an atmospheric carbon dump at the cost of continuing fossil fuel addiction of the industrialized countries of the North.

The new carbon economy provides possibilities of accumulation through profits generated from carbon trading not only through the sale of lower carbon technologies but in particular ways in which permits to emit carbon are negotiated and the conditions for its exchange are regulated (Bumpus and Liverman, 2008). The conventional division between market and state is increasingly blurred in the

carbon markets as ‘one governs for the market, not because of the market’ (Foucault, 2008:12). The state regulates and establishes the rules under which markets operate and it also create new markets for trading and stabilizing capital investments. Following Peck and Tickell (2002) this is ‘rollout neoliberalism’ in which the state intervenes to allocate and secure private property rights, provide scientific knowledge and create state market institutions. According to Bernstein et al (Bernstein, Clapp and Hoffmann, 2009:6) ‘Corporations, social and environmental organizations, public-private partnerships, sub-state governments and even local communities have already begun to conceive and implement governance initiatives to address global environmental problems’. Whilst market-based responses to climate change can be seen as a triumph of the market over the state, the creation of market entails rule making and intervention by states alongside other actors in networks both in national boundaries and international negotiations.

## **Power Blocs at Climate Change Negotiations**

In the context of climate change governance state and non-state actors such as corporations and civil society organisations have material, discursive and organizational power. Power is exercised in coalition building across different sites in the global political economy (Newell, 2009). The neo-gramscian concept of hegemony ‘conceptualizes power in terms of configuration of forces relative to each other and to adversaries’ (Levy and Newell, 2005:51). The concept of hegemony as ‘allows sensitivity to the multiple socio-political factors and dynamics that confer actors with varying measures of power at different stages in the development of both national and international climate governance systems’ (Okereke et al, 2009:65). It also allows us to be sensitive to the unequal power relations of groups and actors even if they are working in consensus.

Since its inception in 1990s, the process of international negotiations and agreement on climate change has been characterized by the politics of domination and legitimacy (Carter, et al, 2011). Climate change negotiations are marked by

shifting coalitions of interests and groups as well as a range of discursive and institutional practices designed to inhibit meaningful action on climate change (Wittneben, et,al, 2012) Climate policy instruments are a reflection more of the power and authority of actors than 'scientific' or 'efficient' measures to mitigate the effects of climate change.

Until 1988, the climate change issue was led by non-governmental actors and few scientists in the field acting as 'knowledge brokers' to help translate and publicize the emerging scientific knowledge about greenhouse gas effect. In 1988 climate change for the first time emerged as an intergovernmental issue and governments began to play a greater role (Bodansky, 1993). The establishment of the IPCC marked the reassertion of government's control over climate change. Until 1990 the governments interested in climate change were primarily from Western industrialized countries conducting the bulk of scientific research on climate change (Bodansky, 1993). Soon after fault-lines started to appear among industrialized countries. In the process of climate change policy negotiations, governments organized themselves into blocs and negotiating coalitions to enhance their influence and to advance common agendas (Newell & Bulkeley, 2010). These key coalitions and negotiating blocs emerged early on in the negotiations, but as the issues changed and levels of economic development (Paterson, et al, 1992). Throughout the history of negotiations, fault-lines of political conflict in relation to climate change have resulted in change in positions of some key actors, creating new alliances and historical blocs (Anderson et, al, 2002, Mathew Paterson et al, 1992, Bodansky, 1993).

An important divide emerged between major energy producers and others. Countries dependent on energy exports such as Organization of Petroleum Exporting Countries (OPEC) and Australia feared the economic consequences of emission reductions and opposed abatement measures even taken by other countries (Paterson & Grubb, 1992). This bloc affected the pace and course of climate change negotiations, calling for greater scientific certainty before taking any action and forming alliances with businesses opposed to action.



The shifting alliances and blocs between the countries were based on economic interests related to costs of emission reductions. In countries such as the USA, Japan, Canada, and Australia debates and contestations reflected tensions over economic growth, international cooperation, differentiated responsibilities and distributive justice. The transformation of the CANZ negotiating group prior to JUSCANZ in the Kyoto negotiations is illustrative of this (Anderson, et al 2002). Canada, Australia and New Zealand (CANZ) were initially in favour of strong emission reductions and tended to side with European Union (EU) during negotiations for the Climate Convention (Bodansky, 1993). However, when United States and Japan became participants to the group and added 'JUS' to the group, it soon demanded differentiated commitments, in practice meaning that they should be allowed to increase emissions, as abatement costs were so high due to various 'special circumstances'.

The United States, Australia and Canada's refusal to accept binding emission targets was based on their concern about competitive vulnerability linked to powerful lobbying by corporations and industries. The influence of industry associations such as the International Council on Mining and Metals and World Business Council for Sustainable Development at climate change negotiations had been amply documented (Peterson & Newell, 2010). The associations claimed emission reductions would be too costly and hamper the profitability of firms, result in increased consumer prices and give polluting competitors in developing countries an unfair advantage, resulting in relocation and closing down firms referred to as leakage. The fossil fuel companies through their aggressive lobbying were able to secure their interests in negotiations and agreements at various conferences of parties (COPs). The industries demanded 'flexibility' in climate change policies would including use of market mechanisms with voluntary, non-enforceable and 'pledge and review' approaches to climate change (Newell & Paterson, 1998)

The fault-line between countries of the North and the South was a significant

one and was apparent from early discussions on climate change, demonstrating a divergence of positions with the South arguing the North was the leading contributor to the problem, and were duty bound to accept responsibility and take action (Bulkeley & Newell, 2010). The Southern nations differentiated between 'luxury emissions' of North versus the 'survival emissions' of the South, compounded by carbon colonialism and carbon injustice (Agarwal & Narain, 1991)

The UNFCCC on Climate Change adopted in the 1992 acknowledged the principle of 'common but differentiated responsibilities' and the separation of Annex I and Non Annex I countries, on the principle that everybody has a responsibility to act but some have more responsibility than others. The principle of 'common but differentiated responsibilities' was further reaffirmed in COPs at Berlin and Bali. However, several industrialized countries such as the United States, Canada, and Australia opposed any differentiated responsibilities. As a result, the distinction between Annex 1 and non-Annex 1 countries soon became blurred at the Copenhagen summit in 2009. As Carter et al (Carter et al, 2011) argue the failure of Copenhagen highlighted the depth of distrust and disagreement between and within industrialized and developing countries. This was reinforced at the Durban COP where there was no mention of 'common but differentiated responsibilities', 'distributional equity' or 'historical responsibility'.

United States played a dominant role throughout climate change negotiations and prior to The Kyoto Protocol as observed by Grubb (1999:112) 'within this panoply, US dominance is striking'. The US position on climate change was to promote 'flexibility' in all arrangements. Carbon Trading became the cornerstone of climate policy at the Kyoto Protocol at the insistence of the United States despite objections from European Union and developing countries. Countries objected carbon trading as it could undermine mandatory reduction targets and enable the US to avoid significant domestic action on emission reductions (Grubb, 2004). In the final hours of the Kyoto Protocol US decision to walk away from ratification was a result of powerful industry lobbying that persuaded their government not to accept emission reduction commitments unless developing countries accepted similar commitments. Grubb (2004:27) describes the US strategy during early

climate change negotiations as 'one of the most cynical, successful, international lobbying campaigns in history'.

Even though the US pulled out of Kyoto in 2001, the approach had become entrenched internationally, as Lohmann (2006:50) comments 'a little tested idea spearheaded by a small US elite was now perceived as a global consensus and the only show in town'. Not only was the US able to impose a language on climate talks in which any objections to neoliberal policies were conveniently sidelined but even the structure of the climate negotiations was itself biased in favour of US interests. As Joyeeta Gupta notes (2000: 125-126) standard UN negotiating techniques such as 'avoiding polarisation', incrementally building on agreement' and pretending to be guided by international legal norms, automatically relegated talks of structural change to the category of 'merely rhetorical' or 'irrelevant'. The EU took an active role in climate change negotiations which was the only country to offer to undertake unconditional emission reductions. When comparing the EU and the US, Grubb (1999:112) noted 'the coherence of the US administration contrasted with the unwieldy morass of EU decision making in the negotiation process'.

Another significant coalition or historical bloc in the context of climate change governance was that of a cohort of carbon entrepreneurs. The emergent material power of private financial actors in the 1990s played a crucial role in providing a traction for the progression of carbon markets. There was a proliferation of private actors such as Eco-securities, CO2e.com in the voluntary carbon markets. Various banks opened their carbon trading offices such as Barclays and Dresdner Kleinwort (Newell and Paterson, 2010). The global networks of financial actors were influential in the political process as they pursued their market agenda through sustained lobbying efforts. Associations of actors like International Emissions Trading Association (IETA), and the Emissions Marketing Associations (EMA) became key drivers in promoting the carbon markets in the face of challenges to abandon it. The idea of emissions trading scheme (ETS) became unstoppable once the private, financial actors realized its potential as a new market, with additional derivatives, options, swaps, insurance and so on (Newell and Paterson, 2009).

Shifting coalitions and alliances were formed within the countries of South. At one extreme of the G-77 bloc there were oil producing countries (OPEC) led by Saudi Arabia and Kuwait, opposed to any limitation on greenhouse emissions. At the other extreme were countries such as Alliance of Small Island States (AOSIS) which were extremely vulnerable to the impacts of climate change and rising of sea-levels. Cracks and fault-line amongst countries of South were apparent during the Conference of Parties at Copenhagen in 2009. The Bolivarian Alliance for the Americas (ALBA)<sup>26</sup> and the Alliance of Small Island States (AOSIS) demonstrated signs of disaggregating and moving away from the agenda of Oil and Petroleum Exporting Countries (OPEC) in the G77 and showed signs of strengthening power in the South.

## **Conclusion**

The easy conclusion from the chapter is that little has been achieved in terms of a global agreement to reduce emissions and that time is running out. Climate governance as it stands today is characterized as a simultaneity of an urgent recognition radical policy change and equally unprecedented unwillingness and inability to perform such change. The 'history of the present' of climate governance as a discursive and materialist narrative portray various modalities and configurations of 'socio-ecological governmentality' linked to the politicization scientization, economization and most importantly technocratization of climate crisis.

The scientization of climate change provided a precursor to the economization of climate crisis through the emergence of emissions trading. Climate crisis was constituted as a political concern through the workings of the scientific 'knowledge infrastructure' as it enabled the imagining of planetary climate as something observable, measurable and governable. The establishment of IPCC

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<sup>26</sup> Venezuela, Cuba, Bolivia, Nicaragua and Ecuador

Change was considered as an exercise of power and authority as played an important role in incorporating scientific knowledge and authority into climate change governance. The scientific knowledge and authority of IPPC was predominant in the establishment and estimation of carbon-dioxide as a negative externality, as a public deterrent not accounted in economic transactions that produce it. The economization of climate crisis was best understood that the key to managing carbon emissions was to internalize them in economic transactions. In alignment to the idea that climate change was to be best governed by internalizing greenhouse gas emissions as a negative externality, The Kyoto Protocol not only established a market price by placing quantitative limits on emissions but it created the carbon credit as a commodity. Further it led to technocratization ( through scientific and economic expertise) of establishing a market system for a trade of carbon in three forms : emissions trading, the Clean Development Mechanism and Joint Implementation (JI).

The carbon markets have failed, as there exist a manifest short circuit between the protection of the environmental and the economic means of carbon trading. Frustration over the farce of climate change governance was brilliantly put forward by Edgardo Lander from Transnational Institute in the following passage (Lander, 2011:8)

*It is not a matter of questioning the fact that the fundamental decisions in society are made by 'the market', but of expanding the market's sphere of information and action to explicitly incorporate nature in its logic of values. This requires overcoming all obstacles to the full commercialization of nature. For the good functioning of the markets, everything must have a price, opening up new spheres for speculation and capital value. It should therefore come as no surprise that they [UNEP experts] defend the fundamental role to be played by carbon markets and the market-based programme on Reducing Emissions from Deforestation and Forest Degradation (REDD+). In fact, they do not even pay lip service to the existence of critiques, disagreements and resistance to these flawed mechanisms.*

Foucault's famous statement about the prison system applies to the use of

carbon market to correct the problems of growing emissions, it is possible to conclude that carbon trading 'has always been offered as its own remedy: the reactivation of its techniques as the only means of overcoming its perpetual failure [...] the supposed failure is part of its functioning (Foucault, c.f Lohmann, 2011:102)

# **Chapter 3: A Genealogy of Ecologically Sustainable Development (ESD) in Australia and Bob Hawke**

## **Introduction**

This chapter details the trajectory of climate change policy of Prime Minister Bob Hawke (1983-1991), situating it within a backdrop of neoliberal transformation with its synchronized discourses, rationalities, techniques, practices adopted by government in governing climate change. Based on the rhetoric of global responsibility and commitment to environmentalism, the government adopted a 1990 Interim Planning Target of greenhouse emission reduction (to stabilize greenhouse gas emission at 1988 levels by 2000 and to reduce 20 percent of emissions by 2005 based on 1988 levels) with an attached caveat 'that there should be no adverse effect on the Australian economy and upon trade competitiveness' in particular in the absence of similar action by other countries. The 'caveat' provided a stepping stone for future actions on climate change by successive governments as it was adopted in various forms and formats against any meaningful action towards climate change mitigation.

In this chapter I aim to deconstruct the Ecologically Sustainable Development (ESD) policy of Prime Minister Bob Hawke as a set of power practices for re-regulation of the economy in alignment to the needs and interests of the biosphere. The proponents of ESD claimed climate crisis or crisis of the biosphere as an obstacle to economy. The proponents of ESD did not question the value of economic development in and of itself, rather they offered an alternative framework for re-regulation of the economy aligning with the needs of the biosphere. The policy experiment of Ecologically Sustainable Development (ESD) provided a platform for bio-political governmentality; climate change crisis was closely linked to regulatory control and management of 'all life', as a technique for managing population,

economy and environment and for the institutionalization of new forms of knowledge through scientific and economic expertise based on bio-economic understanding of environment. The policy process was used as a strategy to manage social conflicts over different understanding of climate change crisis through assimilation and consensus and actively constructed a problem for which solutions could be found and institutions could handle.

The ESD policy and practice was adhocery of Hawke government to legitimized the social order under the assumption of the inevitability of capitalism and market economy as the organizing principle of society for which there is no alternative. The ESD politics was based on consensual reflexivity for continuation of a given social order as the 'accordist' arrangement was used in the inclusion and assimilation of industry, environmental organizations and the wider population in governmental consultative process resembling a neo-corporatist approach, with an objective of continued economic growth, fossil-fuel extraction, creation of jobs and overall insertion of nature and society into capital. The ESD policy discourse was not only about maintaining and enhancing the biosphere but also about the production of 'new nature' where techno-scientific power/knowledge (that is geoscience, satellites, contingent valuation, measurement) was used in the capitalist abstraction of nature blurring the distinction between use values and exchange values. Neoliberal environmental governance was based on a pliable and docile biophysical reality without any limits, to enhance the possibilities of appropriation, commodification and capital accumulation.

## **Origin of Environmental Crisis in Australia**

The history of environmental crisis in Australia can be dated back to the colonial expansion when early settlers imposed European development patterns such as agriculture and mining of soil, resulting in first 'metabolic rift' through erosion of minerals and soil nutrients without replacing them. A striking feature of economic development of Australia, is that from early on, development has been highly political due to the deep involvement of the government (Walker, 1992) in



land clearance, subsidizing infant industries. The government's major share of revenue came from trading rather than taxation a form of dependent developmentalism (Walker, 1992).

The relationship between societies and nature in Western societies is based on exploiting nature and externalizing the negative consequences of its appropriation (Brand, 2010:140) Such a relationship is characteristic of the industrial period of Fordism and also holds true for post-Fordist period commonly referred to as globalization. The shift to a post-fordist model of development since 1970s resulted in unrestrained growth of the Australian economy that has few parallels in the advanced industrial world (Rosewarne, 2005). The mammoth economic success attributed to the vast extraction and use of fossil fuels can be aptly described in Mumford's words (1934) as 'carboniferous capitalism'. Politics in Australia became synonymous with sound neoliberal economic management (Besson & Firth, 1998; Pusey, 2003). The ascendancy of neoliberalism since 1970s resulted in trade liberalization, deregulation, privatization and above all a 'free-market' which went hand in hand with manic extraction of natural resources. Industrial production and mass consumption became overriding principles of Australian society, famously described as 'affluenza' by Clive Hamilton (2003) in his book *The Growth Fetish*. Extreme capitalism was order of the day: with increasing use of fossil fuels, car-culture, and multiplying spaces of consumption. Australia's interdependence with other Asia Pacific countries became crucial for its economy, and which made impediments to economic growth unthinkable<sup>27</sup>. A key initiative in this regard was the Garnaut Report of 1989, formally entitled as Australia and the Northeast Ascendancy report insisted on 'complementarity' between the Australian economy and those of northeast Asia, was a polite way of saying that Australia's

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<sup>27</sup> It represented a move towards a new political rationality as it marked a shift in thinking about the way 'Australian economy' was integrated into trans-national economic system, the internal reforms needed to respond to and driven by international competitive forces (Beeson and Firth, 1998). The Garnaut Report and other reports from government advisory bodies like Industry Commission were responsible in entrenching a new understanding of how the economy worked, the constraints faced by policy maker and the benefits of using market forces to achieve particular social and economic end

economic security was fundamentally depended on developments elsewhere' (Hindess, 1998:222)

During 1980s and 1990's government in Australia introduced various domestic reforms to revamp key institutional structures and reform public policy to accommodate the belief that economic security depended upon securing a share of the prosperity generated by international economic restructuring. The introduction of ALP-ACTU Accord as industry policy was an important landmark which restricted real growth in wages, contributing to investment in new technologies thereby accelerating the pace of economic growth and corporate profitability (Rosewarne, 2005). In order to ensure the reach and pace of these reforms, the federal government consolidated an agreement with State governments in 1995 on the formulation of National Competition Policy. The State governments were asked to engage in efforts to form a national electricity market in electricity, and reform gas, water and transport systems including rail and road networks.

The transformation of the Australian economy and society from a self-contained, protectionist economic national system to the idea that Australia was inescapably a part of an emergent international economic order, can be marked as the emergence of bio-political governmentality, as a specific form of the exercise of power i.e. government which was based on the emergence of 'political economy of truth' and took as its object 'the population'. In a historic speech by Prime Minister Bob Hawke (1991:1) he stated

*The first is for us all to realize that this tough increasingly competitive world of five and a half billion people does not owe, and will not give, seventeen million Australians an easy prosperity. The days of our being able to hitch a free ride in a world clamouring, and prepared to pay high prices, for our rural and mineral products are behind us.... we must face the fact unflinchingly that we need to equip ourselves, further to meet the challenges of exposure to international competition.*

Foucault argues (1980:113) 'truth isn't outside power', it is produced by

'multiple levels of constraint' and 'induces regular effects of power'. Truth in a given society is treated as an artefact, created within the power structures of society. The pervasive dominance of economic discourse or as Pusey (1980) termed 'economic rationalism', functioned as regime of truth<sup>28</sup>. During this period the Hawke government mobilized particular discourses, assumptions, codes and procedures to enforce specific understanding of economy and society. The government utilized the widespread and growing discourse of external constraints and limited choices posited by liberalized world order, if countries were to generate economic growth (Conley, 2004). The Garnaut report (1989) commissioned by the government 'Australia and the Northeast Ascendancy' represented a move towards a new 'political rationality'<sup>29</sup> as it marked a shift in thinking about the way 'Australian economy' was integrated into the trans-national economic system, and the internal reforms needed to respond to and driven by international competitive forces (Beeson and Firth, 1998).

In liberal democracy the authority and legitimacy of the government is derived from its ability to govern the economy and the society (Conley, 2004). The normalization of the governing process is based on the expectations of population have of the government who are held responsible for economic developments and outcomes; 'a good government is therefore an economic government' (Foucault, 1991). The exploitation of nature becomes enmeshed with the transformation of economy and society, depleting natural resources, increasing pollution with dangerous chemicals. The development of capitalism through the neoliberal

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<sup>28</sup> Foucault (1980: 131) acknowledged 'Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanism and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the statuses of those who are charged with saying what counts as true.

<sup>29</sup> The concept of political rationality was developed by Foucault in close connection to 'governmentality'. According to him political rationality is governmentality rationality and neoliberalism forms the rationality of contemporary capitalism. Foucault further argued neoliberalism is a set of discourses, practices and apparatuses that determine new mode of government of human beings according to the universal principle of competition (Foucault, *The Birth of Bio-politics*, 2008)

economic order of market forces, economic growth, international competition, economic efficiency, accelerated wide use of fossil fuel across multiple commodity production processes, electricity generation, transportation and a range of manufacturing processes such as cement, steel and aluminium products. The combustion of coal, oil, gas increases the productivity, including the scale of production, providing spatial and temporal flexibility to the location and timing of production, and improving the speed and scope of transportation system (Altvater, 2006). Capital appropriates carbon through increasing productivity and combustion of fossil fuels to substantially increase the productivity of labour. As Urry puts it (2010:193) 'capitalism is not able to control the exceptional powers which it itself generated, especially through new forms of excessive consumption that are changing climate and eliminating some conditions of human life and its predictable environment'. Climate change exemplifies the production of nature by human beings on a world scale (Smith, 2008).

During the late 1970s the most dramatic announcement of perception of environmental crisis and skepticism towards economic growth came from The Limits to Growth report (Meadows et al, 1972) which attracted enormous publicity. However, its strong and blunt message was too at odds with the existing ideological context for it to be acceptable. The central argument of The Limits to Growth was a computer model of the 'world system' depicting the prospect of 'overshoot and collapse' if trends of exponential growth were not significantly curtailed (Meadows et al, 1972:66). The imagery of 'doom and gloom' portrayed was all too threatening to the ideology of industrialization.

In Australia the early perception of environmental crisis began with increased concentration of population in cities resulting from industrialization (Papadakis, 1993). The seeds of environmentalism in Australia were attributed to the emergence of patriotism, of the nation-state, of egalitarian politics and above all the romanticism of the 'dream of wilderness' (Papadakis, 1993:67). The initial organized campaigns for environmental protection were towards conservation and preservation of environment against developmental projects. The 'dangers posed by

global warming and rupture in the relationship between human and rest of the nature became major issues of contention between proponents of development and conservation' (Papakadis, 1993:72).

## **The Hawke Government and Farce of Environmentalism**

Whilst it's true that the involvement of Australian Commonwealth as an actor in environmental matters started long before, the political prominence of the force of environmentalism became profound with the election of Australian Labor Party in 1983, described as a 'greening of Australian politics' (Bean, McAllister and Studler, 1993). The party under the leadership of Bob Hawke won the support of labour movement and business community by establishing an 'Accord'<sup>30</sup>, and it was the dominant theme of 'Accordism' (Economou, 1993) which shaped the government's approach to environmental policy. The labor party's campaign promise was against building a dam on the Franklin River and this acted as a ticket to win the election. The promise of saving of Franklin River was a political tactic as it helped the Labor government to establish its credentials as a supporter of environmental concerns.

The Labor government successfully forged an alliance with the environmentalists and sparked off the momentum of environmentalism as a political force in Australia. As a result, there was strong enthusiasm and development around environmental issues and the establishment of various organized and enduring pro-wilderness and environmental groups. The political visibility and importance of environment as a policy issue was infact a result of resistance and struggle against the capitalist circuits of exploitation and in turn the

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<sup>30</sup> The Accord was established in 1982 as an agreement between ACTU and the federal ALP parliamentary leadership in which organized labour movement agreed to restrain wage demand for a more proactive role in national labour government and also as a response to prevailing economic environment.

recognition of political and institutional actors of the issue of environment within politics. The inception of environment as an object of concern was deliberate on the part of Hawke government as it wanted to secure the electoral support. There was an emergence of a bio- political regime where population became a target of political power managed in a top down manner. The problematization of environment was closely connected to objects of new public interests, targets of social institutions, discursive practices and technologies of power of the government. As Leonardi rightly states (2012:55), 'without the peculiar intertwining of life and politics which defines bio-political horizon, the emergence of the environment as an object of public and scientific concern would be unthinkable'.

Arguably the most significant milestone of the Hawke labour government (1983-1991) was the inception of the 'Accord' as a key technique of political consensus in the areas of industrial relations and the economic sphere. The Hawke labour government realized that the tactic of 'Accord' was significant in gaining tacit consent of labour unions to the pro-industry policies of the government and further found it useful for policy discussion and interest group dialogue and negotiations in climate change governance (Economou, 1993).

Historically the leaders of environmental movements in Australia had long experienced the exclusion from the decision making process of government. So when the Hawke government initiated a process of forging alliances with environmental organizations, the leaders of such organizations saw this as a route to power through the involvement with the government mostly through negotiations and compromise (Beder, 2000). The environmental organizations were able to appeal to a broader audience as they were politically effective to influence government political agendas. The political influence of environmental organizations was furthered as a result of federal funding to these organizations. Evidence suggests that there was a steady rise in grants to environmental organizations such as Australian Conservation Foundation (ACF), following election win of Hawke government (Papadakis, 1993).

The environmental organizations used the Labor party as major political medium to progress their claims and in exchange endorsed the ALP during 1983, 1987 and 1990 federal elections; an arrangement that underpinned the Labor government's environmental relations for the next thirteen years. The government in turn co-opted various environmental leaders in their ministerial staff and incorporated environmental interest groups in the policy making process (Economou, 2000). As other political groupings around this time such as the conservative coalition Liberal Party and National Party of Australia were outwardly pro-business, anti-environment, the Labor party used this alliance<sup>31</sup> with environmentalists as a political maneuver to win the support of 'green' vote and continued promoting environmental concerns with necessary caution and pragmatism. Environment became a political problem and took place in the political mainstream not as a product of the environmental movement but as a result of political actors creating room for environment within institutional politics.

Throughout the period of 1983 to 1990 there were several environmental disputes which emerged as federal state conflicts, to which the federal government responded on a short term reactive basis. The labour government in order to protect the Franklin River and Daintree River overrode the authority of the states in Queensland and Tasmania. The government's decision to advance environmental concerns went against the constitutional authority of states and the political force of environmentalism was thus equated with state federalism.

However, the government soon realized that responding to environmental demands meant undermining objectives in other policy areas such as unemployment, economic growth and the balance of payments. The approach of the

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<sup>31</sup> The political dimensions of hegemony can be understood first as a political practice 'that captures the making or breaking of political coalitions' (Howarth, 2009:318) and second and 'as a way of conceptualising different forms of rule and its maintenance' (Howarth, 2009: 319). The disparate groups can converge/coalesce around a central idea and a coalition of groups and individuals comes into existence united by a common discourse. This discourse then becomes dominating as it excludes competing discourse and thereby become driving force of social change

government based on generating consensus, stability and order, posed a significant challenge. The government was faced with a real task of resolving the conflict between the strict value system of pro-development and pro-environmental interest groups. Within the bureaucracy, there was interdepartmental rivalry between ministers who catered to development clientele versus an environmental clientele.

A noticeable feature shaping environment as a national debate during 1990s was the way policy actors government, unions, environmental organizations, developers became increasingly occupied with decision-making procedures with achieving a balance between environmentalists and developers on the question of ecological sustainability of growth and development (Economou, 1993). These shifts had importance consequences as they provided enough grounds for government to exert control and leadership over environmental matters. The interventionist powers of Hawke government over environmental matters is particularly interesting at a time when the neoliberal notion of state minimalism shaping the overall policy approach<sup>32</sup>.

## **How Climate Change Substituted Environment**

Climate change as a policy problem emerged under the gamut of environmental policy making and coincided with the Federal government's attempt to forge a national environmental strategy, guided by the principles of Ecologically Sustainable Development (ESD)

The advancement of environmental concerns by the Labor government further drew the Australian Commonwealth into international debates on climate

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<sup>32</sup> Scholars such as Peck and Tickell (2002) in their specific analysis of neoliberalism which they defined as 'neoliberalization' argues 'actually existing neoliberalism' is not limited to destructive moment of its 'roll-back' (i.e. de-regulation) but must be analysed from the perspective of 'roll out', namely its constructive practices (i.e re-regulation).



change. During the 1980s campaigns around greenhouse gas emissions became the focus of numerous environmental organizations, such as Greenpeace and Australian Conservation Foundation (ACF). Their role was significant in generating awareness through campaigns which helped disseminate academic research amongst several federal government industry institutes including the Commonwealth Scientific Research and Industrial Organization (CSIRO). Scientific interest on the issue of climate change dates back to the 1970s during which the CSIRO had undertaken various studies on carbon dioxide concentration in the atmosphere. The climate change issue was initially conceived as a greenhouse pollution problem as it could be scientifically measured and calculated<sup>33</sup>. At the international level the scientific concern and various investigations into the effects of greenhouse gas were conducted prior to 1970s. However, it was only in 1985 at the Villach Conference there was a centralization of all the scientific knowledge and information under the auspices of World Meteorological Organization, International Council of Scientific Unions and the United Nations Environment Programme. After the Villach conference in 1985 the 'greenhouse' issue moved from the scientific backburner to the political limelight as the issue of 'climate change' through its articulation of the potential severity of the issue and the need for political action to address it (Bulkeley, 2000b)

In Australia the CSIRO played a crucial role in generating awareness, engaging the scientific community in assessing the likely impacts of global warming and was instrumental in translating the outcomes of Villach into policy development in Australia. The CSIRO together with the Commission for the Future (CFF) established by Federal government helped stimulate debates on the issue of greenhouse pollution from the political parties and wider public audience which were largely focused on technical and scientific developments (Bulkeley, 2000b). In

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<sup>33</sup> Sheila Jasnoff (1990) argues that 'regulatory science' which refers to widespread reliance by the state on extensive systems of scientific advisory structures has become integral in policy making such as environment in industrialized countries. The scientific advisory not only provide political legitimacy to the issue but it also acts as an epistemic policing both by framing the definition of environmental problem and certification of what counts as a scientifically acceptable knowledge.

1981 the federal government's Office of National Assessment presented a confidential report to the government on 'Fossil Fuel and the Greenhouse Effect' which predicted that by end of the century, greenhouse gases will culminate in pressures to restrict the use of fossil fuel and adversely affect coal exports, and that an anti- coal lobby could emerge as result of increasing awareness amongst the public about rising sea-levels (Baer & Burgmann, 2012). This research report was significant as the government became cautious and pragmatic of seriousness of the issue.

## **Problematization of Climate Change**

The push towards developing a policy approach towards greenhouse gas emissions in Australia was triggered by international momentum surrounding the global warming and concerns established by the scientific community domestically. In 1980 and 1983 the CSIRO organized two 'Greenhouse' information events (popularly known as Greenhouse'87: Planning For Climate Change) which was an attempt to create a national public forum on the issue of climate change, assess impacts and attract political and public attention. Satellites linked State capitals for initiating discussions, and there was an estimate that eight thousand people who participated in this forum. The Federal government committed to 'greenhouse science', and established National Greenhouse Advisory Council in 1989 which comprised of climate experts, and funded several studies on climate modelling and impact work. Scientific expertise became predominant in defining climate crisis issue. The political backing of research and environmental organizations provided an immense impetus in placing Australia as an exemplar globally, taking positive actions and in receiving applause from UN. The government used this opportunity to its diplomatic advantage and projected the image of Australia as a global leader, endorsing various international calls to reduce greenhouse gas emissions. The CSIRO and CFF won a Global 500' award from the UN for their efforts on climate change issues (Bulkeley, 2000b). The end result was that Australia became an active participant in the Intergovernmental Panel on Climate Change established in 1988.

The release of first report of IPCC exerted pressure on the government to develop national greenhouse management policies and set emission targets. At the same time the Australian Mineral and Energy Council published a report detailing the energy dimensions of the greenhouse issue. In response to these two events, on 11th of October 1990, the Federal government adopted the 'Interim Planning Target' in which the government set out an ambitious plan to cut emissions by 20 percent by the year 2005. However, the federal government realized that any call to halt environmental degradation will impose restrictions on fossil fuel industry and a caveat was issued in attempting to reach this target stating, 'there should be no adverse effect on the Australian economy and upon trade competitiveness, in particular in absence of similar action by other countries' (Hamilton, 2001:33, Bulkeley, 2001a, McDonald, 2005).

## **The Genealogy of Sustainable Development**

The notion of 'sustainable development' appeared in *Limits to Growth* and *A blueprint for Survival* which were both published in 1972<sup>34</sup>. The *Limits to Growth* sought an alternative path to exponential growth described as 'overshoot and collapse' (Meadows et al, 1972:66) as one which is a 'condition for economic and ecological stability that is sustainable in the near future'. This concern was raised by John Stuart Mill (1965, c.f Torgerson,1995) who argued that 'stationary conditions of capital' can and ought to co-exist with continued human development. The distinction between growth and development highlighted by Meadows et al (1972) formed the crux of sustainable development. Growth was equated with the quantity of good and products sold in the market must be restricted, in order to enhance the life supporting capacity of ecosystems which will benefit society as a whole.

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<sup>34</sup> A blueprint for Survival (Meadows et.a, 1972:15) read' The principal defect of the industrial way of life with its ethos of expansion is that it is not sustainable. Its termination within the lifetime of someone born today is inevitable- unless it continues to be sustained for a while longer by an entrenched minority at the cost of imposing great suffering on the rest of mankind'

This changed during 1980s, when a ‘hegemonic perception emerged and became condensed in the broadly shared understanding of sustainable development’ (Brand, 2010:143). In order to deal with industry pollution crossing the immutable threshold represented by the physical limits of the planet, the idea of sustainable development was included in the World Conservation Strategy published by United Nations Environment Programme (UNEP) and World Wild Fund (WWF) in 1980s stating that ‘conservation and sustainable development are mutually dependent and not in opposition’ (Brand 2010:39). But it was the publication of Brundtland Report in 1987, that the concept of sustainable development became truly and globally hegemonic<sup>35</sup> as it explicitly focused on the entire planet as an object of the government and the notion of sustainable development as hegemonic governmental rationality. The report ‘Our Common Future’ (1987) provided a ‘canonical’ definition of sustainable development as it read:

*Humanity has the ability to make development sustainable –to ensure that it meets the needs of the present without compromising the ability of future generation to meet their own needs. The concept of sustainable development does not imply limits –not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities but technology and social organization can be both managed and improved to make way for a new era of economic growth.*

The protagonists of sustainable development argue the limits to growth is rather flexible as it envisions a commitment to sustainable development as a much more complex system where forces such as conservation and waste, ecological care and anti-environmental neglect, social change and the institution inertia works simultaneously. So instead of single collapse of environment, the sustainable development discourse emphasized ecological damage happens on an everyday basis at varying rates. The problems of sustainable development can be managed

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<sup>35</sup> The Brundtland Commission was established to discuss environment and development issues as the official acronym suggests World Commission on Environment and Development (WCED).

with government tactics and technologies in to-down manner.

## **Bio-politics of Ecologically Sustainable Development (ESD) in Australia**

In response to World Commission on Environment and Development (WCED), Prime Minister Bob Hawke released a Statement on the Environment in 1989 titled *Our Country Our Future* where he made a reference back to The Brundtland Report. During this time the tension between developers and environmentalists were palpable and the government realized that dealing with these conflicts on a piecemeal basis was ineffective. There was a requirement to adopt a less confrontational and a more broad-ranging consensus and integrative strategy (Economou, 1993). The federal government further recognized that any significant call to halt environmental degradation would impose restrictions on the fossil fuel industry and in turn affect the functional dependency and relationship of the government with the business. A policy on Ecologically Sustainable Development (ESD) was adopted as a 'win-win' solution to the environmental crisis, particularly to appease industry, use the language of business and conceptualize pollution as an inefficiency which can be resolved within the boundaries of cost-effectiveness and government administrative efficiency. The discourse on ESD imposed a problem construction and policy cohesion across the fragmented realm of environmental concerns (Dovers, 1999). The dominant pro-development paradigm and its corresponding emphasis on economic rationalism was recognized by the Hawke government to be weaved by an 'integration of environmental and social concerns into economic decision making' (Bob Hawke, Letter to Working Group Chairs, 29 August 1990). The ESD process provided a platform where divergent views about the environment and development were to be brought together in one same platform. The idea of formulation of common goals and agreed mechanisms for reaching them was an appropriate strategy to bring industry, environmental organizations and green movements together and also ensure coordination between different tiers of government.

In accordance to The Brundtland Report's emphasis on the impossibility of separating economic development issues from environmental issues (Brundtland, 1987:3) Prime Minister Bob Hawke in his statement on Environment Our Country Our Future stated in a similar tone

*The Australian Government recognises the fundamental link between economic growth and the environment. It recognises that environmental aspects are an integral part of economic decisions. It is committed to the principle of ecologically sustainable development (Hawke, 1989:4)*

The Commonwealth government in 1990 adopted the following definition for ESD in Australia as

*'Ecologically sustainable development provides a conceptual framework for integrating these economic and environmental objectives so that products, production process and services can be developed that are both internationally competitive and more environmentally compatible'...'Using, conserving and enhancing the community's resources so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future can be increased' (ESD, 1992:1)*

The notion of sustainable development was based on upon the idea that the 'value of life' in its entirety such as natural resources, ecosystems, biodiversity, posed an obstacle to economic objectives and so economic development had to reordered to ensure the sustainable use of all life. The focus was to shift development of human life to the non-human 'life support system' on which humans depend in order to live well and prosper. At the same time life was considered as a main obstacle to economic growth. The argument was economic growth would be necessary to achieve and maintain a 'total quality of life' meaning the nature of life its entirety, and to correlate economic profit and prosperity with increasing the profit and profitability of the life of biosphere. As Reid (2013: 365) puts it

*'...while sustainable development deploys ecological reason to argue for the need to secure the life of biosphere, neoliberalism prescribes economy as the very means of that security. Economic reason is conceived within neoliberalism as a servant of economic*

*reason, paradoxically claiming to secure life from economy through a promotion of the capacities of life for economy.'*

Following from Foucault the notion of sustainable development establishes a convergence between bio-politics and governmentality as it claims to secure life but at the same time it promotes the capacities of life, its utility and value subservient to economy. Foucault insisted that Western society, in the course of second half of the Eighteenth century has crossed a 'threshold of biological modernity' and has wagered the life of the species on its own political strategy' (Foucault, 1978:143 c.f Lemke, 2005) that as human beings begin to wager their life as species on the products of their bio-political strategies and technological systems, they began wagering the lives other species. The notion of sustainable development points to the idea of a force or exercise of power that regulates or government as a whole from inside or what Foucault (Gordon, 1991) termed as *oikonomia*.

As Death (2010:43) explicitly states that the ambition of sustainability development was revival of economic growth. The recommendation of ESD was the need to improve international trade, production of internationally competitive products, liberalize trade and so on.

The broad agreed principles of ESD policy in Australia were:

- The global dimension of environmental impacts of actions and policies should be recognized and considered.
- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognized.
- The need to maintain and enhance international competitiveness in environmentally sound manner should be recognized
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.

The ESD policy purported to reconcile two old enemies: economic growth and environmental preservation without any significant structural adjustments in

the market system. The reconciliation between economy and environment intend to create an impression that only minor corrections to the market system can lead to environmentally sustainable development. The notion of sustainability was associated with 'the re-emergence of market economics and neoliberal policies to transform environmental choices into market preferences following neoliberal orthodoxy' (Redclift, 2005:218, cf Pellizoni, 2012:7)The underlying assumption of ESD policy was that an appropriate level of environmental protection can substantially be achieved through valuation and pricing of pollution, provided that markets were adjusted to give value to environmental and other externalities.

*Many of our environmental problems arise because market prices do not reflect the full costs of various human activities. Changes to prices can have power immediate effects on how people use resources. ...This can be done by economic means –the so called 'polluter pays' principle (Hawke, 1989:6)*

The abstract optimism and defense for market based measures were based on the assumption that an optimal pollution reduction can take place at least cost, as it will allow individual polluters to make adjustments to production to the point where the marginal cost of pollution reduction is equivalent to the marginal costs of damage caused by pollution. According to environmental welfare economics this can be achieved either by internalizing negative externalities in the production process (Pigou 1932 or Environmental Welfare Economics) or by assigning property rights to environmental assets (Coase, 1960 or Free Market Environmentalism).

Market based instruments<sup>36</sup> were considered as the most 'efficient' means of achieving desired outcome in Australia provided that there was a global harmonization of market adjustments (Kinrade, 1995). Environmental protection was translated as a cost in the calculation of comparative competitive advantages in international trade. Government intervention in the form of regulations was

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<sup>36</sup> Steven Bernstein (2000) describes this as 'liberal environmentalism' which became dominant way of thinking

and acting i.e a strong market orientation of public environmental policies



considered necessary to the effective functioning of market based policies as it was stated

*Governments will continue actions to remove barriers to the effective operation of markets...to pursue international agreement on the incorporation of full environmental costs associated with production and use; and to maximise the ESD benefits of trade liberalisation (ESD, 1992:80-81).*

Ecological Sustainable Development was based on Ecological Modernization (EM) paradigm with strong adherence to technological innovations and devout optimism that the market can work to preserve the national environment through the use of correct price mechanism for both production inputs and outputs (Hajer, 1995) Ecological modernization(EM)<sup>37</sup> recognizes the environmental 'problematique' but at the same time emphasizes that that existing political, economic and social institutions can internalize this care of the environment through techno-institutional fix to merely rectify the problem (Hajer, 1995:25). The notion of techne (technique) is regarded as the cause and effect, problem and solution: at most it is a question of technological innovation with appropriate ecological management, 'simultaneously developing new natures, thanks to techno-scientific advancement' (Pellizzoni, 2012:8). The principles of EM consider environmental degradation as a crucial design fault of modernity which can be rectified through the technization of ecology (Mumford, 1934), instituting appropriate economic tools and techniques to enhance the applicability of markets to environmental issues.

Ecological Modernization theory argue technology can work magic in such a way that economic expansion can take place without any cost to the environment, and so open-ended economic growth can simultaneously go together with environmental sustainability. This is achieved by re-embedding the open economic

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<sup>37</sup> Hajer (1995:31) defines 'Ecological Modernisation use the language of business and conceptualises environmental pollution as a matter of inefficiency while operating within the bounds of cost-effectiveness and bureaucratic efficiency'

sphere of modernity within ecological limits or closed system (Mol, 1996) and make environmental degradation calculable, through valuation, pricing and incentive mechanisms of eco-system services. Ecological crisis is thus presented as a technical problem that can be corrected within the existing system through better ingenuity, technological innovation and magic of the market.

The integration of economic growth and environmental protection as a simultaneous process was what Albert Weale (1992 c.f Eckersley, 1995:9) dubbed as 'new politics of pollution'. According to Weale, this new approach of 'ecological modernization' focussed on the limitations of 'end of the pipe' solutions to pollution and instead emphasized the longer term economic, social and ecological costs of failing to act as much as the immediate economic costs of taking action (Cost-Benefit Analysis). The mainstream environmental economics answer as to how much environment should be protected is based on a cost benefit analysis in that benefits derived from environment are calculated in monetary terms and then compared over time with the monetary costs of protection. The inclusion of cost benefit analysis in ESD shifted policy from a 'react and cure' approach to an 'anticipate and prevent'<sup>38</sup> approach, by integrating environmental policy into trade, energy and agricultural policy (ESD, 1992:80- 81)

In its true sense ecological sustainability states that there exists a biophysical limit to economic activity. The absurd notion of the endless pursuit of economic growth that can exponentially expand without environmental degradation denies the laws of entropy and thermodynamics of physics. As ecological economist Nicholas Georgescu Roegen puts it (1971:9, c.f, Foster et al 2011:43) 'had economics recognized the entropic nature of the economic process, it might have been able to warn its co-workers for the betterment of mankind, the technological sciences that bigger and better washing machines, automobiles and super-jets must lead to bigger

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<sup>38</sup> Jacob (1995:52) raise question as to 'how can one anticipate; for example, economists working on energy taxes assume a carbon dioxide emissions target, taking whatever has been proposed by international conferences or climatology experts'

and better pollution’.

As an economic objective, the notion of sustainability requires ‘natural capital stock’ that is the amount or level of environmental assets and services should be maintained over time for future generations. Judged by these parameters the market based approach to achieving sustainability is completely flawed. As markets tend to discount the future, as procedure by self-interested individuals, acting in complete ignorance of others interests. Sustainability on the other hand does not discount the future generations. The approach of achieving optimal pollution is flawed as it rests on the notion that all environmental values can be priced, yet environmental value for future generations, cannot be valued as it cannot be known (Kinrade,1995; Jacobs, 1995)

## **Putting ESD process into practice**

The process and procedures of ESD in Australia can be characterized as an active and interventionist approach, as it brought the whole of society and environment under strict government management and supervision. The initiative of the Labor government was to model the ESD process by building on its corporatist approach to governance inscribed through the ALP-ACTU ‘Accord’, and utilized by the government to address Australia’s poor record of greenhouse gas emissions.

The ESD process was characterized by neo-corporatism (Downes, 1996) as a result of government’s preference for monopolistic group representation. The Hawke government played a central supervisory role in selecting key interest groups. The setting up of ESD process was initially based on two alternative models -an industry based approach where a series of separate committees were to be based on industries or sectors where ESD was considered to be important, -and a model based on specific issues related to ESD such as population issues, urban issues, gender issues, equity issues and so on. After careful consideration the government decided on an industry based-approach, with nine working groups

from nine industries or sectors where ESD was considered to be most important. The nine groups were Agriculture, Fisheries, Forestry, Mining, Manufacturing, Energy Production, Energy Use, Transport and Tourism (Harris & Throsby, 1997). Instead of establishing working groups based on issues relating to ESD, priority was granted to resources and industries. The industry approach was based on the consideration that potential participants would be identified based on their specific industry- related expertise and they would be able to focus their expertise specifically on the problems of the industry they knew best. As greenhouse gas emissions was a critical concern in each sector, the working groups were asked to address ways of containing emissions and inter-sectoral groups were allocated to the task of developing a cost-effective National Greenhouse Response Strategy. An industry based approach was agreed because policy recommendations would have more possibility of being implemented if it was industry based (Harris & Throsby, 1997). But the decision to prioritize sectoral framework in the ESD process inhibited analysis of linkages between natural and economic systems, upon which production and consumption are based and major environmental problems arise (Dovers et al, 1996)

The ESD process was considered an ambitious project as it sought to involve members in nine industry working groups from the scientific community, industry groups, environmental organizations, trade unions, community groups and state officials in the development of policy. A bottoms up approach of looking at specific issues arising within each working group was adopted to make the Brundtland recommendations operational in Australia (Hamilton & Throsby, 1997).

The ESD process in practice 'a struggle for discursive hegemony in which actors try to secure support for their definitions of reality' (Hajer, 1995:59). It involved several interest groups with different political agendas. Each interest group represented a constituency whom they had to report to, and to carry with them as the debate progressed. In this discursive struggle, credibility, acceptability and the trust were obtained through significant storyline and actors (Hajer, 1995). 'Policies are performative processes attempting to organize and to fix the meanings

of the political events and developments, of (new) policy fields, and of how specific boundaries and storylines are established' (Hajer, 1995). The discourse on sustainable development in Australia became an overriding 'story-line' which made it possible to create first a discourse coalition of members from different social and cognitive commitments in environmental politics. According to David & Throsby (1997:8) 'one of the remarkable outcomes of the ESD process as it unfolded was the extent to which Working Group members could find common ground'. The grand narrative adopted was that of placing environmental crisis on a new plane-on that of development. As Barns (1992:201) rightly notes with regard to hegemonic discourse of ESD in Australia, 'despite the considerable differences in strategic interests between the major participants and conflict over specific issues, there is surprising level of consensus about the primacy of market liberalism and the need to incorporate environmental values into the framework of market economics'.

*Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ESD, 1992:8)*

Against the discourse on environmental limits which was perceived as negative, development was as potentially positive and beneficial As Death (2010:39) noted in relation to Brundtland report 'it combines the optimism of development with the pessimism of environmentalism'. The discourse on sustainable development is part of a broader process of problematizing of 'global survival' which established an antagonism of society vs nature where the progress of capitalist development is threatened by a nature out of control (and not nature threatened by capitalism). In the ESD process in Australia there was a clear sense of a common ownership and recognition that the concept of ESD would provide a basis for integrating ecological and economic values, so that agreement on common goals and on ways of achieving the would become more feasible<sup>39</sup>.

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<sup>39</sup> The power of the government in achieving consensus from ESD Working Group is apparent in the Prime Ministers initial letter to the chairs of 1990 in which he said 'Obviously it is desirable to seek consensus in the recommendations you will be putting to the

During 1990s the government asked the ESD Working Groups to form a Greenhouse Working Group to formulate cost-effective options to meet the Interim Planning Target, resulting in two greenhouse gas management policies, the National Greenhouse Response Strategy (NGRS) core component of Labour's Ecologically Sustainable Development Program<sup>40</sup> and Landcare, focused on sustainable farm practices.

In the context of Australia, there was a clear shift in the national environment debate from conservation of nature to resource managerialism. The Land-Care programme adopted in 1989 emphasized the involvement of the community in policy making. The Land-Care was also seen as a deliberate move on the part of government, to defuse conflicts between developers and environmentalists; it was a way of 'discourse structuration' (Hajer, 1995) whereby agents and storylines are brought together to form a discourse coalition in order to ensure coherence and credibility. It also projected a more positive image for Hawke government in rural constituencies. The discursive hegemony was achieved through 'discourse institutionalization' by drawing on resources such as knowledge, ensuring legitimacy by public support for action and power and most importantly demonstrating material benefits through sustainable development. The ESD process established by the Federal government was to forge a connection between institutional and non-institutional action as it not only represented the influence of environmentalism in terms of funding environmental organizations but also the creation of institutional mechanisms such as Greenhouse Working Groups.

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Government on behalf of your working groups. There may be matters on which this does not prove possible and alternative views may need to be put. I would hope that such cases could be kept to a minimum. Australia had suffered too much already from excessive polarisation of views'

<sup>40</sup> In 1989 Graham Richardson (Senator of NSW of ALP) presided over the creation of Our Country Our Future: A Statement on the Environment which was Hawke government's major environmental policy statement

The nine industry working groups were assigned to three independent chairs with responsibility of three groups each. In order to ensure that the ESD working groups were able to perform effectively and in coordination with each other, the government established institution such as a fully staffed Central Secretariat located in Canberra and through the appointment of full time Executive Officers for close monitoring and supervision. It was seen essential by the government that the three independent Chairs had direct access to both the bureaucratic and the political wing of Federal government and to State and Territory governments through relevant Ministerial Council. The chairs of the working groups reported to sustainable sub-committee chaired by the Prime Minister himself.

As a result of the industry push for resource security, and demands that the governments needed to guarantee permanent access to logging in wood production zones (Marsh, 1993), Resource Security Legislation was passed by Bob Hawke. From the beginning a primary concern of the government was the 'resource challenge' requiring drastic action on energy security. The close relation of effective mitigation of climate change with that of 'energy security' provided a stimulus for government to play a lead role in climate change policies.

The government further proposed establishment of Resource Assessment Committee (RAC) in 1989, as a body that could filter and engage in rational decision making with regards to competing resource, land-use demands ahead of the Cabinet decision-making. The industry demands for resource security legislation stood in contradiction to the validity of ESD process, as the government succumbed to the demands of industry associations and passed the Resource Security Legislation with a proposal for a project by project guarantee of volume rather than industry demands of access to particular logging areas. The government's decision on Resource Security Legislation (RSL) and the Resource Assessment Committee (RAC) was create to 'consensus model 'between environmental and industry groups.

It was apparent that the procedures and mechanics of consensual decision making were prioritized as the basis for government approach to environmental

matters, with the creation of Resource Assessment Committee (RAC) which was (Article 8, RAC, c.f Economou, 1992:467 ) was to identify the extent and potential uses (including cultural, social, environmental, scientific as well as economic utility of the resource under investigation) to assess the losses and benefits of these resources and to attempt to bring to its deliberations and integration of ecologically sustainable development (ESD) concept'.

The cost-benefit analysis of environment was undertaken by the RAC adopting the methodology of contingent valuation (CV) in order to assess and evaluate community perceptions of environment in terms of an economic commodity (James, 1991). The economic evaluation of the environment was based on the perception of the environment as a 'free gift' as one RAC discussion paper puts it (James, 1991:3)

*Misconstrued as 'free'- free supplies of air, free forests, free soil and free plants, animals and fish supplied. Such free gifts of nature cost nothing to produce and hence have not been adequately represented in the pricing system..the outcome has been profligate use natural resources and their consequent degradation.*

The ascendancy of the orthodox economics of cost-benefit analysis was utilized to reconcile economic and environmental values. The methodology of contingent valuation was to provide an estimation of monetary value of preserving wilderness or saving species from extinction; unless and until such valuations are determined by an orthodox economic analysis, the environmental issues could not become institutionalized policy making process. Through the contingent valuation process nature is forced to turn into an environment full of exploitable 'nature resources' for the maintenance of capital.

The two institutional structures of RAC and RSL were based on two different 'story lines' (Hajer, 1995) and mobilized two different discourse coalitions. Through the establishment Resource Assessment Commission (RAC) the government continued to mediate the interests of various stakeholders and defuse conflicts among interest groups. As Economou (1996:12) notes 'the RAC was created to



reconcile the irreconcilable’.

Environmental organizations were appreciative of belonging to a policy community like RAC rather than being an outsider. The establishment of the RAC was considered by some, an early expression of sustainability as it integrated ecological and economic dimensions. But it was short lived; as it and was dismantled in 1993 by the federal government with the departure of Bob Hawke. The dismantling of RAC was intentional on the part of Keating government as he did not share a the consensus approach of Bob Hawke.

## **Producing Sustainable Subjects**

The ESD process empowered and produced new political actors and subjects as the corporatist initiatives of the Labor government required environmental organizations and communities to engage with bureaucratic discussion groups and forums along with industry groups and trade unions both in the Resource Assessment Committee (RAC) and ESD discussion process. As Bob Hawke (1989:33) stated:

*To ensure continued Australian capacity in greenhouse matters, the Government has allocated \$7.8 million for a two year program of high priority initiatives, to complement existing work and to enable the development of a multi-faceted national strategy in consultation with State, Territory and local governments, industry and the corporate sector, community and conservation groups*

A mechanism of community consultation was established during the process of ESD, with a number of public forums held around the country. However, at the end of the process there was an overriding agreement, that community consultation process was inadequate as the government demanded ‘consensus’ based recommendations. The working group members allowed ‘consensus’ recommendations to go forward as they acknowledged that policy prescriptions would be taken more seriously if they had support of the entire group (Hamilton & Throsby, 1997). The National Greenhouse Response Strategy was one outcome of

these policy deliberations.

So far as environmental organizations were concerned, the government provided financial assistance to these organizations to engage and participate in the ESD process as a way to ensure their support. The Australian Conservation Foundation (ACF) and Greenpeace participated in both RAC and ESD working groups whilst The Wilderness Society engaged in direct activism because of its normative commitment to socio- structural change in order to combat environmental problems.

The ESD discourse as an integration of economic and environmental objectives, was used as a focal point to draw other actors into the decision making process in particular the NGOs, carefully steered and monitored by the government. In a document prepared by major environmental organizations edited by Bill Hare of the ACF in 1991 and it was argued that the government took an evolutionary view, accepting the need to change existing, political, social and economic system from within rather than seeking fundamental systemic or structural change.

The industry representatives were more or less unanimous in their support for the process of ESD and were better organized in influencing the policy direction. The ESD process provided an opportunity to the industry and business groups to become aware of the impediments of environmental action to the accumulation of capital. This led industry representatives to become more proactive to monitor the process closely and keep abreast of the issues and defend industry positions against insufficient acknowledgment of the progress made by industry in tackling environmental issues. Reflecting this The Australian Coal Association, The Australian Aluminium Council, The Australian Mining Industry Council and Business Council of Australia established Australian Industry Greenhouse Network to lobby their interests.

The bureaucracy comprising federal and state public servants were involved in the working groups primarily to ensure that the process worked without any

conflicts. Bureaucratic resistance and resistance from within the state in accommodating the participation of various stakeholders were notable (Harris & Throsby 1997). The bureaucratic personnel objected to most of the recommendations made by other stakeholders and asserted their administrative authority over consensus policy formulation (Rosewarne, 2003).

The inclusion of non- governmental organizations was restricted to consultative forums to pursue an ideological consensus on the notion of ecologically sustainable development, but they were intentionally excluded from the final ESD policy formulation process. The inclusion of environmental organizations in the consultative forum was a strategy used by the government to silence opposition to public policy in accordance with technocratic criteria. Moreover, the working groups faced difficulties in reconciling views on the economy and with environmental objectives, while the state bureaucrats on the working groups were more interested in mediating the resolution of the debate. The public servants were disproportionately represented in all the working groups and majority of the state bureaucrats were leading economists which resulted in natural inclination to forge alliances with industry groups, energy intensive industries and mining (Hare, 1991). The intent of the industry commission was to undermine the influence of ministers for environment who were sympathetic to environmental lobby and the bureaucratic agencies concerned with economic development might have more say in the environmental policy (Papadakis, 1993).

The Resource Assessment Commission (RAC) process reflected the normative structural features of 'Accordism' which Beilharz & Murphy (1992:175) described as 'metaphor for a style of bargaining and policy making'. The strategy of Accordism was adopted by the government to ensure participating organizations such as environment organizations, industry and government were bound to the outcome of the environmental strategy treating their participation as evidence of consent. According to Economou, (1996:18) '.... the emergence of RAC were the structural manifestations of the Hawke government's interest in improving the intellectual content of decision making as well as diverting inter-interest group

conflict out of the public realm and into more manageable bureaucratic channel’.

Not only had the RAC provided a negotiating table, it acted as a major role for collection, aggregation and classification of information. Such aggregation and classification was considered essential in order to arrive at decisions on complex issues through a rational, neutral manner. The justification of establishment of RAC in the first place was based on the principles of neutral scientific and economic considerations and was in fact proposed by economic ‘hardhead’ John Kerin, the then primary industries minister (Economou, 1993)

In an inquiry into forest industry and mining in disputed areas within Kakadu conservation zone, RAC adopted a mediation process and inclusion of community inputs through public hearings. The RAC utilized a contingent valuation (CV) model in order to measure worth of disputed land areas as quantifiable commodities (James 1991). Several face to face interviews and surveys were conducted in the communities to determine willingness to pay by the population in forest conservation or to forego mining opportunities in Coronation Hill region.

In the CV survey process participants ‘were present with an opportunity to express their willingness to pay for (or willingness to accept compensation) for a change in the level of environmental amenity benefits’ (Wilkes, 1990:8)<sup>41</sup>. From answering questions about willingness to pay the communities were forced to enter

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<sup>41</sup> The CV process had four stages. Respondents were give a full description of amenity under review. In the Kakadu Conservation Zone survey respondents were given extensive written descriptions and colour photographs of the specific area in question. Respondents were then surveyed to elicit their response to the monetary value they would be prepared to pay for the preservation of this area. The ‘referendum model’ was used where respondents were presented with a number of options with an invite to answer ‘yes’ or ‘no’. The respondents were asked if they were willing to pay \$20, \$50 or \$5 per year to reserve the Conservation area. The survey then seeks to isolate the attitudes and biases of the respondents. Finally, it aims to ground the values cited by respondents within some understanding of the respondents’ microeconomic situation. The CV process results in far more rational decision making by presenting environmental inputs in a way that makes contributing to the process of accumulating as much useful comparative data on competing land-use demands as possible and by assisting in the process of informing and soliciting general public opinion (Wilkes, 1990:35-6 c.f Economou, 1992)

a bid for infinite compensation. The CV method is thus a way of disciplining communities, questions are designed to format and frame individual preferences and responses, their responsibility as citizens, into calculable consumer preferences (Lohmann, 2009). The CV model adopted by RAC was criticized as 'obtaining hypothetical answers to hypothetical questions' (Economou, 1992). The use of a 'referendum model' restricting the choice of options for convenience of valuation and calculation is therefore non iterative as described by Michael Power 'loss of social thinking' (Power, 1988, c.f Lohmann, 2009:519)

The RAC conducted a large public opinion survey on Australia's forest resources to gauge public attitudes to forest conservation running to over 700 pages of draft report (Economou, 1992). Through the collection and collation of quantitative data on competing land use demands, multilateral dialogues were initiated between interest groups to reach a consensus between parties. The collection of large centralized data and calculation becomes important make the environment legible and governable by state agencies. Lohmann (2009:519) describes this as 'commensuration as a system of discarding information and organizing what remains into new forms' as it was agreed that industries were crucial for nation's economic prosperity and welfare. Following the publication of the draft report of RAC, an editorial of Sydney Morning Herald reported.

*Of course, most voters are not emotionally committed to either side of the forest debate....They want sensible hard-headed decisions based on rigorous analysis of facts. That's the important contribution of the RAC: the injection of honest, dispassionate analysis into an emotional and often dishonest debate (Sydney Morning Herald (SMH), 8 August, 1991, c.f Economou, 1993: 408)*

Although the support for environmental issues was a long-standing principle of the Labour party, it was the excessive sympathy for conservation agenda which divided the Party's Right and Centre-Left factions (Economou, 2002). The pro-development ministers of the Labor party Cabinet were unhappy with specific conservation and land issues and the economic costs it incurred. Consequently, there emerged a push in order to transform Labor's management of environmental debate away from specific issues to address decision-making procedures instead

(Sunday Age, 17 June, 1990). Such a move by pro-development ministers was in order to combat what they perceived as the excessive 'green' influence on Hawke government.

## **Conclusion:**

The ESD policy programme constituted a joint process of scientization, economization and above all technocratization of climate change, as an object of concern, extending Foucault's idea of bio-politics where environment crystallizes government, population and political economy. The reconciliation between environmental preservation and economic growth was achieved through the discursive operations and representations of nature, management and science, as nature was mapped, quantified and rationalized in order to promote and sustain economic growth. The ESD policy programme can be re-read as a specific governmentality based on power-knowledge formations, as Timothy Luke (1999:122) characterized 'green governmentality as form of power of the administrative state, in the name of responsible stewardship of nature namely to legitimize governmental interventions', entailing an all-encompassing administration of life- including population, individual and natural environment. Luke (1995) conceptualized green governmentality 'as an integrated system of geo-power, eco-knowledge and enviro-discipline', where the state continually has to measure, categorize, calculate represent and subjugate nature to capital's production. Such practices are described as geo-power (Luke, 1995) that is statecraft and technologies of power which make territory and environment accessible, knowledgeable and useable. The geo-power of the state not only extends to national sovereign territories but it extends to transnational domains as well. In the era of competitive globalization, the national economic growth, security and prosperity becomes a zero sum game, hence all resources within nation-state or outside are subjected to exploitation. As Luke argue (1999:122)' the environment particularly the goals of protection in terms of 'safety' and 'security' has become a theme of political operations, economic interventions and ideological campaigns to

raise public standards of collective morality, personal responsibility and collective vigour’.

The discourse on sustainable development constituted certain ways of thinking about representing and acting upon the nature. It functioned as a ‘regime of truth’, producing new forms of knowledge and inventing different notions and concepts which contributed to new domains of government’s regulation and intervention. The climate change issue was defined as a national resource problem which required adequate political, economic and social intervention on a national scale. The attainment of national growth was intertwined with the scientific and bureaucratic calculation of the government. Scientific advisory and expert groups like the CSIRO and CFF played an authoritative role in the collection, articulation and centralization of eco-knowledge generating insights planning and managing resources which denominated codes of power with significant reserves of popular legitimacy.

The growing number of experts and advisors in the environmental field is to further the collection, articulation and proliferation of eco-knowledge as these new knowledges and practices organize and legitimize the common understandings of the environmental reality and enforce ‘the right dispositions of things’ between humans and nature (Luke, 1999:146) Finally, enviro-discipline refers to the disciplining, normalizing and policing of individuals by imposing contingent valuation, weighing monetary costs and benefits in imposing docile nature under resource managerialism to ensure continuous supply of its provisions to capital production and reproduction under strict government guidance.

In order for capital to extract the surplus value from nature the state must control it (Parenti, 2015 :6) as it opens and produces nature abstractly, through knowledge formation, calculation, make it legible and enclosing it with the techno-managerial, administrative apparatus, science and governance The notion of sustainability was articulated and executed by the Hawke government to create a consensus between economy and environment, pacify resistance of environmental movement and sustain a status quo in the society, maintaining economic growth and

capital accumulation.

The government played a proactive and regulatory role in setting in place the legislative and institutional framework for the ESD policy trajectory. A process of assimilation was adopted by the government to bring two competing discourses of economy and environmental concerns into a legitimate, acceptable discussion about existing economic and resource development practices. Environmentalists and business communities were incorporated inside a set of 'normal' political negotiations. The ESD policy programme was a political success for Hawke government to forge a consensus and bridge the divide between warring parties. At the same time, it enabled specific groups to pursue their interests and to delegitimize other contending norms and interests through negotiations and settlement. The proposal for ESD was a broad tactic to escape the conflict between economy and environment as the basic concern was how to manage the population and resources in relation to the environment. The imperative to govern the social, economic and environmental was the core of the ESD discourse in Australia. The government achieved this in two ways: first there were acceptable ways in which government could interfere with property rights and economic development in the name of ecological sustainability. The addition of price and market instruments in attainment of ESD objectives were techniques of government regulation and compulsion. Industry and business associations felt relieved as it provided an alternative to direct forms government control and an opportunity for business to make and enforce its choices in the economy and society. The second was interference in decision-making to routinize and normalize this process when environmental and economic priorities collided. It presented by way of resolution, the complimentary and interdependent nature of environment and economy, and setting of new parameters for the negotiation of policy options between competing environmental and development interests. Environmental protection was translated into a political problem based on the argument that if environmental crisis was politically tackled with appropriate management and supervision, then development dilemmas can be overcome. The ESD policy preserved the status quo by reintegrating ingrained social structures such as growth, fossil fuel extraction and environmental conservation and protection resulting in de-



politicization of the environment. The rhetoric of ESD perpetuated the idea of economic growth or 'business as usual' and was an attempt to mask the conflict between expansionist industrialism and finite globe. As Dovers puts it (1997:29)' ...seriously pursuing sustainability will involve adding deep, structural inconsistencies between human and natural systems. The problem attribute of systematic causes is a supremely difficult one –the roots of unsustainability firmly rooted in our system of production and consumption and indeed in the practice of governance that have arisen in industrialized societies. No better domestic example exists in the ongoing farce of Australia's greenhouse policy, where doing anything real involves addressing the fundamental issue of energy'.

The policy experiment of ESD in Australia was short lived due to its conceptual weaknesses, multiple interpretations and oxymoron in character- a dialectical relationship between economic growth and ecological sustainability and where one cannot be achieved without compromising the other. The ESD discourse was simply policy adhocery on the part of government to green- wash capitalistic tendencies.

Sharon Beder describes (1994:8), the true nature of ESD process

*Sustainable development is not about giving priority to environmental concerns, it is about incorporating environmental assets into the economic system....Sustainable development encompasses the idea that the loss of environmental amenity can be substituted for by wealth creation; that putting a price on the environment will help us protect it unless degrading it is more profitable; that economic growth is necessary for environmental protection and there should take priority over it. It is an attempt to reduce the politics in decision-making by artificially replacing conflict with consensus, by emphasising technocratic decision-making processes such as cost-benefit analysis and economic instruments, and by ensuring environmental conflicts are increasingly decided by the market*

# **Chapter 4: National Greenhouse Reduction Strategy and Paul Keating**

## **Introduction**

This chapter details climate change policies of the Prime Minister Paul Keating (1992-1996), characterized by a shift from 'control and consensus' approach followed by Bob Hawke to a more 'competitive and conflict' environment initiated through the process of decentralization and regionalization of Commonwealth's influence in environmental matters.

The chapter critically examines the competition policy as a governing rule under the Keating government to shape and electricity market according to the neoliberal principles of privatization and marketization. The case-study on electricity restructuring, portrays how nature (electricity) is artificially created as an abstract commodity to enact a process of market valorisation subjugated to formal artificial principles of economic competition. The formatting of electricity production is linked to the governmentality critique of neoliberalism as a practice of restraining state action through the concept of 'the market'.

The objective of greenhouse gas mitigation led to National Greenhouse Reduction Strategy (NGRS) in 1992. The NGRS policy was couched in terms of 'no regrets' action centering on the possible costs and benefits associated with mitigation measures. Installing a competitive market and establishing institutions for selling electricity introduced bias towards cost effective measures to improve efficiency of energy use, promoting growth in energy intensive industries, and a significant increase in greenhouse gas emissions.

The chapter also focuses on the emergence of a new paradigm of 'partnership' and 'voluntarism' framed by a 'business as usual' approach in the mitigation of climate

change. It demonstrates that the purpose of such programs was to remove as many restrictions on business and fossil fuel industries as possible with very little progress in reducing the growth in greenhouse gas emission.

## **State Minimalism or Managed Decentralism in Environmental Matters**

The ascendancy of Prime Minister Keating soon represented a major over-haul of the Hawke Government's approach to 'reforming' national environmental policy. The dismantling of the Resource Assessment Committee (RAC) and winding down of Ecologically Sustainable Development (ESD) process were indicative Prime Minister Keating's apathy towards consensual decision-making demonstrating the governments deprioritizing of environmental matters.

The first signs of decay came with the elevation of Paul Keating to the prime minister in 1991. While Bob Hawke had taken a strong personal interest in the environment, Keating, treated environmental issues with a dismissiveness bordering on contempt. An already limited policy response lost political backing. There was a significant change in the approach towards policy making in environmental vis-à-vis climate change matters from Hawke to Keating government. The devolution (managed decentralism, c.f Cahill 2014) of Commonwealth's influence over environmental matters commenced by dissolving the Resource Assessment Commission (RAC) in 1993. The decision to dismantle RAC was interpreted as an indication of state-minimalism and economic rationalism<sup>42</sup> of the Keating government.

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<sup>42</sup> According to Foucault (1991:24) 'The idea of an economic government is that of a government informed by precepts of political economy but also that government which economizes its own costs: a greater effort of technique aimed at accomplishing more through a lesser exertion of force and authority.'

In 1992 the government finalized the Intergovernmental Agreement on the Environment (IGAE), clarifying the roles of the state and territories versus Commonwealth in terms of approving of major development projects. The government reformed the operation of Australian Heritage Commission (AHC) in order to incorporate States in the land-use decision-making process as cooperative partners. The core of this reform was based on the 'regionalization' method by which the AHC could undertake analysis of disputed areas of land which were at risk from development. During the Hawke labor government, the role of AHC was prominent as environmentalists used AHC findings to base their appeals to the Commonwealth for federal government interventions on land use matters. In many cases this resulted in strains between the AHC and state agencies. Under the Keating government, in the absence of Resource Assessment Commission, the cooperative character of federal-state relations in environmental matters rested at State level as it was argued to have more technical, scientific and administrative expertise in the policy areas in their respective jurisdictions.

Whilst the Hawke government attempted to institutionalize environmental policy making processes in which thoroughly discussed and rational policy making processes could be made, forestry was one area that was dogged by tensions over evaluation of the worth of forest areas and claims from various interest groups over the land use agenda (Economou, c.f , Scott & Praser, 1997). The Keating government initiated the Regional Forest Agreement (RFA) in 1992 to defuse political sensitivity towards forest management issues. The Regional Forest Agreement was a mechanism by which State and Federal governments could negotiate long term management and use of forests, securing industry access while protecting environment and sustainable development. It was indicated that Commonwealth and States would jointly cooperate and co-manage Australia's forests. Similarly, the Mabo decision in 1992 provided the Commonwealth the right for co-management with indigenous Australians over iconic reserves such as Uluru and Kakadu National Park. Whilst the Hawke labour government's approach was direct supervision and intervention in environmental policy making, Keating's believed in devolution and sought ways towards the incorporation of the States in decision-making process as cooperative partners.

The devolution of powers to the State government coincided with an important political development which unfolded during the transition period from Hawke to Keating. By 1993 the political landscape of the States dramatically changed in favour of Liberal Party (Economou, 1999). This shift was significant as the Coalition parties were more sympathetic towards developer interests in the States and so dominated Federal government's decisions on land use and resource policies in favour of developer interests. The rise of Coalition parties in the States and their inclination towards developer interests very well coincided with Prime Minister Keating's personal apathy towards environmental matters.

## **Climate Change: From Sustainable Development to Politics of Unsustainability**

Climate change as an object of concern emerged during 1980s-1990s when government saw themselves as required increasingly 'to do more with less' (Burchell, 1994:206). The government programme of decentralization and deferred authority matched with a strong statist program of nation- building and institutional reform. The government through their extensive micro and macro-economic initiatives successfully fanned the concept of 'national identity' built on the notion of economic success and personal status as measured by material acquisition. The unbridled consumption of cheap energy provided by fossil fuel formed the core nation-building narrative. From the very inception climate change as a political problem was rooted in 'energy security' and trade as it was imperative to secure Australia's economic success and competitive capability. In the One Nation Policy, Keating (1992:4) emphasized :

*The idea of One Nation was to lay the basis of a stronger Australia by calling on all our resources-human and material, our social and economic strengths, our intellectual strengths-to include all Australians in the process of nation building: and, immediately, in the great effort to*

*bring on economic recovery and the jobs that will go with it (Keating, 1992:4)*

The transition from Hawke to Keating government witnessed the return of the 'politics of unsustainability'. The government's outlook was focused on economic growth, cut-throat competition and 'no-regrets policy' that is taking no action on climate change if that had net adverse impact on Australia's trade competitiveness. As Keating (1992:27) stated:

*...While pressing for substantive action to address the dangers posed by global warming, Australia has made it clear that, in absence of similar action by major greenhouse gas producing nations, it would not adopt response measures which would have a net adverse impact on nationally or on Australia's trade competitiveness'*

Instead of transforming the economic and political structures which caused environmental crisis, Keating's priority was to defend and secure these socio-economic processes which were unsustainable and high growth, in which fossil fuel extraction took center stage. The government's fixation with economic growth and competitiveness was translated into policy measures consistent with the neo-liberal preference for market conformity of environmental policies except that market conforming was interpreted to mean 'doing nothing to upset business' (Hamilton, 2001:39). The entrenchment of an artificial market operated by 'visible hands' of the government reflected 'the triumph of fossil-fuel pragmatism' (Christoff, 2005). Capitalism was considered part of the solution to the increasing climate change crisis (and not the problem) as the government sought ways to tackle climate change without alienating capital and segments of business community.

The ESD process represented Australia's most concerted attempt to form a broad environmental strategy and to escape endemic environment-economy and intergovernmental conflict (Bulkeley, 2001, Kinrade, 1995, Papadakis, 1993). During the 1990s the federal government asked ESD working groups to form 'Greenhouse Working Groups' along with the Industry Commission to calculate costs and benefits of taking

action as was committed in the Interim Planning Target in 1990<sup>43</sup>. The Industry Commission was established by the government three years after the publication of the Brundtland Report as an independent advisory body on industry to the government (Hundloe, 1992). The cost benefit calculation by Industry Commission was a continuation from ESD policy as it proposed adoption of the principle of 'cost effective and flexible policy instruments such as improved valuation, pricing and incentive mechanisms' with regard to environmental protection, including climate change crisis (ESD, 1992). The Industry Commission concluded that unilateral action for Australia would be costly and conceded that they were unable to measure the benefits of action to reduce emissions due to uncertainties and long term nature of the issue and therefore should be left to ethical judgements by the government (Hundloe, 1992). The Industry Commission (1991:53) concluded:

*Australia would be affected through the impact of energy prices resulting from whatever domestic mechanisms are put in place to cut emissions. Taxes on energy will raise prices to users and reduce producer returns. This will cause a reorientation of Australian production away from the production of energy and energy intensive products, with a consequent effect on Australia's output and industry structure...Because of the importance of trade to Australia's economic performance, the effects of an international consensus on Australia's major trading partners economies will be particularly important. The more severe the effect of a world-wide commitment to reduce emissions on the economies of Japan and OECD countries, as major markets for Australian exports, the more severe will be the effects of a consensus on this country*

The inferences of Industry Commission were in stark contrast to findings of the ESD greenhouse working groups as it recommended that there were a broad range of actions that would be cost-effective on energy grounds alone so that additional benefit in greenhouse gas reduction would be cost-free (Taplin, 1994, Hamilton, 2001).

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<sup>43</sup> The interim target was subjected to Australia 'avoiding actions with net adverse economic effects or adverse effects on trade competitiveness, unless similar actions were taken by major greenhouse emitting countries'. This caveat led to assess the costs and benefits of greenhouse response.

In 1992 the Commonwealth and States designed a national framework which comprised a suite of measures in order to reduce Australia's greenhouse gas emissions and endorsed the National Greenhouse Response Strategy(NGRS). This endorsement took place against the backdrop of waning of political will to contribute effectively in the mitigation of climate change with elevation of Paul Keating as the Prime Minister in 1991 and Australia's position as a signatory to United Nations Framework Convention (UNFCCC) at the Earth Summit in Rio. Article 2 of the UNFCCC (1992)<sup>44</sup> proposed:

*Stabilization of greenhouse gas concentrations in the atmosphere at the level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in sustainable manner.*

The UNCED convention adopted the principle of 'common but differentiated responsibilities and respective capabilities' (UN, 1992 Article 3.1), clearly stating that the developed nations should take a lead in the solving the problem of climate change and also through financial aid and technology transfer help the developing countries in tackling the problem. The convention recognized that developing countries were not in the position to fulfil their obligations in mitigation of climate change. Whilst being an important step in international recognition of climate change as a problem, it lacked teeth as it contained no concrete or legally binding commitments by the parties on stabilization or reduction of emissions. The convention required parties to take into account the 'special circumstances of countries highly dependent on income generated from production, processing and export, and/or consumption of fossil fuels and associated energy intensive products and /or the use of fossil fuels by Parties which will have difficulties in switching to alternatives' (UN, 1992, Article 4.2 a). This convention is

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<sup>44</sup> <https://unfccc.int/resource/docs/convkp/conveng.pdf>



referred to as 'fossil fuel clause' provided Australia and other oil producing countries to argue that international obligations should be differentiated based on impact on the economy taking action<sup>45</sup>. Along with this clause the convention signaled that each parties will adopt national policies and take corresponding measures to mitigate climate change<sup>46</sup>. This indicated that countries were only bound by commitments committed on a voluntary basis to limit their concentrations of greenhouse gas to 1990 levels.

The predominance of voluntary commitments in the absence of any legally binding targets and timetables for the Parties adopted at UNFCCC , mirrored the voluntary nature of Australia's domestic policies of climate change under Prime Minister Keating. Whilst the issue of climate change required long term policy reforms, in contradiction with the policies of the government which worked on short term electoral cycles and political agenda.

Keating's agenda was the protection of Australia's economic interests in the mitigation of climate change emphasizing on 'differentiated responsibility' in the light of economic circumstances highlighting the uncertainties of climate science and mostly importantly elevating the role of market to achieve least cost and efficient abatement mechanism. The rationalistic economic discourse of climate change mitigation was thus closely linked to Keating's vision of modernization, nation-building and protectionist national economic growth in a globalized market.

The centerpiece of Australia's response to climate change was the National

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<sup>45</sup> The history of international climate change negotiations is characterised by fault-lines of political conflict in relation to climate change have resulted in governments organizing themselves into blocs and negotiating coalitions to enhance their influence, create new alliances and historical blocs in order to advance common agendas (Anderson et, al, 2002, Mathew Paterson et al, 1992, Bodansky, 1993, Newell & Bulkeley, 2010).

<sup>46</sup> The UNFCCC contained an implied target for developed countries to stabilise their emissions of greenhouse gases at 1990 levels by the year 2000. It was estimated that FCCC target would imply a 14% reduction by the year 2000 on 'business as usual' emission levels (Commonwealth of Australia, 1995)

Greenhouse Response Strategy (NGRS) which stemmed from formal yet voluntary commitments under the UNFCCC at Rio 1992. The National Greenhouse Reduction Strategy (NGRS)<sup>47</sup> was a phased plan of action towards limiting greenhouse gas emissions, conserving and enhancing greenhouse gas sinks and preparing for the potential impacts of climate change (Commonwealth of Australia, 1995). Labelled as the first phase of an evolving strategy, the NGRS concentrated on action of ‘no-regrets’ nature i.e. ‘those that have net benefits (or at least no net costs) in addition to addressing the enhanced greenhouse effect’ (NGRS, 1992:12) and included need for insurance measures to reduce uncertainties of climate change impacts. The main focus of the government in the adoption of NGRS was on energy supply and demand particularly in relation to electricity. The objectives of the NGRS in relation to energy supply and demand were integrated to least-cost planning, demand side management and increased use of renewable energy sources and cogeneration. Influenced by the Industry Commission’s report, the strategy proposed the pursuit of ‘no-regrets’ accompanied by significant caveats first *subject to Australia’s trade competitiveness, in the absence of similar action by major greenhouse producing countries* (NGRS, 1992:11). Second it also emphasized ‘equity considerations should be addressed by ensuring that response measures meet the broad needs of the whole community and that any undue burden of adjustment potentially borne by a particular sector or region is recognized and accounted for’ (NGRS, 1992: 12-13). It indicated that sectors such as mining, metal processing, petroleum or agricultural sectors responsible for greenhouse gas emission should not be economically burdened (National Greenhouse Steering Committee, 1992:5)

The guiding principle of ‘equity consideration’ represented a significant detour from the principles of ESD which stated that ‘some industrial decline and closure, and

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<sup>47</sup> Mark Dissendorf (1992) referred to the greenhouse policy development process in Australia as ‘the bureaucrats betrayal’. The National Greenhouse Steering Committee comprised of state and federal bureaucrats rejected the recommendations of ESD Greenhouse Report and produced a Draft National Greenhouse Response Strategy. The Steering Committee had a free hand in draft strategy and a lip service consultation was made with ESD representatives. A weakened final policy document was thus released as the National Greenhouse Response Strategy

some restructuring would be necessary to achieve cuts in greenhouse gas emissions, but this would be countered by growth in industry oriented towards energy efficiency and renewable energy' (Taplin, 1995:391). The 'equity principle' was seen as special protection to coal industry and the aim was to replace 'no-regret measures' which would impose no net costs to the society as a whole, with one that would not impose costs on any specific interest group such as fossil fuel industry (Diessendorf, 2000). In many cases 'no-regrets' was misinterpreted as 'no-losers' and this misrepresentation resulted in deferred action on greenhouse gas reduction measures (NGAP, 1997: 15)

## **National Competition Policy (NCP) and Electricity Restructuring in Australia**

Until the 1990s the Australian electricity supply industry was largely vertically integrated and predominantly government owned at the State level (Outhred, 2000). The re-shaping up of electricity production in Australia in accordance to with neo-liberal principles of market efficiency was first promoted by National Competition Policy in 1993 (Hilmer, et al, 1993). The National Competition Policy was aimed at promoting competition through three major reform strategies: First The Trade Practices Act of 1974 was extended to remove anti-competitive behaviour not only by corporations but also by unincorporated and government owned business, Second, government business activities were exposed to market pressures through a range of mechanisms and third, there was review of all legislation that restricted competition with an eye on repealing measures where the costs of such restrictions outweighed benefits ( Hollander and Curran, 2001).

The justification of national economic efficiency, economic growth and of market forces as a necessity, became indispensable. In keeping with high degree of economic efficiency which became the distinctive idiom of neoliberal policies, the principles and practice of competition were extended to all areas of life. As Hindess puts it (1998 c.f Besson & Firth, 1998:6) 'successful competition is now perceived to depend upon the promotion of economic efficiency, not only in production of goods and services but in all areas of national life'. Following from Foucault (2008:131) 'the problem of neo-liberalism

is rather how the overall exercise of political power can be modelled on the principles of market economy'. The population was entangled with the wider reform agenda of the government by making individual and institutions to become more capable of responding to competitive pressures and market signals. According to Beeson and Firth (1998:225), the significance of the Karpin Report (1995) was that it 'symbolized' the extent to which, under labor, 'Australia's population came to be seen as something to be worked upon so that it might play a more efficient and productive part in national economic development'.

In 1995 the Keating government consolidated the National Competition Policy (NCP) and negotiated its acceptance through the three tiers of Australian government-federal, state and local and all together reshaped the rules for restructuring of the electricity market. The formatting of electricity restructuring was based on neoliberal principle self-correcting market aiming at economic efficiency. The question however, is, if markets are self-correcting through competition why is there a need for a competition policy in any national economy? Following from Foucault (2008:120) the true nature of competition is that 'competition is a principle of formalization [that] will only appear and produce its effects under certain conditions which have to be carefully and artificially constructed'.

Electricity restructuring aimed to transform electricity industry from a site of corruption and bureaucratic speculation and to attain economically efficient arrangement (McDonnell, 2008). The state-run power generation enterprises were considered inefficient and that the market would eliminate wastefulness. The market was designed to replace bureaucratic control of investment with supposed objectivity, efficiency and transparency. The restructuring of the electricity sector through National Competition Policy (NCP) resulted in free-for-all in the national electricity market, privatizing the state-owned energy instrumentalities creating a proliferation of private generators and retailers.

The governmentality critique of neoliberalism as a practice emphasizes restraining state action through the concept of 'market'. Foucault's assertion of the idea

of competition as 'eidos' (essential) is central to his discussion of the 'philosophy of social market economy' of German Ordo-liberalism (Foucault, 2008). For the ordo-liberals market becomes the organizing principle of state action. The 'eidetic' justification of market is further reinforced by the fundamental role played by competition, as pure competition should and can only be an objective, an objective that accordingly requires active policies (Foucault, 2008:121). Competition is thus an historical objective of governance; it is not a natural given that should be respected. This means that not only does competition have a free rein, but competition should be produced and reproduced, as 'the government must accompany the market from start to finish', intervening to facilitate, produce and restore competition through active governmentality (Foucault, 2008:121). The virtue of competition is that it generates economic growth, the promotion of which is the only one and true fundamental social policy (Brown, 2015). Foucault interpreted this as 'vital policy' which is not only an economic policy but must be understood as a social-political concept. The vital policy renders social domain as economic and codes of social existence as an enterprise.

Outhred (2003) demonstrates the attention to market design and industry structure in order to achieve electricity restructuring. Outhred (2003:1) explains

*'the process of electricity restructuring will depend on the efficacy of the commercial interfaces and the development of a compatible policy and regulatory regime that can address the issues that cannot be resolved through competition'.*

Further, any competition model for electricity restructuring, 'abstracts commodity' from the underlying reality of varying levels of energy flows and cannot capture the short term mutual dependencies between participants (Outhred, 2003:1). 'An electricity industry operates by maintaining a continuous flow of electrical energy from generators to end-use equipment. Generators, network elements and end-use equipment all contribute to this goal by operating in a mutually dependent manner' (Outhred, 2004:3). The success of competition rules in electricity restructuring, depended on coordinated and cooperative distributed nature of action across human and extra-human

nature enrolled into a common policy objective.

The restructuring of electricity industry initiated by the Keating government in 1991 was further extended, deepened and intensified by the Howard government through the operation of the National Electricity Market (NEM) in 1998. The NEM was based on a number of market principles, including the decentralization of decision-making<sup>48</sup>. Centralized decision-making was made by the state for operation and planning, and decentralized decision making on the availability and quality of services, dispatch, settlement and market information. The gap between what was commodified and public priorities necessitated the development of an array of monitoring devices and regulatory institutions for market information, settlements, suspension and legal liability for unsatisfactory delivery (Outhred, 2003:3).

## **Politics of Unsustainability and Electricity Marketization**

In 1994 Australia's national report under United National Framework Convention on climate change UNFCCC specified 'a competitive market will provide the right price signals which will ensure that electricity measures, renewable energy options and demand side measures are adopted where they are most cost effective' (Australia, 1994:4, c.f Diesendorf, 1996). A competitive market promised more efficient greenhouse outcome than otherwise would be achieved by regulation and would redress market imperfections by focusing on promoting efficiencies in the production and distribution of

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<sup>48</sup> Outhred (2000:115) explains 'Centralized decision making would pre-empt commercial discretion of market participants and distort market outcome. Therefore, the National Electricity Market (NEM) is designed as a 'simple' spot market, in which the spot market for each interval is solved independently of all other spot market intervals. Centralized forecast of future prices were made, however most responsibility for decision making rests with participants. For example, decisions to start or stop generators are left to market participants'

energy.

The government's claim carried much importance considering fossil-fuel electricity formed one of the major sources of greenhouse emissions in many developed countries including Australia. The commitment to greenhouse emission reduction in electricity restructuring was initially discussed before the announcement of National Competition Policy (NCP). In 1991, the federal government established the National Grid Management Council (NGMC) with an objective 'to encourage and co-ordinate the most efficient, economical and environmentally sound development of the interstate electricity supply industry' (Diesendorf, 1996:35). However, the government's commitment to environmental protection in electricity sector only focused on improvement of 'the efficiency of energy markets, subject to existing environmental politics' (National Competition Policy 1999, c.f Hollander and Curran, 2001:45).

The twin process of electricity marketization and sustainability were kept at loggerheads much to the disappointment of participants in Ecologically Sustainable Working Groups established by the government in 1990's. The proponents of ESD advocated that electricity marketization needs to be disentangled from end-use energy services (Diesendorf, 1996). The unanimous recommendations of ESD energy working groups was implementation of integrated least-cost energy planning and cost-effective energy efficiency measures for the cost-effective stabilization of Australia's carbon dioxide emissions at the 1990s level by year 2005 (Diesendorf & Kinrade, 1992).

The implementation of least-cost efficient energy planning was inhibited by electricity restructuring through market efficiency centered on institutions setting a price that included only the direct costs associated with the production inputs of electricity (Diesendorf, 1996). The imposition of a 'competitive market' and setting a price through National Electricity Grid acted as a significant barrier to least cost planning approach to energy supply and a gradual shift to renewable energy.

According to Hamilton and Denniss (2000:84-86) 'early results show that National

Competition Policy (NCP) and in particular the development of national grid, has contributed to a substantial increase in the production of greenhouse gases'. The NCP reforms resulted in lower electricity prices resulting in increased consumption and growth in energy intensive industries. The Australia Conservation Foundation (ACF) in its submission to 2000, Senate Inquiry on the NCP stated that greenhouse emissions were not factored into the price of electricity generated through the use of brown coal in Victoria. Accurate pricing structures that reflect the real cost of production and distribution including the externalities of environmental degradation were not a part of NCP agreements (Senate Select Committee, 2000 c.f Hollander and Curran, 2001:46). The National Electricity Market contained no rules on environmental, sustainability or greenhouse considerations reflecting the hegemony of competition policy as governing rules<sup>49</sup> for an economically efficient arrangement.

The electricity marketization was intended to break down previously held natural monopolies in electricity, water, rail and gas; however, the corporatization of public utilities had began with first Council of Australian Government's meeting in 1990 (Wilkenfeld & Spearitt, 2004). The neoliberal justification of electricity restructuring was based upon its attack on 'excess-generation capacity', as it was argued that integration of inter-state markets would allow for better utilization of existing capacity, instead of wastefulness, excess capacity in one state can be used to meet demands in another state.

A factor contributing to electricity restructuring in Australia was due to state financed program of building new power stations in 1980s in the expectations there would be a 'resource boom' based primarily upon aluminium smelting. This ran in

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<sup>49</sup> Outhred (2004, fn1) Despite the 'original 1991 brief to encourage and coordinate the most efficient, economic and environmentally sound development of the electricity industry...Government policy makers anticipated that energy market reform, its acceleration, would lower the average greenhouse gas intensity of energy. Analysis now shows that far from achieving a 14 Mt reduction in 2010, as estimated in Australia's Second National Communication to the United Nations Framework Convention on Climate Change, energy market reform is now estimated to result in an increase of 0.1 MtCO<sub>2</sub>-e by 2010' (COAG,2002:229)



parallel to the restructuring of textile and manufacturing industries through tariff deregulation (Diesendorf, 1996:35, Diesendorf and Wilkenfield, 1995). The focus was on integration of emission intensive electricity generation into a wide range of processing and manufacturing other than aluminum production. A former energy official (Pearse, 2009:26) in the Keating government remarked:

*...when we were talking about energy market reform, breaking up the electricity market and reforming it, the view was that we had to drive energy prices down and consumption up...well I mean, so we would attract energy intensive industries and therefore increase consumption. Yes basically make Australia the homeland for footloose capital that required cheap energy- aluminium and so forth. And therefore we expected to see increase consumption of energy because that was our comparative advantage. When we went through the whole reform process, there was an attempt to get in there that there had to be a lot of fuel switching and greenhouse considerations and that prices should actually reflect carbon and all that. That was effectively removed by Keating*

The aim was to make cheap coal as Australia's natural competitive advantage, dominant export and major selling point to multinational investors. The intention of the government was never replace fossil fuels with renewable sources of energy and implementing energy efficiency programmes. Whatever regulations were imposed on the business sector were to be based on a least cost approach to energy planning and the overriding principle of all policies to be was framed by the need to maintain strong and sustainable 'economic growth' (Rosewarne, 2003)

National Competition Policy (NCP) and the restructuring of electricity market through marketization and privatization marked an important milestone in the federal and state government's future approach to 'market conforming' principle in climate change matters. The Keating government consciously exploited the 'comparative advantage' in cheap electricity, in order to attract multinational investors. These companies mainly produced for export, that is trade exposed and so was sensitive to any increase in electricity prices (Pearse, 2009:26).

## **Contesting National Greenhouse Reduction Scheme (NGRS)**

Electricity industry restructuring and the National Greenhouse Reduction Strategy (NGRS) developed simultaneously under the Keating government. In the words of Ian Carruthers, Assistant Secretary, Air Pollution and Climate Change Branch of Environment Australia '...with the benefit of experience and feedback, the message has been conveyed from a range of quarters that 1992 strategy was seen as a product of Government for the implementation of the government' (Carruthers, 1997:12-13).

The National Greenhouse Reduction Scheme (NGRS) fell short in the effective mitigation of climate change. There was no real prospect that Australia would achieve the interim planning target adopted by the Commonwealth in 1990, the government had no intentions to achieve it. So the purpose of NGRS was only to maintain a status-quo (Taplin & Yu 2000). The blind faith in the competitive market promoted by business interests, was a way to divert from a more realistic approach to greenhouse policies. The myth of perfect market was overshadowed by distortions and cross subsidies generated by the government. As National Greenhouse Advisory Panel stated in their evaluation report (NGAP, 1996:69) 'there was a need to remove market distortions and barriers or to make subsidies, tax breaks and other market distortions transparent including separating community service obligations from energy pricing particularly electricity tariffs'. Furthermore, Dissendorf (1996:35) argued that 'a large potential for implementing cost-effective energy efficiency measures was held back by market barriers'. A competitive market and establishing institutions for setting a price that included direct costs associated with production inputs of electricity, introduced of bias towards cost effective measures to improve efficiency of energy use. The government instead of providing efficient energy services, claimed that restructuring of the competitive electricity market would encourage cost-effective efficient energy use to be implemented automatically.

The objective of integrated low cost energy planning (ILCEP) was never achieved

as the government used the restructuring of the electricity industry as an excuse for not implementing low cost energy planning (Dissendorf 1997 c. f Hamilton and Throsby, 1997:44). The Industry Commission went against the ILCEP on the grounds that it was 'focused on cost minimization alone and ignored the fact that consumers who require premium services should and do pay extra for such requirements' (Industry Commission, 1991, c.f Dissendorf and Hamilton, 1997:209).

The National Greenhouse Advisory Panel (NGAP) established in 1994, in its yearly review NGRS submitted a progress report which went as following

*Until now, micro-economic reforms in the energy sector have had the primary aim of achieving a competitive energy supply market, thereby reducing unit energy prices. This objective is not necessarily consistent with encouraging energy efficiency and reducing greenhouse gas emissions. National Greenhouse Advisory Panel (NGAP) is concerned that the National Grid Management Council may be giving insufficient emphasis to the implications of competitive electricity markets for greenhouse outcomes. Government should put in place mechanism to ensure that new market arrangements are consistent with greenhouse objectives. In particular, this will involve specific mechanisms to achieve integrated and least cost energy services (NGAP, 1996:27)*

The introduction of competition policy in the electricity industry was substantial as it resulted in the rapid growth of emissions due to strong economic growth, the fall in the price of wholesale electricity and most importantly the rising carbon intensity of electricity generation (Hamilton & Denniss2000). The operation of the National Electricity Market was dictated by a number of government regulations via the provision of implicit subsidies to greenhouse- intensive generators of electricity, which resulted in decreased efficiency. As Hamilton & Denniss (2000:94) rightly concluded the neoliberal justification of a 'market which relies on price signals cannot deliver efficient outcomes as long as implicit subsidies favour generators whose negative externalities are largest'. The development of the national grid led to a significant increase in the retail prices of electricity for end use consumers, reflecting shifting costs of electricity supply on to the households, thereby socializing the costs of capitalist profitability (Chester, 2009, Cahill and Beder,2005) and was used as strategy to undermine the union power in electricity industries.

Under the NGRS, a number of energy efficiency programmes were introduced for example the Minimum Energy Performance Standards (MPES) which were recommended for various types of electrical equipment. However, the decision to adopt such efficiency programs was kept voluntary and simply did not work. The government also included a new program of 'industry programs and partnerships' under which firms were invited to adopt targets for reducing greenhouse gas emissions based on the nature of their activities. The program was considered as a platform for industry to participate in the national debate on global warming in a constructive way and to provide the firms the freedom to reduce emissions in a most cost-effective manner. For example, the National Average Fuel Consumption (NAFC) was a voluntary agreement between Commonwealth Government and Chamber of Automotive Industries to take steps to ensure that fuel consumption continued to decline. Competition policy in electricity restructuring was recounted by Beardow and Schaap (2000:125-134)'...to improve the transparency of the market which promoted cost reflective pricing and energy efficiency, ...and as environmental performance was integrated into aspects of business decision making, business embraced cost-effective self-regulation in relation to environmental management such as Greenhouse Challenge'.

However, a review prepared by George Wilkenfield and Associates (GWA) and Economic and Energy Analysis (Wilkenfield, Saddler and Hamilton, 1995 :19) reported

*'There is no evidence that the voluntary NFAC targets in place from 1978 to 1987 produced any reductions in automobile fuel consumption.... it is reasonable to conclude that 'industry partnerships' are merely window-dressing to give an illusion of action to both the domestic and international audience, and to further delay the time when real action will be taken'.*

The National Greenhouse Response Strategy (NGRS) effectively sanctioned the continued expansion of fossil fuel energy industries. The micro-economic reforms initiated by the government resulted in competition within and between energy sources, competition to increased service delivery, expanded utilities which sold energy services,

rather than particular forms of energy such as renewable energy. The objective was simply to reduce the costs of wholesale electricity through competition and thereby increase consumption without any prospective shift to renewable energy.

The National Greenhouse Advisory Panel (1996) recommended a revised definition of 'no-regrets' policy of the Keating government with that of 'go beyond no-regrets'. The policy of 'no-regrets' was misrepresented as 'no losers' which deferred action on greenhouse mitigation. As a result of 'no-regrets and the voluntary nature of the NGRS, the largest emitters did not take any measures to limit their emissions in response to climate change. The NGRS was criticized at 'misapplying the Ecologically Sustainable Development (ESD)' principles in formulating a greenhouse strategy. Robyn Eckersley a participant in ESD process reported that there was a clear failure to link the principles of ESD policy measures and strategy formation in the NGRS (Bulkeley, 2001:45). Between 1990 and 2006, The Australian government reported a 47% increase in emissions from its stationary energy sectors despite the introduction of National Greenhouse Response Strategy. Wilkenfield, Hamilton and Saddler (Wilkenfield, et al, 1995:4) reported

*After two years of its operation there was no evidence that NGRS had saved one single tonne of greenhouse gas emissions, which would not have been saved in any case and for other reasons. In other words there had been no departure from 'business as usual'.*

## **The Politics of Performance of Voluntary Benchmarks in Green-Power Scheme**

The first move towards the privatization of electricity supply took place under New South Wales (NSW) Premier Bob Carr's government in 1995. The Carr Labour government undertook implementation of National Competition Policy initiated by Prime Minister Keating which sought to create markets and competition within them by following agreed competition principles. The main advance was to impose a greenhouse

emissions benchmark on newly created electricity retailers in NSW to develop and implement strategies to reduce emissions associated with the supply of electricity.

The NSW government established the Sustainable Energy Development Authority (SEDA) with significant level of funding with an aim of 'delivering greenhouse gas reductions, environmental, economic and social benefits to the NSW community by accelerating the transition to sustainable production and use of energy (SEDA, 2004:2). This was to be achieved primarily through 'market transformation...where the majority of investors and consumers routinely adopt sustainable energy technologies and services, for the economic and environmental security they provide over conventional energy supply' (SEDA, 2004:2).

The Green Power Scheme was an initiative directed towards households and business was developed to provide a rebate for purchasing electricity generated from renewable sources. The scheme was based on a voluntary approach where consumers concerned and well-informed about greenhouse gas emissions formed the target market. Voluntary approach via self-regulation was a continuing strategy of the government to avoid taking effective action and to displace obligations and responsibility to the consumers and private action of individuals.

Due to the interconnected nature of electricity supply industry, emissions from generators located in other state jurisdiction such as SA, VIC, QLD were to meet load of electricity in NSW and vice-versa. The Green Power Scheme in NSW defined a fictional 'NSW Pool' of emissions generated due to the NSW share of the national market. The imposition of voluntary benchmarks in greenhouse emission reduction was restricted to only electricity retailers in NSW contrary to the fact that retail activity produced no emissions. The justification for it was that regulating generators that participate in national market would impose a competitive disadvantage to NSW generators (Nolles, et al, 2002)

The voluntary benchmarks undertaken by electricity retailers proved to be unsuccessful in meeting emission targets due to the scheme rules, its relationship with

Federal policies and above all the overriding neoliberal principles and economic instruments to bring the structure and costs of the scheme under the market purview. Based upon discussions with relevant managers and retail organization in NSW, Nolles et al (2002:6) reported

*No requirement existed that a strategy plan had to target meeting the benchmark. In the extreme, a strategy plan could thus in fact target NOT reaching the benchmark, and a progress report could then state that (as planned) no progress towards the benchmark had occurred, and this would still be considered 'compliant' by the Ministry of Energy and Utilities.*

There existed a lack of accounting reconciliation between activities claimed under NSW licence conditions and activities claimed under the Federal Mandatory Renewal Energy Target (MRET) (Denniss, 2000). Under the MRET, it was to be mandatory for electricity retailers to source 2% of their supply from renewables. This led to 'double counting' with a probable outcome that introduction of the NSW Licence did not lead to a significant outcome in greenhouse gas abatement additional to the MRET (Nolles et al, 2002). The lack of accounting reconciliation between MRET and NSW licence conditions was reported as (Nolles et al, 2002:11)

*'double counting', with the result that the NSW Licence Conditions will have a limited impact in terms of both actual absolute emissions and in attracting additional investments into low emission generation or sequestration activity. The majority of the apparent reduction in emissions will be a result of the accounting methodology used.*

The introduction of a 2% renewables target of MRET was further debated for its equity input as the consumers were forced to pay premium prices to help retailers meet their statutory obligations. Denniss (2000:4) explains

*Under such circumstances it is likely that, in addition to ensuring that Green Power Scheme attracts supply from new renewable generators, retailers will have to source Green Power from schemes that are not contributing to meet the 2 per cent target. If this is not the case, then Green Power customers would be paying a premium price to help retailers meet their statutory responsibilities.*

The overall performance of the green power scheme proved to be disappointing as only 2 percent of residential consumers participated in the scheme' (Hamilton, 2001:51). The principle of voluntarism of consumers paying higher prices for a particular product in a deregulated electricity market proved ineffective. In a competitive market rather than customers putting pressure on retailers to seek efficiency and minimize costs of electricity, the outcome was increased non-price competition, rising costs, and most importantly potential for reduced technical efficiency.

## **The fetishization of partnerships**

Keating government marked emergence of a new paradigm of partnerships. This shift was from a more disciplinary mode of government in which the population was considered a passive social entity which can be managed in a top down manner to what governmentality scholars such Dean (2010), Rose and Miller (1992) referred to a mode of government where the impetus was on radicalizing the idea of 'governing at a distance' through 'technologies of agency' and 'technologies of performance' (Dean, 1999). The 'technologies of agency' emphasize on quasi-contracts and partnerships (e.g. public-private partnerships) technology of citizenship through which the government binds the society in sharing the same objective, and creates consensus to the aims and objectives of the government. 'Technologies of performance' include setting of performance indicators such as benchmarking, global reporting initiatives, environmental accountability, carbon footprint and audits, as ways to create certain codes of conduct which individuals are pressurized to conform.

In 1994, the Commonwealth Government in National Communication under the UNFCCC confirmed that existing responses under the NGRS would only be able to achieve half towards the UNFCCC target; thus the failure of NGRS was all very apparent. Political and economic debates with regards to the need for more stringent emissions reductions and more significant instruments and measures, including a carbon tax, occupied center-



stage. The proposal for a carbon tax was vociferously rejected by fossil fuel lobby, particularly by the transport, mining and energy and government ministers from energy and economic departments; the establishment of Australian Industry Greenhouse Network cohered these interests. The fossil lobby deployed arbitrary economic models to indicate the massive negative economic impacts of a carbon tax and dominated the media to showcase its results. Instead of a tax, the industry lobby proposed a voluntary greenhouse program.

The proposal became the Greenhouse Challenge Program (GCP) which not only deflected the debate over carbon tax, it also provided a key part of an additional Greenhouse strategy, the Greenhouse 21C which was implemented in 1995. The Greenhouse Challenge Program was a joint government-industry initiative for working toward the reduction of greenhouse gas emissions by industry (AGO, 1995:1690). Prime Minister Keating announced the new package of 'no-regrets'<sup>50</sup> measures under Greenhouse 21C, which not only lacked clear emissions reduction targets, but it was limited within firm boundaries rather than on a national scale (Bulkeley, 2000, Christoff, 2005). The program encouraged industries and industry associations to sign up for voluntary emission reduction schemes for instance the adoption of efficient technologies, or enhanced sink capacities, tree planting programs which were externally audited.

One of the drivers for adoption of voluntary partnership measures was Australia's ratification of UN Framework Convention on Climate Change in 1992 as it was stated in the Greenhouse Implementation Plan

*The cooperative agreements program provides for industry and the Commonwealth to contribute significantly towards meeting Australia's international obligations under the UN Framework Convention on Climate Change (Commonwealth of Australia, 1996:11)*

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<sup>50</sup> The GCP was created within the 'no-regrets' framework of the 1992 National Greenhouse Response Strategy (NGRS). The Strategy defined no regrets as 'a measure that has other net benefits (or at least no net costs) besides limiting greenhouse gas emissions or conserving or enhancing greenhouse gas sinks' (AGO, 1999: 12)

The core principle of Greenhouse 21C as stated:

*The Commonwealth and industry will work together to put in place cost-effective, flexible, voluntary measures that will constitute credible commitments to significant greenhouse gas reductions through improvements in energy and process efficiency on a continuing basis; and by enhancing green-house sinks (Commonwealth of Australia, 1996:3)*

Nevertheless, the GCP was a complete 'win-win' option for industries. The measures were designed to be a within the framework of 'no-regrets' that required polluters to undertake no measures which had a net cost. The programme was also beneficial for the polluters as it was effective in terms of heading off mandatory emission targets, and above all it elevated the green credentials of the industries as it provided them an opportunity to demonstrate their concern without compulsory measures bearing any costs on business. As the program clarified :

*Co-operative agreements are voluntary. The greenhouse challenge is not intended to compromise the business objectives of development and growth and participants may withdraw from the program at any stage without penalty (Commonwealth of Australia Greenhouse Challenge Implementation Plan, 1996:8)*

The fundamental flaw with regards to the effectiveness of greenhouse challenge programme was that many of the specific measures in the programme were planned to be adopted by the industries anyway. Therefore, such measures failed to achieve significant outcomes greater than 'business as usual' (Christoff, 2005, Hamilton, 2001)

In 1996, the Commonwealth government commissioned an independent study to evaluate the effectiveness of Greenhouse Challenge Program. The study carried out by two leading energy consulting firms George Wilkenfield and Associates (GWA) and Economic Energy Analysis (EEA), revealed emission reductions by the Greenhouse Challenge Programme were highly exaggerated. According to the report '...about 83 percent of the emissions reduction would most likely to be realized in a business as usual (BAU) scenario' (GWA and EEA, 1996:28).

The GCP was designed on an ‘additionality principle’<sup>51</sup>, as a benchmarking and audit tool where a critical test of effectiveness of the program was based on the extent to which greenhouse gas emission was reduced below the levels they would otherwise have reached in absence of the program. In order to calculate emissions reduction due to GCP, a concept of ‘frozen efficiency’ was adopted based on the assumption that companies in question would not make any improvements in energy efficiency over next several years. The report prepared by GWA and EEA (GWA& EEA, 1996:27) were highly critical of ‘frozen-efficiency assumption which was considered an entirely artificial concept’, rather than actual emission reduction which does reflect what would have been likely to occur even in the absence of the GCP. The baseline emissions were arbitrarily determined by the participating firms and there were strong reasons to conclude that the GCP ‘was plagued by systematic baseline inflation’ (Hamilton, 2001:45). In the absence of independent verification of actual baseline emission and the claims made by the polluters regarding level of reduction, the credibility of the program was in serious doubt.

As the GWA (1995:19) rightly noted ‘It is reasonable to conclude that ‘industry partnerships’ are merely window-dressing to given an illusion of action to both the domestic and international audience and to further delay the time when action will be taken’.

The greenhouse challenge program reflected a strong government corporate nexus as the agreements of the program were treated as commercial in confidence and were not publicly disclosed. To shield it from popular criticism, the government appointed its own evaluation team of the GCP scheme comprising federal bureaucracy including department of Industry, Science and Resources and Department of Agriculture, Fisheries and Forestry which grossly exaggerated the effective ness of the program and

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<sup>51</sup> The Kyoto Protocol of 1997 established the concept of ‘additionality’ in the provision of flexibility mechanisms such as Joint Implementation(JI) and Clean Development Mechanism (CDM)

largely to appease the public.

In 1999 for instance the own evaluation team boldly asserted in its evaluation report of Greenhouse Challenge Programme 'The Greenhouse Challenge is demonstrating that significant greenhouse gas emission abatement actions are taking place in industry which will contribute to Australia's achievement of commitments under UNFCCC (Australian Greenhouse Office, 1999:3). The conclusions from the evaluation report were contradicted in the same report as it stated 'in qualitative terms, it is clear that some of the actions reported under the Challenge would have occurred in any event...however, over half of the surveyed participants indicated that the Challenge played an important role in stimulating abatement action. On this basis it is clear that many actions would have not occurred without the challenge' (Australian Greenhouse Office, 1999: 45-46).

Polluting industries used this publication to argue the merit and effectiveness of voluntary action, and a justification against any mandatory abatement policies. In the absence of independent verification of emissions reduction, the evaluation was merely a public relation exercise rather than a serious policy evaluation (Hamilton, 2001). The evaluation was undertaken to greenwash the 'clean and green image' of the polluting industries creating an impression of corporate environmentalism.

Reaffirming the Greenhouse Challenge Program's importance, Prime Minister Howard in his tenure allocated an additional \$27 million, with a commitment to increase the number of large and medium sized participating companies from 100 to 500 by 2000 and more than 1000 companies by 2005. In order to meet the target, the quality of agreement was sacrificed at the cost of meeting the quantitative target (Hamilton, 2001). The 'no-regrets' basis of Greenhouse Challenge Programme was therefore 'business-as-usual' for big emitters which would have been undertaken anyway. The attempt of big polluters to double dip was a glaring example of the ravenous nature of fossil-fuel industries in the climate change debate.

## Conclusion:

Following from Foucault's argument, neoliberalism's power is not primarily an ideology, political philosophy or an economic theory, but is facilitator of mechanisms to construct artificial conditions of competition with formal properties, and to redraw the boundaries between state and corporate, public and private through the calculations of the market. The market heralded as vanguard for state minimalism as an economically efficient self-correcting mechanism was actively constructed through permanent vigilance and regulatory intervention of by the state.

Electricity restructuring in Australia exemplified neo-liberalism as a practice entailing a 'roll-back' (deregulation) of state functions through the establishment of market and a 'roll-out' of state practices (re-regulation) disciplining through competition policy as a governing rule to maximize efficiency. As Outhred (1998) argue it is competition by regulatory proxy.

*In Australia, the National Electricity Market is a synthetic market. It did not arise naturally but was deliberately created by Australian governments using the tools of microeconomics. Every time you turn on a light switch you are participating in a market designed and run by microeconomics (Steven King, 2010, c.f Haines and McConnell, 2016:4)*

The belief in the disciplining power of competition to maximize efficiency resulted in large, vertical disaggregation of the State owned electricity network, amalgamated into a national wholesale market. Under the microeconomic reforms of the competition policy the State electricity network was transformed across the country by 1980's into thirty major power generating companies which operated over a hundred coal fired power plants (McDonell, 2008).

The state is integral in the production of nature as it ensures the 'politically guaranteed existence' of conditions of productions in the 'desired quantities and qualities at the right times and places (O'Connor, 1998:148) necessary for capital's free appropriation. These conditions of production are identified as 'personal conditions' or

labour power, 'external conditions or natural environment' and 'infrastructure or community capital' (O'Connor, 1998). For example, the state may or may not directly produce the conditions of production (for example naturally occurring mineral deposit). However, the regulatory capacity of state over conditions of production ensure, natural conditions as 'produced and reproduced within definite property legal and social relationships' (O'Connor, 1998:148). As O'Connor argues (1998: 148) This agency can be no other than capitalist state that produces these conditions and/or regulates access to, use of and exit from labour power, land, raw materials and other markets for fictitious commodities which Marx called 'production conditions'

Capital's appropriation of fossil-fuel in the accumulation process through electricity restructuring that would foster competition was mediated by the state activities in form of creation of new set of institutions and regulations to ensure supply and demand are balanced, supply and maintenance of ancillary services and incentives for investments in new infrastructure (Beder and Cahill, 2005). The very fact that competition policy did not contain any rules on greenhouse considerations, reflect the role of state is paramount in the climate change crisis as O'Connor argue (O'Connor, 1998:148) 'it is clear that environmental destruction cannot be laid at the door of capital alone; the state is deeply implicated in the crisis of nature'.

The socio-ecological crisis of capitalism is a product of contradictions which results from capital's dependence without any control over natural conditions (O'Connor, 1998: 164-6). As capital impair natural conditions of productions it creates barriers to further accumulation, it provide impetus for state responses to attempt to sustain capital accumulation by 'developing more control of production conditions' (O'Connor, 1998:167-8)

O'Connor's (1973) contribution in state's contradictory functions in accumulation and legitimation to the workings of neoliberalism is relevant here. The problem of legitimation for the state in neoliberalism gets transformed into the 'problem of competitiveness in the global marketplace'. The state legislates the conditions of

productions i.e. environment, labour, infrastructure policies in accordance to formal democratic procedures and implemented by state bureaucracy which are regarded as legitimate by the public. O'Connor (1973:6) argue government bureaucracies are financially tied to strong capital growth, and thus have a structural imperative to ensure strong capital accumulation in order to reproduce their own existence. The state's legitimacy is linked to the growth of the economy. The structural position of state in relation to natural conditions bureaucratizes and politicizes the production of nature. Conflicts emerge within state system between 'divergent bureaucratic interests', fractions of capital as well as social movements, manifested in constant contestation over goals and instruments of state regulation of conditions of productions.

Electricity restructuring through neoliberal principles ran contradictory to the principles of ecologically sustainable development as the work of drawing boundaries around the market excluded the costs and impacts of greenhouse gas emissions on the environment. The electricity restructuring and the National Greenhouse Response Strategy (NGRS) developed simultaneously. The recommendation proposed by NGRS was that the key to reducing greenhouse gas emissions would to be redress market imperfections by focusing on efficiencies in the production and distribution of energy. At the same time the NGRS was couched in 'no-regret' clause which referred to measures that entail net benefits or at least non net economic losses. The measures and action taken in electricity restructuring ran counter to the NGRS both in principle and in practice.

The National Electricity Market rules contained no explicit environmental, sustainability or greenhouse considerations as the mitigation of greenhouse gases was considered an unnecessary additional set of demands upon supply rules (Pearse, 2007). The environmental effectiveness was justified on the basis of marketization alone as it recognized the pollution externalities from fossil fuel combustion. The environmental groups however, contested the environmental efficacy of national electricity market arguing 'that it failed to take environmental costs into account as greenhouse gas emissions were not factored into the price of electricity generated through the use of brown coal in Victoria' (Hollander and Curran, 2001: 46). The environmental outcome of

businesses depended on forcing them to internalize environmental externalities.

The state and fractions of capital came out as clear beneficiaries and winners of electricity restructuring process. The privatization of electricity yielded just over A\$30 billion as a substantial income to the state (Chester, 2007, 2009; Cahill and Beder, 2005). The redefinition of competition allowed emergence of cross-ownership between generators and retailers belonging to same company and greater market concentration of key firms (Haines and McConell ,2016). The process of electricity industry restructuring resulted in retail electricity prices fallen by an average of 25% in real terms (Outhred, 2000). The fall in electricity prices led to poor environmental outcome as price reductions encouraged consumption and growth of fossil-fuel emissions. Due to the success of supply side electricity restructuring resulting in falling energy prices endangered end user complacency about electricity costs and discouraged effective management of electricity demand (McGill et al, 2006 c.f Outhred, 2006).

The policy measures under Prime Minister Keating were consistent the neo-liberal preference for market conformity of environmental policies except that market conforming was interpreted to mean 'doing nothing to upset business' (Hamilton, 2001:39). The domestic climate change policy saw the development of 'partnership approach'. Governmentality perspective focus on exercise of power by enrolling collective action and consensus for managing or solving a problem, implicating the subjects as 'partners' or 'stakeholders' thereby fostering cooperation, and mutual accommodation (Lemke, 2005:15). The exercise of power in enrolling human and extra human elements in electricity restructuring is evident as the techno-politics of electricity industry operated on mutual dependence of network services, devices, rules mechanisms as appendages to generators, retailers, end-users as all cooperate in a mutually dependent manner (Outhred, 2003).

The failure of the government to adopt policy on energy efficiency exemplifies the exercise of power over end-users of electricity in terms of manipulating an individual to make meaningful contribution towards greenhouse gas reduction. The competition norm



which prioritize economic growth and prosperity goes against the environmental norm as it is linked to two different value orientation of the end-users of electricity. In terms of electricity supply system, exchange values center on sale and purchase of electricity as a commodity whereas use value emphasize on ethic of 'self-sufficiency' which can be achieved efficient energy options.

# Chapter 5: Carbon-Governmentality and John Howard

## Introduction

This chapter critically examines Prime Minister John Howard's policy approach to climate change. The Howard government contrived the UNFCCC principle of 'common but differentiated responsibilities' to restate the case for differentiated emission targets for Annex -I countries, and especially lenient targets for Australia. He demanded differentiated target based on Australia's special circumstances as a fossil fuel economy and natural competitive advantage in coal. In order to persecute his case on climate change he mobilized findings of economic modelling MEGABARE to mislead and frighten people about employment and financial concerns. The ascendancy of 'national interest' indicated Australia's stance on trade and foreign policy as one emphasizing the promotion and protection of national economic growth and the promotion of fossil fuel industries. The political imperative was dictated by fossil led lobby which had representatives at international discussions on climate change.

In articulation to Declan Kuch's (2012) work on Towards a Politics of Regulatory Neoliberalism : a critique of Michael Callons' 'civilizing markets' thesis, PhD Thesis this chapter critically examines the politics of carbon accounting under the Kyoto Protocol and the specific 'Australia Clause' in Article 3.7 in the Kyoto Protocol, which allowed Australia to reduce its 1990 baseline level of emissions to +8% achieved through a phenomenon known as baseline inflation. The construction and contestation of baseline carbon measurement for Australia's land use change is used as a case study of the 'analytics of carbon accounting' in its broad framing of government as calculated activity, undertaken by a multiplicity of authorities and agencies, employing a variety of techniques and forms of knowledge. Carbon accounting is not merely technical but rather has a productive governmental *dispositif* as its functioning and sets into motion a political constellation of practices aimed towards governing of carbon commodities (tCo2e)

through the governing of subjects (carbon accountants, experts, carbon traders). The bundling of human and extra human aspects in the productive management and control of nature was achieved in ways that eased the endless accumulation of capital.

The Howard government's non-ratification of the Kyoto Protocol, in spite of receiving concessions to increase emission marked a temporal shift in Australian climate change politics, from aspiring global leader on climate change under Bob Hawke to a global laggard under Prime minister Howard. The development of the Asia Pacific Partnership as an alternative to the Kyoto Protocol was a way to deflect criticism against the narrow economic and national interests of the Howard government.

## **The Greening of the Howard-Coalition**

The election win for Howard Coalition government in 1996, marked the beginning of a new era in national environmental governance and policy-making as a major shift in balance of power in favour of developer politics. The shift in was due to the changing nature of the Coalitions response to environmental issues. Once in power the Coalition was able to rely on parliamentary alliances, which excluded the Democrats and Greens to get its legislation through the Senate, and this decreased the possibility of cooperative relations between the government and environmental groups. Further the Coalition's normative approach of public choice theory excluded sectional interests in the policy making process - which meant that it is not interest groups defined 'national interest'. The Coalition's campaign slogan in 1996 election "For All of Us" represented that unlike in Labor government environmental groups would have limited access to institutional actors (Economou, 1995).

There was significant transition in national environmental politics after the election of Howard government. The process of growing federalism initiated by the Labor government was seen to complete fruition by Howard Coalition government. Prime Minister Howard followed a strict devolutionary approach as it was based on stronger

ideological and philosophical liberal traditional notions about the need to develop the powers of the state as means of assuring individual liberties. The State jurisdiction was thus given greater latitude to make land-use resource decisions at the expense of Commonwealth influence. Although there were several ground inconsistencies in following such ideals, the main themes of Howard Coalition government's approach in environmental matters were evident in three main policy debates. First the issue of allocation of Telstra privatization funds as to how and to which projects should be distributed through the Saving Our Natural Heritage Policy. Land re-generation programmes were prioritized praised by both conservationists and developers. Second the formulation and finalization of the joint Commonwealth and State forest use agreement through Regional Forest Agreement (RFA) and third, Australia's stance on global greenhouse gas emission levels at the World Climate Summit held at Kyoto in Japan. The ascendancy of Howard's was clearly manifested, as the Foreign Affairs Minister Alexander Downer announced that Australia would not seek to achieve dramatic greenhouse emission reductions.

## **From No Regrets to No-Action at All**

By the time John Howard was elected, the outgoing ALP's ambitious rhetoric of cutting emissions had become incompatible with its modest voluntary, no-cost measures through the Greenhouse Challenge 21C and National Greenhouse Reduction Strategy. However, as Oberthur and Ott noted (1999:71) 'while Australia has certainly not been a climate activist under the previous labour governments, the attitude of incoming Prime Minister Howard towards climate policy was almost hostile'. From the very outset, the government's intention was never to commit to any meaningful action towards mitigation of greenhouse gas emissions.

The Howard government's first masterplan was to contrive the UNFCCC clause of 'common but differentiated responsibility' to re-define Australia's obligations and responsibility shaped by the discourses of economic cost and benefits. The concept of

differentiation was touted by the government for not only creating possibilities for a 'fair' and 'equitable' outcome, but also an outcome that would ensure participation, compliance with the Kyoto Protocol and above all be environmentally effective.

In 1996 Australia was on the UNFCCC truck despite Prime Minister Howard's reluctance as he criticized support for the UNFCCC as an abdication of 'national interest' (Pearse, 2007). Soon after the election win the Howard government mounted a vigorous international campaign to prosecute its case on climate change. At COP1 in Berlin, Australia, along with the USA opposed the mandatory emission reduction targets and stressed the need for participation by developing countries. In July 1996 at Geneva it was agreed that Annex-I countries should adopt legally binding targets to reduce emissions below the year 2000, though without any agreement on a specific level. Australia refused this provision (DFAT, 1997: 33-34). Senator Robert Hill remarked 'For Australia to agree to this part of the statement would be tantamount to signing a blank cheque' (Hill, 1997, National Academics Forum, Opening Address).

From 1996 to 2007, the Howard government adopted several rhetorical positions in framing climate change, in order to avoid substantial measures in reduction of greenhouse gas emissions. Just before the Kyoto Protocol 1997 Prime Minister Howard (1997:1) announced his first policy document on climate change 'Safeguarding the Future: Australia's Response to Climate Change'.

*Since its election the Government has addressed the critical issue of global warming in a way that effectively promotes Australia's national interest. It would not sell out the national interests to take undue responsibilities as we have an obligation to defend and protect Australia interests, Australian jobs and Australian industry' (Howard, 1997:1). We have made it plain that we are not prepared to see Australian jobs sacrificed and efficient Australian industries, particularly in the resources sector, robbed of their hard-earned, competitive advantage.*

The problematization of climate change was stated in terms that would minimize the negative impact on Australia's 'national economy' and 'international competitiveness'. Howard further stressed that policy measures in reducing greenhouse

gas emissions would be developed against the background of 'national economic security' and 'national interest' which became identified with international trade interests, counter to broader concerns of environmental protection and effects of climate change. The Howard government prioritized energy intensive exports and economic survival in a globalized world against domestic policy measures on climate change. The interests of the 'nation' was aligned with the concerns of resource and energy industries, in terms of state interests in economic growth and competitiveness.

Based on the rhetoric of 'economic security' and 'international competitiveness' the Howard government claimed that within the UNFCCC framework of 'common but differentiated responsibilities' Australia should be granted differentiated targets for emission reduction. The position was justified based on the argument that Australia was unique, blessed with a rich supply of natural resources, such as fossil fuel, that wide open plains and good governance has resulted in economic, employment and growth. This resulted in a carbon intensive economy predominantly dependent on exports of fossil fuel. Due to Australia's heavy reliance on fossil fuel, uniform emission reduction targets would impose unfair economic burden on Australia, suggesting that the costs of reducing emissions for Australia would be greater than other Annex-I countries.

The Howard government unashamedly vocalized 'fair share of burden' of emission reduction both nationally and internationally. In order to receive a wider support for its campaign, the government asked the Australian Bureau of Agriculture and Resource Economics (ABARE)<sup>52</sup> to provide estimates of economic costs of cutting emissions based on an orthodox economic model MEGABARE, focused on one-dimensional impacts of climate change policies on the economy and the economic welfare of the Australian population.

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<sup>52</sup> Australian Bureau of Agriculture and Resource Economics (ABARE) is an applied economic research agency specializing in commodities. The economic modelling MEGABARE is a dynamic multi-region, multi-commodity, computable general equilibrium model. Its purpose is to calculate the possible future impacts of policy changes on the global economy. (ABARE, 1997: 2)

Australia, it argued would need to undertake more significant levels of emission abatement than most other OECD countries as the costs of abatement would be higher in Australia due to higher 'business as usual' growth, lack of low cost substitute possibilities from other alternative energy sources and the overall importance and excessive reliance on fossil fuel in Australia economy. Differentiation would result in more equitable outcome. The Australian proposal was not only to include the costs of emission reduction in Australia but also costs to Australia of domestic measures in other Annexe I countries, as losses would be incurred due to changes in demand for Australian fossil fuel exports. To offset lower coal exports, higher emissions should be permitted in Australia. The Australian Financial Review (1997, c.f Bulkeley , 2001b:437) stated:

*Suggesting, that all countries should bear and 'equitable burden' in reducing global greenhouse emissions conflict with the efficiency based 'polluter pays principle'. It is...stretching the issue to argue that lucky resource rich and hence emissions intensive economies should be given a special deal because their abatement costs are high*

## **Construction of the Fossil Fuel Economy and Economic Modelling**

The Howard government unashamedly vocalized 'fair share of burden' of emission reduction both nationally and internationally. In order to receive a wider support for its campaign, the government appointed the Australian Bureau of Agriculture and Resource Economics (ABARE)<sup>53</sup> to provide estimates of economic costs of cutting emissions based on an orthodox economic model of MEGABARE. The model was focused on one-dimensional impacts of climate change policies primarily on the economy and economic welfare of the Australian population.

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The economic modelling of ABARE demonstrated that between 1990-2020, the non-Annex-I countries were expected to increase their emissions and eventually overtake the Annex-I countries. So the findings recommended that 'all countries must be involved in emission abatement if any significant and sustained reduction in global emissions were to be achieved' (ABARE, 1997:3). The model reinforced negative implications of emission reduction policies on the economic welfare<sup>54</sup> of Australia as emissions restrictions would force producers and consumers to move away from fossil fuel to costly alternatives, leading to a decline in returns to capital, real wages, income and so on. Most importantly the findings exaggerated the issue of 'carbon leakage' justifying that if all countries are not involved in reducing emissions, Australian industries could move offshore where energy production is cheaper. The model assumed that 'reducing emissions would adversely affect Australia's trade competitiveness and economic growth' (ABARE, 1997:4)

MEGABARE was a computable multi-country and multi-commodity model which provided numerical estimates of impacts on the structure of trade and industry (ABARE, 1997). Although the model was developed to analyze climate change policy, the problem of climate change was viewed as a trade problem rather than an environmental issue.

*The model MEGABARE is a dynamic general equilibrium model of the world and we have tackled the problem as a trade problem. We haven't tackled it as an environmental problem, we have tackled it as a trade problem..MEGABARE is an effective trade model (ABARE, 1997, c.f. Bulkeley, 2001a: 162-163).*

MEGABARE calculated and quantified the impacts of emission reduction scenarios

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<sup>54</sup> ABARE and DFAT (1995:12) stated 'In selected Annex I countries, welfare changes are driven by three factors: the extent of reduced output in fossil fuel and fossil fuel intensive industries, the costs associated with switching away from carbon rich fuels; and changes to import and export prices resulting from trade impacts of abatement policies



on key economic well-being indicators such Gross National Product, population growth, emission intensity of economic activity, fossil fuel exports and emissions intensity of exports. The choice of parameters and assumptions fed into the model, influenced the results generated by the model as 'any computer model is only as good as the assumptions fed into it' (Diesendorf, 2000). The assumptions of MEGABARE were sought to project the costs of mitigation options, combining a general equilibrium model to weigh the costs and benefits of taking action against emissions reductions. MEGABARE modelling was based on assumptions such as: the inclusion of greenhouse gas emissions as a by-product of different economic activities, the summing of emissions on a regional and a global basis, equations to test policies for reducing growth in emissions; the inclusion of the 'technology bundle' instead of energy substitution, and inclusion of demographic module to determine population and labour force growth rates endogenously (ABARE, 1997). The focus on economic assumptions and impacts of the model in terms of trade and industry was conducted at the cost of excluding impacts of climate change on species survival, ecosystems conservation and protection. The model overshadowed 'environmental reality' with an 'economic reality' demonstrating that the greatest threat to Australia from climate change was economic.

The findings of MEGABARE was focused on reinforcing Australia's past, present and future locked in the fossil-fuel economy as indelible, constructing an economic imaginary of 'fossil-fuel forever'. The model was constructed in a way to demonstrate that Australia's international competitive advantage lies in the fossil fuel industry as fixed and given and therefore is an optimal course for both Australia and rest of the world (Hamilton, 2001). It exaggerated the costs of greenhouse gas reduction measures, defined a 'business as usual' scenario with high growth in emissions, excluding the options of cheap renewable technologies to enable fuel switching.

The constitution of fossil-fuel economy is closely related to Foucault's (1991) identification of the conception of government characterized by large-scale management of population in eighteenth and nineteenth centuries and associated with these practices was the emergence of 'economy' as a new object of political management. The new

artefact of economy came into being within broader social and political changes as a field of operation or socio-technical practice for the exercise of new powers of planning, regulation, statistical enumeration, and representation. As Mitchell argues (1998:92).

*The power of economy as a discursive process lies exactly with fixing this effect of the real (economy) versus its representation. The proliferation of models, statistics, plans and programmes of economic discourse all claim to represent the different elements and relationships of a real object, the national economy. Yet this object, as one could show at length is itself constituted as a discursive process, a phenomenon of values, representation, communications, meanings, goals and uses, none of which can be separated from or said to pre-exist their representation in economic discourse.*

The computerized modelling of MEGABARE consisting of numerical and statistical quantifications enabled the standardization, categorization, collection and storage of vast amounts of data used to simulate the global economy in macroeconomic models (Hamilton and Quiggin,1997). The quantification model of MEGABARE deliberately excluded substitution of coal fired energy with that of renewable energy as it assumed that substitution would shift global production of a commodity between countries or shift production from one technology to another. According to ABARE this does not and cannot happen in the 'real' world. The MEGABARE model was structured to 'represent' the 'lack of smoothness' in technology substitution (ABARE, 1997: 34).

Mitchell (2013) articulates economy as a space of calculation was made possible by availability of plentiful, cheap production of oil in Middle East before or after the Second World War. The cheap abundant flow of fossilized energy produced ways of thinking and imaginations about economic growth with no limits. The economic modelling of MEGABARE produced similar ways of thinking as Hamilton and Quiggin noted (1997:20)

*The MEGABARE model is similar to the Limits to Growth model, except policy conclusions are reversed. Like the Limits to Growth model, MEGABARE yields the conclusion that continued economic growth, at least in Australia, requires unsustainably rapid rates of exploitation of energy and mineral resources. Unlike the Club of Rome, however, ABARE*

*draws conclusion that unsustainably rapid rates of exploitation must be allowed to proceed. As with Limits to Growth, the conclusions of MEGABARE are based on modelling decision to exclude from consideration of possibilities of technological progress or substitution between factors of production.*

MEGABARE posited endless fossil fuel economic activity, building its own image of rationality and efficiency and reconfiguring social relations. The model overstated the costs of abatement measures for Australia and underestimated the benefits of mitigation (Hamilton, 1997; Diesendorf, 1997). Concerns were raised by several heterodox economists who questioned the bases of calculations for costs in net present value terms, as it relied on the aggregation of small year costs into one figure.

The orthodox, one-dimensional window of the MEGABARE model is particularly interesting as the MEGABARE analysis emphasized on the incommensurability of economic objectives and environmental values so much so that the principle of a 'no-regrets' option completely disappeared. According to Hamilton (1997: 55 c.f Gillespie and Burns, 2006)

*The absence of no-regrets measures arises from the assumption that the economy is operating on the production frontier, and this reflects the ABARE view that markets work perfectly. Clearly, if there are no no-regrets measures to reduce emissions in the Australian economy than any emissions reductions required will come at a higher cost. It is working noting that while the Government bases its international arguments on cost-estimates that assume the absence of no-regrets reductions, the Government's domestic greenhouse strategy is built entirely on the existence of no-regrets measures.*

The win-win potential articulated in the 'no-regrets' discourse and warning of potential economic costs of meeting the climate change reduction target demonstrated a contradiction in the integration between all economic and environmental objectives. The contradiction was made compatible by reconciling economic objectives with that of environmental values and by internalizing of nature into capital through the temporal and spatial scales over which costs and benefits are to be weighed that is benefits

accruing to industries and the wider community and from present to some future.

The monetary costs and benefits of 'national economy' attained a supremacy over non-calculable values of present, distant and future environments. The negation of 'no-regrets' for business as usual was promoted by the resource based industries who influenced and steered the policies of the government and rejected any measure which threatened the resource-based nature of Australian economy. The issue of climate change was used a site for workings of power of government and accumulation of capital, and at the same time it was extended to the Australian society and population as it became synonymous with the stakes of continued fossil fuels use and resource processing. MEGABARE was particularly adopted to analyze the effectiveness and equity of uniform emission reduction targets and its impact on the economic welfare of Australia, with a purpose to constrain the range of policy alternatives available to government in mitigation of greenhouse gas emissions.

The economic modelling of MEGABARE received significant press coverage from national newspapers such as *The Australian* and *The Sydney Morning Herald* newspapers reporting that incomplete and 'filtered' information was used by the Federal government against action on global greenhouse emission and that Prime Minister Howard had ignored requests for a meeting with the heads of Greenpeace, WWF and Australian Conservation Foundation (*The Sydney Morning Herald*, 1997, 24 November). The Australian government presented the findings as strategies to mislead and frighten people due to employment and financial concerns. The model predicted that with emissions reduction tens of thousands of jobs would be lost and that each Australian would lose \$ 9,000 from their savings account and that wages would be cut by 20% below business as usual levels by 2020 (Hamilton, 2001).

Skepticism around the credibility and neutrality of the MEGABARE model occupied center-stage as it was extensively funded by fossil fueled industries such as Exxon, Texaco, Mobil and other coal and aluminum industries (Hare, 2001). The modelling activities of ABARE were submitted for investigation by Australian

Conservation Foundation (ACF) to the Commonwealth Ombudsman revealing lack of validity and credibility of the model<sup>55</sup>. The Ombudsman concluded that Government's climate change analysis was 'compromised' and that ABARE management had displayed 'poor judgement' (Commonwealth Ombudsman, 1998). In a press release by the Australian Democrats, Senator Meg Lees remarked 'The Howard government's pigheaded defense of the ABARE greenhouse models ripped apart by the Commonwealth Ombudsman in a damning report today, has jeopardized the credibility of the nation' (Australian Democratic Press Release, February 3, 1998 c.f Hamilton, 2001:60).

The industry-funded model was used by the government as the intellectual jackhammer to promote Government's position of Australian national interests in terms of the security of a fossil fuel energy intensive economy. The 'economic reality' as constructed and projected by ABARE was collectively negotiated and brokered, based on the institutional authority and objective rationality of the government, economic experts, bureaucrats and was closely connected to the vested interests of coal industries and government. Mitchell argues (2005:139) 'the material world of government, corporations, consumers and objects of consumption are arranged, managed, formatted and run with the help of economic expertise' who manipulate and model the world based on quantitative calculations. The assumptions fed by the economic experts were one-dimensional which resulted in discrediting any greenhouse response would be necessarily expensive and harmful for Australia. As Hamilton correctly states (1997:61)

*...modellers must make a series of assumptions about how an economy works and which factors are important to include in a model. The choice of assumptions essentially determines the results that emerge from the end of the modelling process. These facts mean that economists who build and use models can effectively determine the outcome by changing the model in sometimes obscure ways.*

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<sup>55</sup> The Ombudsman's report concluded that the funding structure and administrative practices adopted by ABARE were open to accusations of undue influence by vested interests (Commonwealth of Australia, 1988:3). The MEGABARE committees were found to comprise limited range of views and expenses and to be subject to an exclusionary membership fee.

## Domestic Response to Climate Change

Throughout 1996 and 1997, Prime Minister Howard's mission was to build a discourse coalition or 'Circle of Trust' (Pearse, 2007) comprising economists, ministers, bureaucrats, fossil-fuel lobby, think tanks, media in order to successfully formulate a climate change policy based on immediate economic impacts and costs of climate change abatement measures for GDP. The outputs of orthodox economic models determined the public and political understanding of the alleged impacts of emission reduction targets for Australia's economy. The insular view of 'national interest' defined in terms of trade interests and international competitiveness became the anthem of the entire country and played a determining role in national climate change policy (Christoff, 2005).

At the same time the 'whole of government' approach (Hamilton, 1997:73) adopted by the Howard government saw Minister for Environment and Minister for Resources and Energy all becoming untiring defenders of fossil fuel industries, particularly coal. The federal bureaucracy was gripped by dogma of 'export promotion' as central to Australia's economic survival in a globalizing world. The fixed hegemonic belief that Australia's national interest lay in trade promotion of energy exports to certain regions of the world became the order of the day and there was no room for any other balanced assessment. As Hamilton describes it (2001:86), 'outside critics were vilified as traitors, a tactic usually associated with authoritarian government'. This was further accentuated by the Department of Foreign Affairs and Trade (DFAT) publication of White Paper on Australia's foreign and trade policies titled *In the National Interest* in 1997 which promulgated the vision of 'clean coal' as the vehicle of economic growth in the Asian region well into the next century.

Prime Minister Howard and his 'Circle of Trust' made relentless efforts to prosecute its case on climate change, backed by continuous skepticism and climate change denialism, claiming climate change as 'junk science' (Pearse 2007:140). Australia's international position was shaped with a consideration of its domestic politics and actors such as the environmental movement, fossil fuel lobby, state governments,

general public and so on.

The Howard government's domestic policy measures towards Climate Change took place in three waves: In November 1997, the Prime Minister announced 'Safeguarding the Future', in November 1999 'Measures for a Better Environment' and in 2004 The Energy White Paper (EWP) called as 'Securing Australia's Energy Future'.

The defining characteristics of the policies initiated by Prime Minister Howard can be summarized as: inaction towards mitigation of climate change, preference for voluntary and market friendly mechanisms, and most importantly protection towards emission intensive industries.

## **Safeguarding the Future Package**

On November, 1997, Prime Minister Howard announced a suite of domestic policy measures just before the Kyoto Protocol. It was a strategy of the government which aimed to boost the credibility of Australia at the Kyoto negotiation against the popular perception that Australia was doing nothing to restrain growth in emission. The policy document formalized and legitimized Australia's role and goals at the COP 3 at Kyoto.

Prime Minister Howard (1997: 1) began his speech saying 'we are not prepared to see Australian jobs sacrificed' and 'there is now clear evidence that Australia's campaign for equity and realism has won wider support'. He further (1997:5) claimed that in spite of challenges in emission reduction 'we are still committed to playing our part in cutting emissions and announced 'the largest and most far-reaching package of measures to address climate change ever undertaken by any government in Australia'.

However, in reality policy measures announced by the government were all aimed at the reduction of the burden of emission reduction on heavy polluters, and favoured the development of fossil-fuel based industries. It included enhancement of voluntary partnerships between industries and government in emission reduction, commitment to government spending \$180 million to a variety of greenhouse response measures, emphasis on sinks instead of reducing emissions and funding to improve competition in

the energy market.

## Partnership Approach

The evolution of domestic climate change policy under Howard government re-ignited the partnership approach initiated by Prime Minister Keating. As Senator Hill (1997 :127) stated

*The Federal Government cannot address Climate Change alone: Our national contribution to the global emissions results from the behaviour of thousands of industries, all levels of government, and millions of individual Australians. This is a task for all Australians.*

Howard focused on a partnership approach where emission reduction would be addressed from many sectors such as 'residential, industry, transport, energy, agriculture, forestry and government operations in an integrated, effective and above all fair way' (Howard, 1997:4). His rhetorical claim was 'we are prepared to ask industry to do more than they may otherwise be prepared to do, that is, to go beyond a 'no regrets', minimal cost approach where this is sensible in order to achieve effective and meaningful outcomes' (Howard, 1997:4).

During this period a substantial reworking of domestic greenhouse policy was conducted by the International Committee on Ecologically Sustainable Development (ICESD, 1997) leading to the National Greenhouse Strategy which came into effect in 1998. The engagement of stakeholders and the community in identifying and assessing opportunities for appropriate and effective greenhouse response actions was essential to the development of an effective, credible and broad-based Strategy. The new Strategy reflected a strong commitment to cooperative approaches to address greenhouse issues, utilizing partnerships between governments and community (ICESD, 1997). Included in the Strategy was funding of \$13 million over 5 years to Cities for Climate Protection



Australia Program. The Program was to 'assist local government to identify ways of cutting greenhouse gas emissions' and enable local government to involve their community in helping to achieve these reductions. In the same year the government established the Australian Greenhouse Office (AGO). The AGO drew together Department of the Environment, Industry, and Technology and Primary Industries and Energy to run the program jointly and it facilitated the establishment and monitoring of cooperative agreements between members of industry and government. Without any legislative backing this programme was nothing else but a 'greenwash' as the invincibility of the growth paradigm was intact in the implementation plan of the programme.

## **The Kyoto Protocol- Governing the Carbon**

The Kyoto Protocol in 1997 specified Annex I countries were committed to a reduction of greenhouse gas emissions by at least 5.2 per cent below the levels in 1990 during the first commitment period 2008-2012. At the same time Article 3.3 allowed Annex I countries to account for emission removals by 'sinks' resulting from direct human-induced land-use change and forestry activities limited to afforestation, reforestation and deforestation since 1990 against which headline reduction targets were negotiated (UN, The Kyoto Protocol, 1997). Whilst UNFCCC in 1992 framed climate change as a 'global' issue, debates in Kyoto were caught between de-territorialization of climate change as a global issue and at the same time a re-territorialization of global carbon cycle into national carbon inventories that is national governmental frameworks of carbon accounting and management (Lovbrand & Stripple, 2006).

The Kyoto Protocol proposed trading of carbon emission reductions across different countries based on carbon accounting method to create a national greenhouse gas inventory which at the same time assigned responsibility for emissions. The Protocol's establishment of three flexibility mechanisms such as Emissions Trading (ET) Joint Implementation (JI) and Clean Development Mechanism (CDM), were intended to create international tradeable 'equivalents' in the form of end of pipe, greenhouse gas

'saving' projects to generate credits for Annex I countries. The carbon market reduction of emissions through carbon trading indicated 'de-territorialization' in terms of low mitigation costs by being able to buy cheap mitigation permits from other countries, particularly developing nations. Global climate politics became centered on 'the representations of climate space as a global and de-territorial on one hand and political practices that re-territorialize the climate on the other' (Lovbrand & Stripple, 2006:217). Governing climate change was accomplished in practice through accounting categories including 'national carbon sinks' (Lovbrand & Stripple, 2011). The Kyoto Protocol permitted Annex I countries to invest in 'carbon sinks' rather than reducing emissions from source and at the same time receive carbon credits through flexibility mechanisms. Flexibility through sinks as well as carbon credits allowed carbon intensive economies to effectively avoid any inconvenient structural changes within these countries. Further this culminated in 2005 with the proposal for Reduced Emission from Deforestation and Degradation (REDD+) which allowed Annex I countries to receive credits in investing sinks in developing nations.

In terms of the de-territorialization versus re-territorialization of climate space Kuehls (1998:19, c.f Lovbrand & Stripple, 2006:234) notes 'the modern sovereign state is a particular political construction for which environments do not come ready made. The task of moulding environment to fit the sovereign state is that of government'. The tradeable permit solution is not only a market approach but it is a 'command and control' approach as the government not only issues property rights of emission permits and defines how scarce. The de-territorialization and re-territorialization of climate change was closely linked to the notion of the economy; as on one hand there was a dispersal of national economy and on the other hand there was supra-national, international network of finance, investment, employment, international trade, competitiveness and so on (Hindess, 1998; Rose, 1999). As Timothy Mitchell argued (1998:90-91) 'the economy' is a powerful tool in political discourse which emerged as a result of the re-imagination of the national state and re-imagination of the international order'. The repertoire of procedures in carbon accounting such as measuring, reporting and verifying site specific representation of carbon fluxes such as 'the national carbon sink' and 'the global carbon

economy' centered on the repertoire of procedures such as are devices to turn one tone of reduced carbon (tCo2-e) into thinkable, credible and tradable commodity. As Miller and Rose (2008, c.f Lovrband and Stripple, 2009) argue a governing sphere must be represented and depicted in a way that can enter the sphere of conscious political calculation. Through carbon accounting the climatic system is constructed as an administrative domain, amenable to certain forms of political and economic rationality.

## **The Politics of Carbon Accounting at the Kyoto Protocol**

Since the inception of global climate change governance, the question of responsibilities and fair share of burden and distribution of costs for doing something about it, had been at the crux of multilateral negotiation process. The call for binding targets as 'quantified limitation and reduction objectives' (QERLROs) within the specified time frame', an approach described as setting the 'targets and timetable' for emission reductions formed a great source of disagreement at the Kyoto Protocol in 1997. During negotiations at the Kyoto, US and other JUSCANZ<sup>56</sup> countries (particularly Canada, Australia and New Zealand) proposed that quantitative reduction targets must be negotiated on the basis of a net accounting system through which emissions would be subtracted by amount of carbon removed from atmosphere through domestic sinks. As a result, the greenhouse gas removal by sinks emerged as a central component of flexibility mechanisms in the Protocol. Since the Kyoto Protocol the interpretation of sink was made limited to

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<sup>56</sup> In the lead up to the Conference of Parties (COP 3) at Kyoto, Australia coordinated with other JUSCANZ countries (Japan, United States, Canada, Australia and New Zealand countries) and made every effort to use international diplomatic strategies and form alliances with other international counterparts to negotiate and win support to its differentiation proposal. In the post Kyoto period, the 'umbrella group' became a success of the stranding JUSCANZ group following the inclusion of countries such as Norway, Russian Federation, Ukraine. Hiding under the umbrella, Australia advanced the proposal for 'negotiated differentiation' a process in which national targets and timetables take into account the core economic indicators which influence abatement costs such as growth and emissions intensity of GDP, emission intensity of exports and fossil fuel trade as a percentage of GDP.

greenhouse gas removals by land use change and forestry activities (LULUCF)<sup>57</sup>, and such as afforestation, reforestation, deforestation, revegetation, forest management, cropland management and grazing land management (UNFCCC, 1997, Article 3.3)<sup>58</sup>.

National carbon accounting underpinned multilateral negotiations of greenhouse gas mitigation measures at the Kyoto Protocol, as the purpose of it was to represent scientific knowledge of industrial and land-based greenhouse gas emissions and sequestrations within the territories of the nation-states that were parties to the Protocol. Carbon account numbers documented and informed annual changes in greenhouse gas inventories from natural and human interferences including those resulting from policy interventions of the government. The effective governance of the Protocol was based upon the stated ambition to reduce greenhouse gas emission attributable to policies by the government which may provide a framework and incentives for implementing activities with that goal rather than occurring through economic or natural processes outside the control of government.

Lovbrand and Stripple (2011) draw attention to ‘an analytics of carbon accounting’ in its broad framing of government as any more or less calculated and rational activity, undertaken by multiplicity of authorities and agencies, employing variety of techniques and forms of knowledge. The production of carbon artefacts was performed by human and non-human entities and processes such as experts, satellites, remote sensing to make it visible and calculable. This bundling of human and non-human entities and processes provide boundaries to economic transactions and facilitate in the

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<sup>57</sup> LULUCF is the acronym for Land Use, Land Use Change and Forestry refers to changes to land that enact carbon stock changes such as conversion of natural ecosystems to permanent croplands, conversion of natural ecosystems for shifting of cultivation, conversion of natural ecosystems to pasture, abandonment of cropland, abandonment of pastures, harvest of timber, and establishment of tree plantations (Watson et al, 2000, p.1.2.111)

<sup>58</sup> Article 3.3 of the Kyoto Protocol specified ‘The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human induced land use change and forestry activities limited to afforestation, reforestation and deforestation since 1990 measured as verifiable changes in carbon stocks in each commitment period shall be used to meet the commitments under this Article of each Party included in Annex I (Watson et al, 2000:18)

creation of socio-material networks; for example, scientific knowledge of nature is a socially embedded practice which is intertwined in the fabric of rule and authority. As Ingmar Lippert rightly notes (2011:7) 'carbon emissions came into existence through a socio-technical network...based on a cultural setting that configured humans and non-humans in a specific way ...without them carbon emissions could not have been enacted'.

National carbon accounting reflects green governmentality (Luke,1995) of nature where governing of carbon cycle is based on the idea that nature can be controlled by human interference, through a system of knowledge and thought, fully described and predicted by science. Green governmentality depicts the image of nature which function according to the order, certainty and predictability of physical laws, controlled by the expert management such as science and technocratic-administrative state (Luke, 1999, Lovbrand & Stripple & Wiman, 2009).

Paul Edwards in his work *A Vast Machine* (2010) compellingly demonstrate how the visibility of climatic system relied on complex, contested and always re-negotiable knowledge infrastructures comprising robust networks of people, artefact and institutions that generate, share and maintained specific knowledge about human and natural world. The expert discourse of control of nature developed together with technology such as satellites, remote sensing provided the infrastructure to the experts to monitor, report, verify and even manage earth's hydrological flows, and human patterns of pollution and environmental degradation (Lovbrand and Stripple, 2009). Carbon accounting is similar to what Litfin (1999:77-78) terms as 'big' science projects of the Cold War era 'by generating unprecedented quantities of geographical data, satellite surveillance of 1960s rendered states, territorial space transparent and were thus primarily used as a protection against military intervention'. As Lovbrand, Stripple and Wiman (2009:12) rightly argues, the development of the UNFCCC relied upon 'systematic investigations into the truths of the natural world will foster a more rational human management of the environment'. According to Lovbrand and Stipple (2006, c.f Kuch, 2012:128) 'Modern territoriality is closely linked to the bureaucratic powers of state to measure, survey and visualize' and the comprehensive calculation of Earth's sources and sinks are not only about 'representation alone but are tied to national industrial competition and economic government '.

## Politics of Carbon Sinks under the Kyoto Protocol

The Kyoto Protocol provided ‘assigned amounts’ of emission reduction targets to each industrialized country party; taking 1990 as its base year, the countries pledged to meet their reduction targets during the first commitment period 2008-12. Due to this clause the national carbon accounts became critical in negotiating emission targets.

The effective governance of climate change through the UNFCCC was therefore based on engagement of the ‘experts in complex methodological process to adjust the measure of carbon fluxes to territorial borders’ (Kuch, 2012:129) for development of national inventories to quantify and report industrial emissions and terrestrial greenhouse gas fluxes within national and territorial boundaries. The classifications and reporting processes were developed by climate experts to report national inventories of sources and sinks of greenhouse gases in a uniform manner to the UNFCCC secretariat in Bonn<sup>59</sup>. However, the responsibility of reporting emissions that what was emitted and sequestered within respective national territory, remained with each signatory state, demarcating between representation of carbon fluxes and negotiation of economic issues (Kuch, 2012). The scientific knowledge of the global carbon cycle had to be broken down into geopolitical grammar of the nation-state as it became necessary to know how much carbon was emitted and sequestered within respective state borders (Lovbrand and Stripple, 2009). The material production of national carbon accounting was part of the performance of state legitimacy and an assertion of territorial sovereignty in international negotiations of climate change governance.

The politicization and scientization of the sink concept at the Kyoto negotiations

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<sup>59</sup> Article 4 para 1(a) of the UNFCCC states that parties must, ‘develop, periodically update, publish and make available to the Conference of Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals of sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of Parties.

took a new turn when a further set of reporting requirements were added to the Kyoto Protocol on standardized definitions, units and time intervals. Disputes over accounting definitions, definitions of the sources and sinks, what was specified as direct human-induced activities, what are optional and would be mandatory, were all the subject of intense political negotiations. As Lovbrand and Stipple (2011 :193) argued ‘The development of standardized definitions and accounting methods for changes in terrestrial carbon stocks made it possible to compare carbon measures across space and time and to establish ‘national carbon sink’ as a credible spatial organization climate governance’.

The distinction between ‘direct human induced’ and ‘natural fluxes’ of carbon is a blurry one. Therefore, designating ‘human induced’ carbon uptake opened up the entire biosphere up for grabs, to carbon property claims since every part of the globe is affected by human activity. As Watson et al rightly note (2000:79:80) ‘the phrase ‘human induced’ has no scientific meaning’. In order to reconcile the irreconcilable, the IPCC suggested a way out to arbitrarily define ‘direct human induced activities’ through subjectification and framing of actors, those resulting from decisions of ‘land managers’ and professional ‘afforesters and ‘reforesters’ who were held accountable. The calculation, classification and monitoring of land use change relied on experts, socio-material networks, along with technology such as satellites, remote sensing which became critical in order to interpret the distinction between natural and anthropogenic or ‘direct human induced’ interference with the climatic system. National inventories were not simply about objective scientific facts of quantification, measurement and monitoring of industrial emissions but a political space where power and authority were exercised. Thus carbon accounting can be seen as specific governmental *dispositif* implementing a site of veridiction regime of truth based on market competitiveness, which helped translate the visibility of climate crisis into manageability (main feature of neoliberal phase of governmentality). Different reporting and accounting parameters provided different opportunities for national government to manipulate their targets in their own ‘national interests’.

## The Curious Case of Australia Clause

In accordance with the Kyoto Protocol, Prime Minister Howard's statement of 20th November 1997 tasked the Australian Greenhouse Office (AGO) with establishing and implementing 'a consolidated package that will provide comprehensive framework and scientific services necessary to account for Australia's emissions reductions and sink enhancement programs (in land based sources and sinks) to an internationally credible standard' (National Carbon Accounting System, 1999, AGO, Technical Report Vol I: 1). As a part of Prime Minister Howard's announcement of \$180 million package of response measures to facilitate national reduction of greenhouse gas emissions, the purpose of a comprehensive accounting framework known as National Carbon Accounting System (NCAS) was to support documentation and reporting requirements under the UNFCCC. As it was stated, 'to provide a complete accounting and forecasting capability for human induced sources and sinks of greenhouse gas emissions from Australian land based systems for developing an optimum greenhouse policy respond to the requirements of UNFCCC and its instruments' (AGO, 1999).

The interpretation of rules governing how carbon sinks were accounted for and the methods by which they are counted had a direct bearing on a nation-states emission reduction commitment and consequently their economic competitiveness. The technical expertise reflected in the Kyoto Protocol accounting rules were shaped by hegemonic interests of a country as exemplified in the last minute insertion of Article 3.7 proposed by the Australian delegation on December 11 1997. It specified that industrialized countries were entitled to claim reductions in greenhouse emissions from land clearing towards their quantified emission reduction targets. As Australia was the only party with declining land clearing emissions since 1990, it was dubbed as 'government's victory' in the last minute insertion of 'Australia Clause' as Article 3.7 in the Kyoto Protocol<sup>60</sup>.

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<sup>60</sup> Those parties included in Annex I for whom land-use change and forestry constituted a net source of greenhouse gas emission in 1990 shall include in their 1990 emission base year or period the



In 2007, Prime Minister Howard claimed that Australian was meeting its targets as he said 'Kyoto is not the answer but unlike everyone else, we are meeting our Kyoto target' (John Howard, c.f Pearse, 2007). Prime Minister Howard's periodic proclamation that Australia is one of the very few countries meeting its Kyoto target of 108 percent, an increase of 8 percent in emissions over the 1990 baseline. However, this grand assertion was the result of large loophole of 'Australia Clause' which allowed Australia to inflate its 1990 baseline emissions to get the desired result (Hamilton, 2001, Hamilton and Vellen, 1999). The Howard government threatened not to sign the Kyoto Protocol unless amendments were made to the rules regarding land use, land use change and forestry(LULUCF) to accommodate Australia's national and special interests. The Australian delegation demanded that deforestation or land use change (LUC) emissions to be included in its base year (1990) as emissions from this sector had fallen by -50% from 1990 to 1997 (Mackintosh, 2012). So if Australia was allowed to include emission from deforestation in its base year it would receive credits for reductions which had already occurred. In order to monitor and record the changes in Australia's greenhouse emissions, the government established a complex accounting system called Australian National Greenhouse Accounts, based on the Kyoto Protocol specification that parties to the Protocol must submit an inventory of greenhouse emissions. The 'assigned amount' or emission reduction target was allocated to each country based on its inventory submission and its pledges for increasing or reducing emissions. The Protocol's reporting requirements for human induced greenhouse emissions were in six sectors: energy (including stationary energy and transport); industrial processes, solvent and product use; agriculture; waste; and Land Use, Land Use Change and Forestry (LULUCF).

Hamilton and Vellen's (1999) detailed analysis of the implications of 'Australia Clause' was based on 1996 inventory of greenhouse gas emissions published by the

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aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purpose of calculating their assigned amount.

Australian government in 1998, which included revised estimates of emissions for the years 1990-1996. The data was revised on the basis of satellite data which revealed that Australian inventory had consistently excluded the emissions from land use change prior to its claim that land use change was vital issue for Australia in Kyoto negotiations. The government stated that emissions estimated from land use change (LUC) was uncertain and so it was excluded from national totals, and this 'uncertainty' was used by the government as a valid excuse to obscure the total emission picture by manipulating the data (Hamilton and Vellen, 1999:146).

As a result of the 'Australia Clause', the government pledged to increase 8% of 1990 base year emissions by 2012 commitment period based on baseline inflation. These estimates were based on Australia's Kyoto Protocol carbon accounts, which required parties to submit an inventory of greenhouse emissions. The 'assigned amount' was allocated based on these inventories.

The inclusion of the Australia clause in Article 3.7 of the Kyoto protocol opened a large loop-hole which government was able to exploit in order to ensure allowable emissions from fossil fuels. The decline in emissions from LULUCF had cancelled out the increase from the fossil fuel plus sector (Hamilton, 2001). It was estimated that under various scenarios of land use, land use change and forestry (LULUCF) emissions from 'fossil fuel plus' could have still increased from 22-33 percent of 1990 levels while Australia still met its overall Kyoto target. The reason was apparent as to why the Howard government insisted the last minute inclusion of Australia clause at Kyoto as it gave Australia at least 120 percent to 133 percent increase in emissions (Hamilton, 2001, Hamilton and Vellen, 1999). The deceit and double standards of the government were reflected in a statement released by Prime Minister Howard in November 1997, when he declared that existing policies were expected to restrict emissions, other than those from land clearing to 18 percent of 1990 levels and reduce land clearing emissions to 29 million tonnes by 2010, both of which were government policies then Australia could have agreed to a target of 100 percent of 1990 emissions by 2008-2012. So while Australia's 'fossil fuel plus' emission was able to increase by up to 26 percent, other

countries were cutting their fossil fuel emission (Hamilton and Vellen, 1999:151). The Australian clause demonstrates the extreme sensitivity of estimates of land-clearing emissions to technical measurement decisions.

Hamilton and Vellen (1999) estimated that the inclusion of Article 3.7 gave the Australian government a 19% windfall in emissions target saving the country at least \$ 10bn over course of the Kyoto commitment period (Victor, 2001:63). Prime Minister Howard called the outcome of the Kyoto negotiations as splendid. Senator Robert Hill exclaimed 'it's a good day for the environment but it's a good day for jobs as well' (c.f Pearse, 2007:74).

## **The Analytics of Carbon Accounting: Mapping, Measurement and Making a National Carbon Sink**

The 'epistemic chaos' (Lovbrand, 2008) i.e. disputes over certain definitions, accounting methodologies and additional LULUCF activities generated by the sink concept became further politicized when the JUSCANZ countries argued at COP 6 at Hague that an uptake in forest growth meant that it would not need to make significant reduction in industrial emissions. Articles 3.3 and 3.4 in the Kyoto Protocol specified that the reporting of carbon fluxes from land use and forestry activities was to take place according to two set criteria which were:

*Under Article 3.3 a) Annex I countries were to report deforestation and reforestation since 1990s and under Article 3.4 b) industrialized countries were allowed to account for forest management, cropland management, grazing land management and revegetation.*

The definition of forest was crucial in determining the meaning of the terms deforestation, reforestation and afforestation. The Protocol's stringent definition of a forest was 'land with tree crown cover of more than 10% and area of more than 0.5 ha.

The trees should be able to reach a minimum height of 5 m at maturity in situ' (IPCC, Good Practice Guide, LULUCF). The strict definition and classification of forest conversions, clearing and regrowth of forests (afforestation, reforestation, and deforestation) was in order to make consequent emissions reductions commensurable and ultimately amenable to trading<sup>61</sup>. The bias towards trees formulated at the Protocol is apparent as it excluded shrubs, wetlands and sparser forms of vegetation which could be cleared, as it was difficult to monitor through remote sensing technology (Penman 2003, Watson et al, 2000). The politicization over what described and defined as a forest was made apparent when civil society actors explained that the JUSCANZ 'pick and choose approach' to forest definition would allow large forest nations in the Northern Hemisphere to claim credits for activities on land which could not ordinarily be described as a forest' (CAN, 2000, c.f Lovbrand, 2008:16).

The mapping, measurement and monitoring a national carbon sink in Australia was delegated to National Carbon Accounting System (NCAS) established by Prime Minister Howard in 1997; the primary objective of NCAS was to lend support to international reporting requirements under the UNFCCC. The IPCC Good Practice Guide enumerated three suitable approaches for identifying and representation land areas needed to estimate carbon fluxes (i.e. emissions and removals of greenhouse gases associated with land use, land-use change and forestry activities (LULUCF)<sup>62</sup>.

Australia's carbon account was based on a national scale multi-temporal remote sensing data-sets developed by National Carbon Accounting System (NCAS) which was calibrated using surveys or ground reference truth data by experts (IPCC Good Practice

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<sup>61</sup> The inclusion of market linked Reduced Emissions from Deforestation and Degradation (REDD) and enhance forest sinks in developing countries collective known as REDD+ was agreed by parties at COP 13, in the post 2012 international climate change regime. As Fogel (2004:111) argued 'standardized carbon units, produced through sequestration projects in standardized developing countries' is aimed at 'biodiversity disaster'.

<sup>62</sup> For Detailed Analysis of these approaches in making of carbon sinks refer to Declan Kuch (2015) 'The Rise and Fall of Emissions Trading'.

Guide, 2003:2.26). The core of the accounting framework was the establishment of a 'site-specific' database which integrated existing and newly collected field measurements and spatial 'plot' data collected using laser profilers, scanners and large scale photography or videography (AGO, 1999)

The IPCC good practice guide states' that approaches are not presented as hierarchical tiers, they are not mutually exclusive and the mix of approaches selected by an inventory agency should reflect calculation needs and national circumstances' (Penman et al, 2003:2-7). The emphasis on measurement of carbon stocks and flows according to national circumstance underlines the predominance of socio-material determinant of measurement and the power vested in expert authorities to determine how numbers are constructed and calculated, and how scientific expertise is linked to political and economic calculation.

In order to account for emissions from land use change the NCAS adopted a full carbon accounting model (FullCAM) drawing outputs from a number of programs to provide land use change emission estimates. These programs include: land cover change, land use and management, climate input, crop growth and plant parameters, biomass stock and growth increment, tree parameters, forest growth and parameters and soil carbon. (Mackintosh, 2007:7). Between 1999 and 2006, 49 technical reports were prepared for NCAS in order to aid establishing the FullCAM. The National Carbon Accounting System description of the land-use change program was aimed to 1) provide a 30 year monitoring of land cover change continentally commencing in the early 1970s and 2) to provide a multi-temporal, fine resolution data series identifying through time, for any land unit, land cover change (removal of forest cover and forest regrowth) that is attributable to direct human actions. The intensive datasets and herculean nature of this approach itself raise doubts towards its accuracy, precision and verifiability. As Nilsson (2000:1 c. f Lohmann, 2005:215) rightly point out 'the fact that knowledge of carbon flows among the atmosphere, lithosphere, biosphere is inadequate to form the basis for any viable trading scheme is alone sufficient to make the Kyoto Protocol 'completely unverifiable'.

## Interpretation and Reporting of National Carbon Sink

The two crucial aspects of the interpretation of remote sensing data involved in creating Australia's Kyoto accounts were: the threshold between forest and non-forest and the attribution of the emissions changes in the categories to humans or to natural causes<sup>63</sup>.

Before arriving at a final land-use estimate figure, at least two qualifications were made to the raw data: firstly, forestry operations (i.e. harvesting and planting) were not defined as land use change under the Kyoto rules, unless the land was converted from forest to non-forest conditions and there was subsequent change in the land use (for example, managed forest to pasture) (Mackintosh, 2007:8). For forest conversions, the vegetation change must be 'deliberately done for the purpose of the change in land use' (AGO, 2002 c.f Mackintosh, 2007:8). That is which land use changed to something other than forestry (within the Kyoto definition) was excluded from official accounts. Secondly to remove land use change events that do not satisfy the UNFCCC and the Kyoto rules, a collection of different masks were applied relating to things such as fire, land tenure, forest harvesting on private land, salinization, drought and growth flushes (Mackintosh, 2007). The expert judgements required to make these classifications reflects the political and economic nature of carbon accounting.

Ingmar Lippert (2012) cautions us against the suspicious nature of classificatory practices underlying carbon accounting process as he argues 'better not trust 'black box' of carbon 'facts' as information is in itself a procedure prone to political selection. He notes (Lippert, 2012:139) 'in the process of information being classified some parts of

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<sup>63</sup> For a comprehensive discussion on the stages of the process used by remote sensing data to estimate land use change refer to Mackintosh (2007:7)

the original set of data are disregarded and not made transparent ...it is a politics about what kind of carbon is constructed and, eventually, emitted into social and economic reality'. The expert judgements in qualifying what count as land or as forest are staged for an appropriate audience, through negotiation of meanings on a case by case basis.

Watson et al (2000) further confirmed that the Kyoto Protocol's definition and classification of carbon sinks often resulted in some emissions being excluded from reporting for the sake of uniformity and clarity. The clearing of forest that is not included in the Kyoto definition of forest and the logging of the Kyoto forests which remained Kyoto forest after harvesting were not reported by industrialized countries. In both cases greenhouse gas emissions contribute to global warming. The expert judgments required to make these qualifications point to the political nature of carbon accounting. As Watson et al (2000:78) rightly pointed out 'government and private entities have a greater incentive to report activities that gives rise to removals than those that give rise to emissions. This factor may lead parties to resolve any ambiguities about what may be an applicable activity by over-reporting removals and under-reporting emissions'. Thus the facts and figures of carbon accounting are not neutral but deeply political calculation, involving government, corporations, experts, techno-scientific methods of classification, collection and measurements.

## **Verification and Transparency of Carbon Sink**

The cornerstone of any objective, quantitative big science project is on the principle of verification and transparency, where technologies are meant to be neutral mediums transmitting objective, external truth or a fact. Verification by third party institutions and transparency forms an essential principle of national carbon accounting as it provides confidence trust, accountability to government, investors, project developer, NGO's and public regarding the meaningful mitigation action or validity carbon benefits claimed by a project.

The first phase of compliance with the Kyoto Protocol required each party to prepare an inventory of deforestation rate numbers in 1990. The preparation of the 1990 baseline was crucial for Australia as the authoritative determination of carbon account number was done in a manner to inflate the baseline year emission. In preparation of 1990 baseline the official Australian Greenhouse Office technical paper postulated

*The use of independent data (and where appropriate methods) for verification should be built into the program and archived as a part of decision tracking and support. Independent verification may also include use of third party assessment (AGO, 1999:4).*

The baseline figure was subjected to peer review process within the National Carbon Accounting System expert community and the government expressed much faith in the quality assurance control process as it assured the Parties to the UNFCCC that the potential 'bias toward the inclusion of false change or towards only change where this is absolutely certain ...is insignificant' (DEH, 2006, c.f Mackintosh, 2007:8). The government assured that 'the oversight and peer review process of verification of national carbon account were supposed to 'ensure world's best practice and international credibility'(AGO,2002:16)

However, in its review of Australia's initial report to UNFCCC (UNFCCC 2009:10) identified emissions/ removals from LULUCF as a key area where transparency needs to be enhanced as it concluded that 'in some cases emissions have been aggregated, making it impossible to review certain categories, discrepancies between National Inventory Report (NIR) and Common Reporting Format (CRF)'.

The intimate link between politics and technology making of national carbon sink in Australia exemplified the intimate link between power, politics, rationality and technology of the government starting from differential definition, classification of land management, measurement, choice of methods, apparatus and translating measurement into verifiable facts.



## Land Clearing Data of NCAS and SLAT

Deforestation has had a chequered history in Australia. From the mid1960's Commonwealth and State governments supported land clearing as an essential part to improve productivity enhancing national economic prosperity. However, since the 1990s there was major decline in financial, logistical and other incentives to clear native vegetation, due to decrease of agricultural productivity, innovation, growing environmental consciousness of urban population (AGO, 2002). The state territories of Queensland and New South Wales faced the greatest deforestation process prior to 1990s. The Queensland government established a satellite-based woody vegetation change monitoring program called State-wide Landcover and Trees Study (SLATS) to provide information and monitoring on land clearing using remote sense data since 1991.

Andrew Macintosh (2007) reported significant differences between the data generated by National Carbon Accounting System (NCAS) and SLAT<sup>64</sup> with regard to land clearing in Queensland and Australia in general. Mackintosh observed (2007) discrepancies in numbers generated by both satellites system due to methodological issues as well trends in surveys adopted by NCAS and SLAT were different too.

The differences between land clearing data explained by the methods used to process and interpret the satellite imageries. Mackintosh argue (2007:24) that although the data from NCAS and SLAT are not directly comparable but the trends in the land clearing 'should be roughly similar. Further, given the nature of the difference between the accounting systems, it is unlikely that the difference in clearing numbers should be as large as they are. Moreover...after adjustments to account for the major definitions issues, the data should be very similar, which they are not'

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<sup>64</sup> Both NCAS and SLAT have relied on similar satellite data for the relevant time-periods; landsat MSS, TM and so on (Mackintosh, 2007)

The level of discrepancies between the data of SLAT and NCAS, the difference in land clearing trends and lack of transparency in NCAS data, raise serious doubts about the accuracy of NCAS and more so on Government's claim to reduce greenhouse emissions. For Mackintosh (2007) the concern was whether methods adopted by accounting systems were 'defensible from a scientific perspective and whether the results accurately reflect what has occurred on the ground'. Mackintosh argued (2007:19)

*Australia has an obligation under the UNFCCC to ensure that the information that it submits for the purpose of convention is accurate and verifiable. Further as the Federal Government has publicly committed to ensure that Australia meets its Kyoto target, it has an obligation to ensure that the information that it publishes on this issue is as accurate as possible. The fact that the Queensland Government has taken steps to reduce land clearing is not a sufficient reason to ignore the anomalies identified in the NCAS data.*

The government criticized the report as inaccurate and flawed in its analysis of the National Carbon Accounting System and stated that the SLAT program and NCAS were set up for different purposes, had different report requirements and have significantly different technical methods (Mackintosh, 2007b).

According to Collier (2009:79) carbon accounting can be included into the list of 'topologies of power where patterns of correlation in which heterogeneous elements techniques, material forms, institutional structures and technologies of power-are configured, as well as transformed'. Data and numbers don't exist out there; they are produced through a socio-material network based on a cultural setting that configure human and non-humans in a particular way. The very insertion of the 'Australia clause' in UNFCCC negotiations depicts that actors like 'Australia' was produced and configured in specific cultural and technical settings.

The role of government in accounting practices reveals that 'governance is about steering and regulating a world without a radical alternative, it is animated by the search

for rational, responsible and efficient instruments of problem management' (Lemke, 2007:105). Accounting is a politically invested social practice in neoliberal governmentality which problematizes the issue of climate change in a way, that suits the competitive market. Discourses of economic competitiveness and efficiency guide the writing of accounting rules and frameworks. The intimate link between governmentality and calculative infrastructures make possible numerical comparisons of what is essentially incomparable: for example yielding one single financial figure to depict different classes and entities, assembling into one category the heterogeneous elements. The profoundly political nature of carbon accounting is demonstrated by Nikolas Rose (1999:212)

*Numbers do not merely inscribe a pre-existing reality. They constitute it ...the collection and aggregation of numbers participate in the fabrication of a clearing within which thought and action can occur. Numbers here help to delineate 'irreal spaces' for the operation of the government, and to make them out by a grid of norms allowing evaluation and judgement*

There exists an inverse relationship between calculative infrastructures and governmentality; calculation enables governmentality and governmentality provides numbers with calculability with their context specific meanings. Carbon accounting embodies a convergence of capitalist valorisation and governmental *dispositive* and entangled in the opening up of carbon and the production of governable commodities (tCO<sub>2</sub>e) as well as governable subjects such as accountants, experts, carbon traders (Leonardi, 2012). The issue of climate crisis is made into profitable opportunities for business . As Lohmann rightly portrays (2011:91) 'the requirements of commodity creation-accounting, ownership and possibility of capital accumulation-lead naturally to the framing of climate problems and 'climate services' in terms of flow of molecules, especially CO<sub>2</sub> molecules'. So in these terms carbon accounting is not a neutral, context-free process, as it is not so much about the content of knowledge but rather the 'governmental rationality' that sets them in motion. Further the case of carbon accounting examines how liberal governmentality connects thoughts and practices to make possible

contemporary forms of calculability.

## **Securing Australia's Energy Future**

The coalition government's treatment of the environmental movement was recounted as 'vicious and without a precedent in the last thirty years' (Doyle, 2000:176). Prime Minister Howard's decade long tenure in government (1996-2007) made an indelible mark on setting a drastic course for Australia in international negotiation on climate change governance characterized by deep-seated inertia towards emission reduction justified by national economic interests and saving the country from economic ruin.

The government was resilient and resolute against any meaningful multilateral negotiations on climate change and left no stone unturned to protect the economic self-interests of Australia and more so the interests of fossil-fuel industries, economists and resource ministers. The government adopted strategies including flouting international treaties fraud and deceptive mechanisms, to ensure that Australia avoided taking fair share of burden in mitigation of climate change. Tweaking the UNFCCC clause of 'common but differentiated responsibility', the government bargained and demanded differentiated targets, based on rational pursuit of egoistical self-interest and inclusion of developing countries such as China and India into a common shared responsibility of emission reduction targets ignoring the historical trajectories of greenhouse gas emissions by developed and developing nations.

Australia's antagonism towards multilateral negotiations on climate change governance followed by the demand for concessions through sinks as carbon sequestration projects were bounded up with the government's conviction that the key to maintaining the a pace of capital accumulation for a 'relaxed and comfortable' economy was linked to the future of the resource sector and energy-intensive industries. Prime Minister Howard's domestic approach was based on 'voluntarism' and 'market

fundamentalism' promoted through industry self-regulation and market mechanisms, with active intervention by the government. The 'governing at a distance' through regulated self-regulation was aimed at ensuring 'anything that might be detrimental to the cost of doing business was viewed as illegitimate affront to economic freedom' (Pearse, 2007:133). The development of national economies corresponded with socialization of both individual citizenship and economic life in the name of collective security.

The government's staunch standing on 'voluntarism' translated into a repudiation of binding legal obligation of the Kyoto protocol in form of emission reduction targets and timetables. The government soon realized that there was way to have the Kyoto cake and eat it too, and once it managed to negotiate and win land-clearing cuts at the Kyoto negotiations, Prime Minister Howard announced that Australia would not ratify the Kyoto Protocol in 2002 primarily the reason being that it would harm Australian economy and even more so because the treaty excluded large emitters like China and later United States . Reputedly It was a unilateral decision of Prime Minister Howard and not his cabinet to decide against the ratification of the Kyoto Protocol (Pearse, 2007).

The hostility towards the Kyoto process was driven by thr government's conviction that Australia could not be cut its emissions in the future, even by relying on reduced deforestation. By 2004, the favored approach was 'Securing Our Energy Future' when Howard announced a new policy statement on Energy White Paper (EWP). The government claimed that it had made considerable progress in decoupling economic growth from greenhouse emissions, stating that Australia's per unit of GDP have declined substantially by 31 percent from 1990 to 2002 (Commonwealth of Australia, 2004).

The government further stated that in order to maintain a strong and internationally competitive economy while lowering its greenhouse signature, a long term approach would be required based on integration of low-emission supply technology, energy efficiency and flexible markets which will mostly occur overseas.

Prime Minister Howard went on to claim that Australia had the makings of an

energy superpower: 'We are the world's largest coal exporter and we account for about 30 per cent of world trade in that commodity; Australia's coal reserves could provide clean electricity and potentially hydrogen for transport fuels, so our energy exports could cut greenhouse gas emissions around the world' (Pearse, 2007: 105). The government was no longer focused on the Kyoto timetable, as it sought to build a long term coal and fossil fuel empire especially in the Asian countries, and this was whole heartedly welcomed by energy intensive industries. The decision to protect economic competitiveness and a tendency to view climate negotiation as a trade negotiation was clearly apparent from strong backing by business leaders and establishment of Government- Business Climate Change dialogue to consult on Australia's long term response to climate change (Pearse, 2007).

The Energy White Paper made it clear the most effective mechanism to boost renewable sector, the Mandatory Renewable Energy Target (MRET) introduced in 1997, was on its last legs. The government decided to rather focus on a more cost-effective, long term abatement which was available in clean coal technologies. The government launched \$500 million Low Emissions Technology Development Fund (LETDF) which was established to support 'industry led-projects that would demonstrate the commercial viability of new energy technologies with low greenhouse gas emissions' (e.g. solar, wave, tidal, wind, carbon capture and storage) (Commonwealth of Australia, 2004). The government specified a commitment towards establishment of \$75 million 'Solar Cities Program' which was designed to provide a working model to demonstrate how technology, energy efficiency and energy markets could be combined to provide a sustainable energy future. The model involved an 'uptake of solar energy and energy efficiency technologies by a substantial proportion of residents and businesses' (Commonwealth of Australia, 2004: 145)

## **Asia Pacific Partnership**

In 2005 Prime Minister Howard along with US government formally announced the

establishment of Asia Pacific Partnership on Clean Development and Climate (AP6) to forge a voluntary non-binding partnership between Australia, China, India, Japan, Republic of Korea and United States of America to address the challenges of climate change, energy security and air-pollution in a way that encourages economic development and to reduce poverty (Commonwealth of Australia, 2007). The partnership was considered an 'historical breakthrough on saving the climate and saving the planet' (Minister Campbell, c.f Hamilton, 2007:186) The main objective of the Partnership was to promote development and diffusion of new 'clean' technologies in reduction of greenhouse gas emissions but foremost ensuring energy security amongst its six partners.

The vision statement of Asia Pacific Partnership read as follows (2005:1) 'The partnership will be consistent with and contribute to our efforts under the UNFCCC and will complement, but not replace the Kyoto Protocol'.The semantic distinction of 'consistent' and 'complement' were carefully crafted by the key figures involved in the formation of the partnership which carried much political significance in jeopardizing collective international resolution of climate change crisis. The rhetoric of consistent and complement was used to portray AP6 was a complementary mechanism to the 'failed Kyoto process' and aimed to achieve substantial emission cuts by major emitting countries such as Australia, United States and China.

Contrary to the political rhetoric of consistent and complimentary, the purpose of forming the AP6 was to 'obstruct or limit the effectiveness of international treaties such as UNFCCC and the Kyoto Protocol' (Mc Gee and Taplin, 2006: 178). Prime Minister Howard's faith voluntarism was extended to AP6 as it had no reference to binding obligation or quantified emission targets or quantified outcome by the partner countries. The emphasis of the partnership was to provide opportunities for increased energy needs, increased energy security and reduce greenhouse gas intensity (the volume of emissions produced per unit of GDP) rather than aggregate emissions of member nations. The greenhouse gas intensity was not a collective agreement but rather decided to suit parties 'national circumstances'.

As the vision statement of the partnership read as (2005:2)

*The partnership will also cooperate on the development, diffusion, deployment and transfer of longer-term transformational energy technologies that will promote economic growth while enabling significant reductions in greenhouse gas intensities.*

In absence of absolute emission target, a country may improve the greenhouse gas intensity of its economy but at the same time due to increased economic growth, there will be an increase of absolute greenhouse gas emissions from its economy (McGee and Taplin, 2006) The principle of greenhouse gas intensity was therefore an 'empty signifier' without any concrete and specific aspirations to reduce emission. The economic modelling carried out by Australian Bureau of Agricultural and Resource (ABARE) reported that under the best case scenario the effects of AP6 partnership on global emission would still increase from 8 gigatonnes of carbon equivalent now to over 17 gigatonnes in 2050 (Hamilton, 2006) as the agreement had no prospects whatsoever in mitigating climate change. The Howard government's frequent claim that it had 'decoupled' economic growth and growth from greenhouse emissions stacked up very poorly with the records on emissions intensity conducted by ABARE.

An argument in favour of the AP6 partnership was that, it would be far more effective than the Kyoto due to the inclusion of world's six largest emitters; it claimed that the Kyoto Protocol was flawed as it excluded world's largest emitter the US and other developing countries were not subject to emission targets for the first commitment period. Out of six countries included in AP6, four countries China, India, Japan and Korea had ratified the Kyoto Protocol and were engaged in flexibility mechanism such as CDM and joint implementation so on. It was only US and Australia which were disengaged from the Kyoto process.

The establishment of AP6, a brain child of Prime Minister Howard was simply a tactic to include developing countries in a coalition. The AP6 specified a partnership between nations with differing emission patterns, technological and energy needs but were treated as 'equal partners to the agreement' following a 'non-legally binding



framework'. With its failure to consider the past and present emission patterns of developed and developing nation, AP6 was used as a silent compulsion on the developing countries.

The partnership publicized as practical action and equal partnership was simply a political tactic as Australia led the AP6. It was far from equal partnership when it came to 'putting money on the fridge' (Alexander Downer, c.f Pearse, 2007:115). Designating 'equal partnership to the agreement' i.e. equally free of any kind of binding emission reduction requirement, were both inconsistent with UNFCCC principle of 'common but differentiated responsibility' and non-complementary with 'legally binding emission reduction targets and timetables' of the Kyoto Protocol.

The formation of AP6 was one of the piece with the government's master-plan to secure the future of fossilized energy in Australia, along with other initiatives undertaken by the Howard government such as the Global Initiative on Forests and Climate, the Global Nuclear Energy Partnership and the Asia- Pacific Economic Cooperation (APEC).

The establishment of AP6 ascribed a prominent role to the private sector investment in clean and low-emission technology development which gave coal and gas industry 'an inside running some of the world's fastest growing markets' (Pearse, 2007:88). The AP6 specified the creation of eight public-private sector taskforce to develop action plan on cleaner fossil-fuel energy, renewable energy and distributed generation, power generation and transmission, steel, aluminum, cement, coal-mining and building and appliances. Each project involved two of the six AP6 partners. The cleaner fossil fuel energy taskforce, chaired by Australia and co-chaired by China was the biggest venture, focused on carbon capture and storage (CCS) and development of so-called clean technologies (AGO, 2007:4)<sup>65</sup>

Fossil-fuels remained a central focus of the partnership for all parties; with Australia, US, China and India accounting for more than half of the worlds coal production

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<sup>65</sup> The taskforce on cleaner fossil fuel energy specified to advance the development and transfer of clean coal technologies such as ultra-supercritical pulverised fuel, new clear coal-based fuels, poly generation, hydrogen production, coal-bed methane and coal and gas liquefaction (AGO, 2007:4)

and Japan and Korea were two biggest coal importing countries. It was apparent that the formation of AP6 was basically a 'coal pact' (Christoff and Eckersley 2007:35) '

Technology and the private sector were two key themes of AP6 partnership, which aimed to absolve the responsibilities of the government to undertake effective mitigation of climate change, passing the responsibility to the private sector. The AP6 was considered of 'trans-governmental network' or 'coalition of willing states' involving government, experts, private sector and civil society actors. Although the involvement of industry initiatives in clean technology was central, it was state centric, in which private actors were simply co-opted into voluntary agreements with governments. The government was actively involved in steering the partnership through non-hierarchical forms rather than regulations and legislations. As Mc Gee and Taplin (2009:231) argues ' the ecological modernization (EM) discourse embodied in the APP is thus significantly deregulatory in favouring non-binding activity to facilitate trade in cleaner technologies rather than binding emission targets and regulatory institutions of international carbon market '.

## **Conclusion:**

The 1996 election was significant for two reasons. It marked an end of the ALP's monumental era; etched with the birth of neo-liberal market an illegitimate child of Bob Hawke and Paul Keating. What made it extraordinary was that the economic and social reform agenda was undertaken by a political party that was able to form one of the world's earliest social democratic governments. However, the entrenchment of market-based economic and social restructuring was far from over when the Labor Party left office in 1996. It marked a beginning of an authoritarian neoliberalism led by Prime Minister John Howard based on governing through market society in co-existence with practices that were despotic and illiberal. John Howard finished what Labor had started: to extend, deepen and intensify what was initiated by its predecessors.

Howard's prime-ministerial government was based on principles of economic fundamentalism as he sought to make Australia a staunch market-based economy with the application of privatization, competition, public sector outsourcing policy and was extended to all areas of life and population. The role of the government was to promote strong vision of a free, competitive economic order. The government was modelled on what was conceived to be the regulations of the market, through the adoption of neoliberal models of public sector organization held to be derived from the markets, construction of quasi-markets; introduction of price-competitive tendering, devolved budgeting, contracting out to private companies which were formerly public services, introduction of performance management systems, corporatization and privatization of public authorities and utilities, and so on.

The hegemony of the neoliberal agenda enabled the government to formulate climate domestic climate change policies that revolved around market-based mechanisms or economic instruments. The government's key strategy was to advocate flexibility mechanisms at international negotiations on climate governance. The Howard government's greenhouse response assumed that cheap coal was the backbone of Australia's economy our most important natural competitive advantage. The sacred status of fossil fuel and its survival was entrenched in the policies and programmes of the government with regard to climate crisis.

During 1996-97, the government mounted a vigorous international campaign to prosecute its case on climate change. One of the key aspect was the initiative to build his political allies or 'Circle of Trust' comprising scientists, economists, institutions, neoliberal think tanks, lobbyists, industry associations and agencies including Australian Bureau of Agricultural and Resource Economics (ABARE), CSIRO, Institute of Public Affairs, Business Council of Australia, Australian Greenhouse Industry Network and so on. There was a constant rotation of personnel between carbon intensive industry, federal bureaucracy, Liberal party within this Circle of Trust as they ensured they always had the inside running.

The 'Circle of Trust' was instrumental in the scientization, economization and technocratization of climate crisis. There was a complimentary mix of climate change denialism and delay with regards to climate action from scientific headquarters such as CSIRO, and they also backed governments interest in the research and development of clean coal. The process of economic modelling to estimates the costs of cutting emissions was based on an orthodox economic model of MEGABARE. The model was focused on one-dimensional impacts of climate change policies primarily on the economy and economic welfare of the Australian population. The MEGABARE economic modelling was developed to analyze the problem of climate change as a trade problem rather than an environmental issue and excluded assessment of the benefits of reducing emissions, seriously overstating the likelihood of carbon leakage. The MEGABARE modelled and represented the 'national economy' into fossil fuel as it failed to allowed for technological change in response to policies to cut emissions. The techno-politics of climate crisis was based on writing the rules of carbon accounting governed by discourses of economic efficiency and material interests and most importantly national sovereignty. The construction and making of a national carbon account also depended on various socio-material *agencements* comprising specialists, experts, accountants, satellites, imageries and so on. The techno-politics of carbon accounting was a marvelous feat of mobilization of vast network of actors, economists, experts and technologies and it paved the way for future emissions trading in Australia. The politics of carbon management as a politics of cost and global responsibility of emissions reductions was entangled with practices of carbon accounting, making data from models, instruments, test and institutions to give meanings and answer problems.

The analytics of carbon accounting demonstrate the one aspect of liberal governmentality drawing attention to the distinctive role of cost measures in interpretation of land accountings according to economic rationalities of liberal government. The techno-politics of carbon accounting also draws attention to modern territoriality as closely related to the bureaucratic powers of the state to measure, survey and visualize as the comprehensive calculation of Earth's emission sources and sinks. This is not only about representation alone but are tied to national industrial competition

and economic government.

# Chapter 6: The Garnaut Moment 2008 and Kevin Rudd

## Introduction

This chapter details the climate policy terrain of Prime Minister Kevin Rudd in the wake of financial crisis affecting the world economy in 2008 and 2009, characterized as green economy or green growth based on the construction of a carbon market as a hegemonic governmental rationality. This chapter critically examines the context of the Garnaut Climate Change Review of 2008, an initiative of the Labor government to undertake a cost benefit economic analysis of the impacts of climate crisis and its mitigation on the economy, population and society in general. The appointment of Prof. Ross Garnaut, a neoclassical economist was a strategic choice due to his past connection to Rudd's predecessors Hawke and Keating in the 1980s. The Garnaut review was a deliberate undertaking of the labor government to conjure up the illusion of an effective response to climate change that would ensure t no one felt worse off. The preparation and publication of the review which was completed 18 months later allowed the government to buy time to decide between politically risky action or illusion thereof. The Garnaut review proposed a domestic emissions trading scheme to begin in 2010, to help deliver Australia's commitment to the Kyoto target. The review was the highpoint of political consensus in Australia on climate policy as it gained bipartisan support for the introduction of a polluter friendly emissions trading scheme as the only possible solution to the issue of climate crisis. The farce of emissions trading leading to deep cuts in greenhouse gas concentration was in reality designed to create a new market generating windfall profits for resource industries along with a new income stream for the banks, accountants, brokers and carbon offseters.

The Review's practical concerns were to chalk out the costs and benefits of various emissions targets for Australia in limited concerted international action and regard to climate crisis. The crux of the review was the introduction of a domestic emissions

trading scheme at the behest of government as a necessary centerpiece in Australia's effort to reduce emissions. The proposal for the emission trading scheme was based on the review's strong conviction that national or international mitigation of climate crisis will be successful if and only if it is consistent with continued economic growth and material prosperity i.e. the discourse of green economy. Within this broad discursive and material context, the review adopted neo-classical economic principles of quantification, measurement, valuation of climate as a private, exchangeable good and its interrelation and configuration with economy, state and society. The foundational principles of neoclassical economics share commonalities with neoliberalism as it can be viewed as a discursive framework that guides thinking about the desirable course, nature and scope of policy in capitalist economics. The policies are exclusively framed in abstract terms of competition, efficiency, supply and demand and the need to address market failure. In neoliberal parlance 'the prescription for Market Failures is always more markets' (Mirowski, 2012:7).

The dominant framing of climate crisis as an economic problem constituted a joint process of scientization, economization, technocratization of nature commensurable with the logic of markets. The rendering of nature, economy, state and society as explicit and as quantified as possible were based on certain presuppositions about how and what to value. The review's proposal for the introduction of domestic emissions trading scheme was based upon:

a) Scientization of climate crisis; the review assessed and compared the costs and benefits of three scientific mitigation scenarios, no mitigation, stabilization at 550 ppm and stabilization at 450 ppm. The review proposed mitigation scenario of 450-550ppm consistent with global goal, keeping in consideration the 'national' and 'economic interests' of Australia. The review's proposed target of 550ppm was ruthless as it recognized 'locked in' destruction of the Great Barrier Reef and other catastrophic consequences

b) Economization of climate crisis through the extension of market based forms of calculation, valuation and measurement of nature, including its alignment with certain types of human behaviour, spheres of activities, institutional arrangements qualified as

economic, followed by economic techniques of evaluation. The review's reformulation of climate crisis as an economic problem calls for a remedy centered on economic measures. The monetary valuation of climate crisis is based on economizing individual behaviour as neoclassical economics rests on the assumption that value resides in the optimal satisfaction of individual preferences, or maximization of utility under conditions of scarcity. People are assumed to respond to economic incentives in form of allocated property rights in the form of tradeable carbon emission units. The economic techniques become imbued with a quasi-sovereign form of authority as the state comes to justify its decisions, policies and rules as commensurable with the logic of markets. The authority of state becomes heavily reliant on the authority of economics and economists to dictate legitimate course of action. Rather than the state surrendering its powers to the market, the state extracts principles and techniques from the market economy and uses its power to push these into non-market social and political spheres, as in the domain of climate crisis. This plays an instrumental role in the allocation of property rights through carbon permits

c) Technocratization of climate crisis through the construction of carbon market as an ongoing process of economization, the valuation of climate leads to the fixing of price, which is imposed on various actors and agents engaged in the transaction. The review undertakes a cost benefit analysis in order to construct hypothetical carbon prices to make them commensurable within the market order of worth. The markets are conceived as socio-technical *agencements* comprised of material and technical devices, text and algorithms to rule human beings.

## **Climate Change Election of 2007**

The federal election of 2007 in Australia was described by many political commentators nationally and internationally as the 'world's first climate change election' (Rootes, 2007; Burgmann and Baer, 2012). Whether or not the issue of climate change was the sole reason in the election outcome was rather debatable, as after 11 long and lowly years in office for John Howard, it was time for a change. The change of federal government from John Howard to Kevin Rudd was the only certainty within the discourse of uncertainty of climate change. Further in the lead-up to the 2007 federal election, a



confluence of international events such as the release of Al Gore's, *An Inconvenient Truth* and the publication of the Stern Review on the *Economics of Climate Change* in 2006 renewed the media and public interest in the issue of climate change. The hostility of the Howard government towards any meaningful action on climate change created a momentary political void which Kevin Rudd was quick to seize. He succeeded in painting Labor party as the pro-climate alternative to the Howard government. Rudd's successful engagement with the media and public helped him brand himself as Kevin07, making direct appeal to the Australian people creating a personality seen as trustworthy, ordinary and a saviour.

## **Kyoto Symbolism at COP 13**

The post-election euphoria was translated into first official act of the Rudd government to ratify the Kyoto Protocol in Bali Climate Change Conference on 3rd December 2007. It was greeted with a minute-long ovation at the UN and praise of Prime Minister Rudd as a shining beacon of leadership in multilateral climate change governance. However, the ratification of the Kyoto Protocol was hardly laudable considering Australia was already granted the most generous target of 8 percent increase from a 1990 baseline, thanks to the legacy of the Howard government and his dubious 'Australia Clause' in the Kyoto Protocol, which enabled Australia to include reduced emissions from land clearing in its emission target calculation.

After the initial fanfare of the promise to ratify the Kyoto Proposal, the Australian delegation remained hesitant and refrained from taking any substantive action at the Bali COP. Prime Minister Rudd announced his decision to commission Professor Ross Garnaut to undertake a study on economic costs and benefits of climate change mitigation in Australia, following the publication of The Stern Review on The Economics of Climate Change. Apart from the ratification of the Kyoto Protocol the domestic climate policies of both Prime Minister Howard and Rudd was hardly any different. Both promised a national cap-and-trade system but shied away in making firm commitments to emission

reduction targets. The Australian delegation at Bali only agreed to the inclusion of a reference to the conclusion of the Intergovernmental Panel on Climate Change (IPCC) that aggregate developed country emissions must be between 25 and 40 percent below 1990 levels by 2020 in order to provide a reasonable chance of keeping warming to 2°Celsius (Bali Road Map, UNDP, 2007). According to the Australian Greenhouse Office (2007), it was estimated that Australian emissions started to climb to 127% by 2020 from the 1990 baseline.

## Climate Change as the Greatest Moral Challenge

The year 2008 marked an important landmark in the Australian politics as it was not only the moment of economic chaos created by Global Financial Crisis but it also marked a period of ideological retribution as Prime Minister Kevin Rudd became seriously engaged with political and philosophical enlightenment in his high publicized essay *The Global Financial Crisis*, published in *The Monthly*. The crux of the essay reflected Rudd as a crusader against neoliberalism, as the essay opened with Rudd's premature proclamation of the death of neoliberalism as he stated that the global financial crisis is one such event 'in human history ...of a truly seismic significance, events that mark a turning point between one epoch and the next, when one orthodoxy is overthrown and another takes its place' (Rudd, 2009:20).

For Kevin Rudd, the Christian social-justice model of Dietrich Bonhoeffer, trumped Hayek and the Chicago school when he famously announced "Climate Change is the greatest moral challenge of our generation' as invoking a new moral and virtuous passion which sought to reinstate Ben Chieffly's vision of a 'Light on the Hill' (Rudd, 2006: The Monthly Essays; Faith in Politics). Kevin Rudd cited climate change as a potent example of market failure which neoliberal governments had failed to address as he stated '*what sir Nicholas Stern legitimately describes as the greatest market failure in human history is dismissed by neo-liberals as a prescription for wanton interference in market forces*' (Rudd, 2009: 23)

For Rudd neoliberalism's superstitious belief in invisible hand of the market acted as a powerful deterrent against the decisive state intervention which was needed to combat climate change. According to Rudd a social democratic state was therefore an essential compliment to market.

*Social democrats believe in the market but we don't believe in market fundamentalism (Rudd, 2006:9) one that was expressly anti-marxist and shaped by the tradition of Adam Smith. Rudd expressed that market is at the heart of his social democratic vision, claiming that 'social democrats have always respected and accepted the creativity, the efficiency and the wealth-generating capacity of markets' (Rudd, 2006:15)*

In his speech at a conference held by Institute for Public Affairs (IPA) in August 2008, Prime Minister Rudd argued 'the most productive and intellectual policy debates today often lie at the intersection between market failures and market mechanisms' (Rudd, 2008). Yet on issue of climate change Rudd's faith in market mechanism was indubitable as he argued that 'a market mechanism, emissions trading- is the best way to find the lowest cost and most effective route to cutting carbon emissions' (Rudd, 2008). In contrast to the conservatives, Labour government favoured open markets but at the same time recognised when markets fail and in such situations the role of state became fundamental. The labour government presented themselves as willing to act on market failures such as climate change and effectively participate and contribute to multilateralism in the UNFCCC.

Penny Wong, the then Minister for climate and water argued the best way to drive emissions reductions is to use market based mechanism but in fact government action would shape and create a new Australian market of emissions trading, that would also facilitate Australians participating in international carbon trading markets. She stated

*Achieving our goal of delivering deep cuts in emissions by the middle of the century means significant transformations in the way our communities and economy function...it will help address the market failure that has contributed so profoundly to climate change...The*

*introduction of emissions trading will constitute the most significant economic and structural reform undertaken in Australia since the trade liberalisation of the 1980s (Wong, 2008 c.f Johnson, 2008:5)*

Rudd in his essay romanticized Hawke-Keating's reform agenda immediately after denouncing neoliberalism as 'extreme capitalism'. As previous chapters demonstrated the Labor government under Hawke and Keating paved the path for triumphant neoliberalism in Australia, discarding the basic tenets of social democracy. Therefore, Rudd's staunch belief in government infallibility required him turning a blind eye towards the neoliberal policies undertaken by his predecessors, instead praising the vision and strength of Australia's key economic reformers.

## **The Financial Crisis and Green Economy**

In the wake financial crisis that affected the world economy in 2008 and 2009, the problematization of climate change was reframed as an economic problem, calculated in terms of cost-benefit analysis. The reframing of climate change as an economic problem was part of a broader discourse of 'green economy or green growth' popularised after the financial crisis. The universalization of climate change politics, within the confines of the existing energy status quo ,carbon became particularly visible with the concept of a 'Green New Deal', as the key means of solving both economic and environmental problems. Climate change was presented as an opportunity as well as a crisis, embedded in the green growth discourse was an assertion that 'economic growth can occur while it also achieves 'significant' environmental protection' (Jacob,2012:4). However, the question of how 'significant' is what was contested. The convergence of green growth into solving environmental and economic problems was reflected in Global Green New Deal published by UNEP, in 2009.

*In response to the financial and economic crisis, UNEP has called for a "Global Green New Deal for reviving the global economy and boosting employment while simultaneously accelerating the fight against climate change, environmental degradation and poverty (UNEP, 2009:1)*

The universalization of climate change politics through the common currency of carbon occupied centre-stage as climate change became the one size fits all solution to global economic, social and environmental problems. The global emergence of green growth discourse was the new buzzword as a result of decreasing traction of sustainable development in climate change governance. In 2006, Al Gore's documentary *An Inconvenient Truth*, followed by IPCC's Fourth Assessment Report and the Stern Review on the Economics of Climate Change published in late 2006 sparked a media frenzy. Following the publication of The Stern Review in 2006, economic cost became the center-piece of climate change mitigation. The Review recommended that early action to address climate change will yield positive benefits, at little long term costs, whereas postponing any substantial action will accelerate the pace and intensity and exacerbate the damage that it will likely to cause to future economic activity. As stated in the Stern Review (2007:4)

*The world does not need to choose between averting climate change and promoting growth and development. Changes in energy technologies and in the structure of economies have created opportunities to decouple growth from greenhouse gas emissions. Indeed, ignoring climate change will eventually damage economic growth*

The discourse of green growth was based on the fundamental compatibility of growth and environmental protection. The Stern Review demonstrated a conventional economic perspective of the overriding hegemony of economic growth in the context of the climate change and its mitigation. As Clive Hamilton puts it, 'the answer to almost every problem is more economic growth' (Hamilton, 2004:3). The report's defense of the traditional conception of economic growth avoided the fundamental question of why more growth and consumption is necessary. The report demonstrated mitigation is a growth-inducing activity, as the decarbonization process represents an enormous investment opportunity and as investments increase so too will aggregate income (Helm, 2008). As Stern states 'if we are not green then we will eventually undermine growth'. Hence the Review approached climate change and its mitigation as a 'pro-growth strategy' (Spash, 2007). The review emphasized that the carbon market presents

mammoth opportunities for financial markets as banks and other financial institutions play a vital role in low carbon technology.

## **The Garnaut Climate Change Review 2008**

The Stern Report served as a carbon pricing agenda- setter, the labor government took it as an opportunity in placing its actions encouraging the proposal for dealing with carbon pricing and climate change. The Garnaut Climate Change Review 2008 was a federal initiative of Prime Minister Kevin Rudd to design an Emission Trading Scheme (ETS) for Australia. The review led by Prof Ross Garnaut took the lead role in advocating for carbon pricing. The review was more politically motivated than it was about policy as it sought to build a consensus and win bipartisan support for emission trading. The appointment of Prof Garnaut, was a deliberate choice for the government given his previous involvement with Prime Minister Bob Hawke, as an initiator of market reforms. The review embraced principles of ecological modernization (EM) heralding new opportunities for the Australian economy . Technology and innovation guided by market instruments were government's preferred climate change solution including an Emissions Trading Scheme (ETS) to drive this change. The Garnaut Review (2008: xvii) was premised on ecological modernist perspective as it opened with a promise

*'there is a path to Australia being a low-emissions economy by the middle of the 21st century, consistently with continuing strong growth in material living standards. By the end of the 21st century and beyond, more so with each passing decade material living standards would be higher with than without mitigation of climate change'*

## **A Critical Examination of the Garnaut Review**

### **Visibility of Climate Change: Globalism and Consensual Action**

In the review the problem of climate change was rendered as inherently global which

required effective global mitigation through cooperation, via carbon trading. The review proposed that Australia's actions in terms of emission targets as well its domestic mitigation trajectory should be linked with those of the international community through a 'comprehensive global agreement' to prevent significant economic impacts occurring to Australian industry alone. As the review states (Garnaut, 2008: xxvii)

*Domestic policy must be deeply integrated into global discussions and agreements. The costs of achieving any target or holding any trajectory for reducing Australian greenhouse gas emissions will be much lower within the framework of an international agreement. The continuation for strong national mitigation in a number of countries without an international framework is likely to corrode the global trading system.*

The review emphasized that Australia's central approach on targets and trajectories must be linked to comprehensive global agreement on emissions reductions as a comprehensive global agreement to ensure trade equity. The Garnaut Review proposed what it considered an economically feasible, 'realistic' and equitable policy response. It recommended three targets: 5% reduction of 2000 levels by 2020 if no global agreement ensue, 10% if a global agreement committed to a climate stabilisation of 550 parts per million (ppm); or a fuller 25% if the global agreement sought a 450 ppm target reduction (Garnaut, 2008: xxxix). Although the review considered the mitigation of global warming depended upon fair and rational collective action, it proposed the domestic targets for stabilization of greenhouse gas concentration at disastrous 550ppm, in absence of an international agreement, which is purely in the national economic interests of Australia.

Strong domestic mitigation action, outside of an effective international agreement was completely ruled out as it would impose higher domestic costs. The review recommended (Garnaut, 2008: 281) 'higher domestic cost has the potential to leave our traded sector at a competitive disadvantage for no worthwhile environmental benefit'. This reality projected by the review opened the way to political pressure for exemptions and countervailing payments to the polluting industries in order to protect them against increased costs of mitigation.

Linking Australia's targets and trajectories to that of an international agreement also underpinned a carbon market, as costs are lower when more parties participate. The review proposed (Garnaut, 2008:284):

*The comprehensive agreements that would accompany the 450 ppm or 500 ppm outcome would allow for broad trade in international permits...This would, for any given level of emissions reduction, be expected to provide for lower cost abatement than would be expected under the narrower agreement represented by Copenhagen compromise.*

Emissions trading was proposed as a principal mechanism of addressing international equity concerns in greenhouse gas mitigation and in terms of efficiency, the trading of emission rights would ensure the cheapest mitigation options were pursued first, wherever they occur. International trading in emission entitlements would allow financial flows between countries and offset abatement costs in developing countries drawing them into an international policy framework (Garnaut, 2008:197)

The proposed targets for Australia were deliberately selected as it proposed to involve a comparable abatement effort by developed and developing countries, as Australia, all along demanded the participation of developing countries in international negotiations on climate change. The institution of emission trading would also ensure Australia's access to flexibility mechanisms through the Clean Development Mechanism (CDM) as Garnaut proposed 'developing countries have low cost mitigation options and so would be sellers of permits on the international market, international trading will also lead to transfer of low emission technologies from developed to developing countries and help them to meet the costs of adaptation into climate change' (Garnaut, 20th February, 2008)

The framing of climate change as a global collective action problem was further



articulated in the debate between free trade and climate change<sup>66</sup>. Whereas it is often acknowledged that free trade contributes to global warming, the idea of constraining free trade is rejected at the same time. The Garnaut review rejected the concept of border tax adjustments arguing that that climate change problem is a global problem which requires a global solution.

As the review pointed out (Garnaut, 2008:233) the Director General of the WTO, Pascal Lamy, recently commented, imposing taxes on imports to penalise countries with looser emissions controls would be a 'distant second best to an international solution' on climate change'. The global community had a strong interest in avoiding pressures for border taxes by moving sooner rather than later to the international agreements that avoid distortions in investment and production in trade-exposed emission intensive industries. Nevertheless, if an international solution is not forthcoming, the pressure, and indeed the case, for border adjustments would grow. It would be undesirable for border adjustments to be imposed unilaterally by any country, because of the risks that they would pose to global trade.

### **Targets and Trajectories: Scientization and Politicization of climate change**

According to the Intergovernmental Panel on Climate Change (IPCC)'s Fourth Assessment Report emission reduction by developed nations between 25 percent and 40 percent below 1990 levels by 2020, and reductions of between 80 percent and 95 percent below 1990 levels by 2050, would probably have stabilized the atmospheric

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<sup>66</sup> The framing of trade and climate protection became compatible with the dominant neoliberal economic consensus well illustrated by the stated objective of Article 3.5 of the Framework Convention on Climate Change ( UNFCCC) as it notes ' The Parties should cooperate to promote an open international economic system' and that 'measure taken to combat climate change, including unilateral ones should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade'. The Kyoto Protocol takes this further as the Article 2. 3 states that the 'developed countries shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects including effects on international trade'.

concentration of greenhouse gas emissions at around 450 ppm (parts per million) CO<sub>2</sub>-e and likely lead to global average warming between 2.0 to 2.4°C<sup>67</sup>. The Copenhagen Accord in 2009<sup>68</sup> adopted a target of limiting the increase in global mean temperature as it stated that the target is set ‘recognizing the scientific view that the increase should be below 2° Celsius’ (Copenhagen Declaration, 2009, Para 1). The target of 2 degrees Celsius meant that the atmospheric concentration of carbon dioxide CO<sub>2</sub> has to be below 400-550 ppm (parts per million).

The Garnaut Review proposed two different domestic emissions targets for Australia, each dependent on the success of Copenhagen in 2009 (Garnaut, 2008: 279), and more importantly based on costs associated with Australia’s adherence to an emission allocation, derived from international agreement. The review recommended an Australian commitment of greenhouse gas stabilization between 450-500ppm that corresponding to global agreement in between. The review considered international agreement around 550ppm to be the ‘first step’ and ‘a staging platform for more aggressive reductions at a later date’ and ‘far reaching enough to keep open the possibility of avoiding high risks of dangerous climate change’ (Garnaut, 2008: 279-281). The review clearly stated the vulnerability of Australian environments if the concentration of greenhouse in the atmosphere reached 550 ppm and would spell disaster where average warming of 1-1.5°C is already ‘dangerous’ climate change.

The review’s recommendation was that in absence of an international agreement ‘Australia should offer to play its full proportionate part in global agreement designed to achieve 450ppm with overshooting’ (Garnaut, 2008:279). Although the emphasis had shifted from 550 to 450 ppm the commitment remained conditional. The review was fully aware of the potential risks associated even with stabilization of greenhouse gas

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<sup>67</sup> [http://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/contents.htm](http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.htm)

<sup>68</sup> The Copenhagen Accord is the 15<sup>th</sup> session of Conference of Parties (COP 15) to the United Nations Framework on Climate Change.

concentrations at 450 ppm as it provided with a 50% probability of restricting global temperature increase to 2- 2.4°C by 2100 (Christoff, 2010)

In the Australian context, this would mean complete destruction of habitat. Studies conducted Preston and Jones (2006) from CSIRO have suggested that average warming greater than 1 degree Celsius but less than 2 degrees Celsius will most likely lead to significant losses of habitat across Australia and destruction of Great Barrier Reef.

The Review emphasized that the cost of early and effective mitigation action is negligible. In terms of GDP foregone, the difference between Australia adopting to 450 ppm target and emissions reduction trajectory over 550 ppm is 0.1 percent of GDP foregone. The review's recommendation to stabilize greenhouse concentration at 450-550 ppm was that economic growth need not be much harmed by reducing emission to stabilize below that. However, based on the negligible costs of mitigation, the Review's failure to propose a greenhouse stabilization target of 400 ppm or 350 ppm demonstrate the predominance of economic growth over scientific urgency and high risks for habitat and mankind. The review further demonstrates the politicization of scientific assessments, as failing to advocate a path and target to minimize the risks of catastrophic climate change for ecology and society and take a leadership on climate change issue. The debate about specific targets based on the narrow economic calculation of cost benefit analysis has been used to distract from the real question of the potential risks and consequences of adopting particular targets.

Garnaut proposed an overshoot emission strategy, of reaching the atmospheric greenhouse gas concentration of 550 ppm before being brought down to the global agreement of 450ppm CO<sub>2</sub>-e. The rationale for overshoot strategy of 550 ppm was considered the best possible outcome in the absence of any international agreement to reduce emissions at 450 ppm CO<sub>2</sub>-e. According to Garnaut the best way to achieve 450 ppm was through 550 ppm deal. The most significant normative judgment made by the review is the presumption that the economy should continue to grow with any possible emission scenario.

Mackintosh (2008) argues there are several risks associated with the overshoot strategy as scientific evidence suggests that an increase in global average temperatures even for a short period of time are irreversible and once the atmospheric greenhouse gas concentrations exceeds a particular threshold, there can be dangerous impacts which cannot be altered. Further there exists considerable uncertainty that by latter part of the 21st century the emissions reduction levels will be close to zero due to technological developments, political will and so on. Such conditions may not exist, preventing the required emission reductions.

Climate policy has been designed on the basis of current economic and material structures and how marginal emission reductions can be made from this starting point. The overarching global ambition to stabilize emissions around 450-550ppm is not based on any authentic and convincing analysis but rather an assumption that in principle it can be achieved and may be a containable warming, not triggering rapid subsequent change.

### **Cost –Benefit Analysis and Economization of Climate Change Mitigation**

The dominant framing of the Garnaut review was to define climate change in terms of the notion that greenhouse gas emission must be regarded as an economic problem and the role of cost benefit analysis (CBA) used in comparative pricing of policy with or without climate change mitigation action was to extend market-based forms of economization, calculation, measurement and valuation of climate crisis. As the review (Garnaut, 2008:247) states ‘to understand the potential economic implications of climate change for Australia, appropriate scientific and economic frameworks must be combined to estimate impacts. This is not a trivial task’.

Comparing costs of climate change and its mitigation was used as a central criterion in the review in order to justify and validate continued economic growth. The review made two assertions; First the costs of tackling climate change should not be

greater than that reducing the natural growth rate of a well-performing economy to zero. And second that if such damage was not tackled, the costs to growth of a worsening environment will be greater. The review states (Garnaut, 2008:268) 'the costs of well-designed mitigation substantial as they are, would not end economic growth in Australia, its developing country, neighbours or the global economy. Unmitigated climate change probably would'.

The economic framework adopted in the review is to distinguish between four types of costs of climate change and a clear distinction between market and non-market impacts of climate change and emphasizing that non-market impacts of climate change, such as deterioration of environmental amenity, loss of species, biodiversity 'cannot be included in the modelling as it involves services that Australians value but which do not derive their value from market processes '(Garnaut, 2008:249). The review (Garnaut, 2008:245-275) calculated the net benefits from stabilization of greenhouse gas emission at 550 and 450 ppm CO<sub>2</sub>-e based on median market impacts ( those that can be estimated into a computable general equilibrium mode) and makes an explicit judgement outside of its quantitative modelling framework about the implications of non-market impacts such as species extinction and biodiversity loss associated with stabilization at 550ppm. It is worth quoting the paragraph in full (Garnaut, 2008:11)

*The fourth type of benefit (i.e. non- market impacts) is more difficult to conceptualise and quantify...the focus of Australian policy making, as in other countries is on maximising the welfare or utility of the Australians, we can think of utility function as rising with Australian consumption of goods and service and also a number of non-monetary services, such as environmental amenity, longevity, and welfare of people in other countries. If the comparisons of costs and benefits of the first three types of benefits from mitigation suggest a particular outcome, and it is clear from inspection that inclusion of the fourth might lead elsewhere. This could in principle be done by forcing a monetary value onto a particular non-monetary outcome. An alternative is to leave out the comparison of the monetary and non-monetary outcomes.*

In the application of Cost Benefit Analysis to environmental decision making, moral judgements about nature (classified as non-market impacts) are either placed altogether out the market frame of reference as irrelevant to welfare or utility or as commensurate

with the prices of other goods. The technique of cost benefit analysis is used as an intervention to promote a specific form of life i.e. 'utility-maximising' individual, by framing the preferences on its own terms integrated through the market. In practice CBA proceeds by assuming that 'consumer purchasing decisions are a proxy for preferences and preferences are a proxy for utility' (Heizerling, 2002:2314, c.f Lohmann, 2009:518). According to Davies (2013), a considerable effort is undertaken by economists and policymakers to construct hypothetical prices of externalities such as climate change, using techniques such as 'willingness to pay', cost benefit analysis to make them commensurable within market order of worth. As Lohmann puts (2009:518) 'Cost benefit analysis is about creating a new commodity- for 'trade-offs', based on counterfactual conditions'. The purpose of CBA is therefore to construct a hypothetical quasi-market in arenas of coordination, negotiation, persuasion, practical reasoning and decision making used by state agencies. The authority of economics to dictate a legitimate course of action becomes the basis of authority of the neoliberal state.

Garnaut's assessment of the costs-benefits of climate mitigation based on the general equilibrium model assumes both growth and equates 'cost' with Gross Domestic Product (GDP); economic growth measured by GDP is highly correlated with fossil fuel consumption resulting in greenhouse gas emissions. Estimates of the costs of climate change and costs of mitigation are expressed in terms of GDP forgone, and behind these estimates are a number of assumption are made about the counterfactual that is what would happen in the absence of climate change and abatement measures.

The GDP indicator is particularly inappropriate for the consideration of environmental issues and for longer term contexts (Dasgupta, 2001). In GDP calculation the core component of economic performance are changes in the stock of non-renewable assets referred to as natural capital and much of economic growth results in depletion of this natural capital. As Dasgupta (2008:6 c. f Helm, 2008:222) puts it 'GDP is not a measure of long run human well-being, meaning that movements in GDP are a poor basis for judging economic progress'. The GDP calculation does not take into account non-market impacts such as environmental depreciation, such as climate change together

with loss of habitat and biodiversity. Over the short term the effects of climate change may not be perceived large; over the long run the effects are profound. Hence GDP calculation is a short run indicator while climate change is a long run process (Helm, 2008).

The review adopts a graphical representation of different scenarios of costs and benefits of mitigation based on plotting the national utility or welfare in absence of mitigation and similarly with mitigation. The review shows that 'the two curves describe the shape of a fish, the body represents the excess costs of mitigation and the tail represent the net benefits of mitigation and so the policy question is whether 'the area of the body of fish exceeds that of the tail of the fish' (Garnaut, 2008:17).

The valuation of utility or welfare with or without mitigation under the model requires the construction of various hypothetical situation as Callon and Caliskan (2009:32) puts it 'sometimes the overall structuring of this multitude of encounters (i.e. things, agencies) can be summarized in the form of the economist's famous diagram representing the intersection of two curves. But in order to be realistic, this simplification, which is possible, requires a long process of aggregation and abstraction'.

The proposal for a strong and early mitigation action was based on insurance value that is placed on avoiding the possibility of large negative outcome. In comparison to Nordhaus (2008) who advocated a weaker and gradual action to reduce emissions with less emphasis on risk and uncertainty, Garnaut's examination of the consequences of radical uncertainty favours the 'qualifications of the 'market' approach and a reliance on economic growth in order to deal with implications of uncertainty' (Butcher, 2010:7), described as competitive advantage which operationalises the price of carbon (Whittington, 2012). Uncertainty is necessary for markets to function as it invites speculative anticipation in terms stringency of carbon cap, how permits are distributed and how carbon is quantified and monetised each of which is difficult to establish in practice (Whittington, 2012). As Garnaut argues (2008:311) the market based approach is presented as providing a high degree of certainty as 'a well-designed emissions trading

scheme (cap and trade) can be relied upon to constrain emissions within the specified limit or trajectory’.

The review’s treatment of uncertainty and risk ignores deep long term uncertainty and converts asymmetric, irreversible long terms risks into the certainty of equivalent damages. In orthodox economics, the technique to deal with uncertainties is to either represent it in terms of mathematical probability or risk or to allow markets to convert uncertainty into a price. The price of carbon in CBA literature focussed on the specific ‘social costs of carbon’ rests on the assumption that individual preferences are fixed and utilities can be aggregated and converted into mathematical equations as the basis for climate policy. According to Ackerman (2004, c.f Barker, 2008:6) ‘CBA does not yield the transparent or objective evaluation of benefits, rather it renders the discussion of benefits obscurely technical, excluding all but specialists from participation. At the same time political debates continue behind the veil of technicalities as rival experts batter over esoteric valuation problems’.

The general equilibrium model has been criticized on account that the model is dependent on flawed assumptions about human behaviour and physical systems such as climate change and one which is based on rigid, and ill-informed interpretation of utilitarian ethics (Barker, 2008). According to the principles of utilitarianism, human beings are considered rational utility maximisers and resources are allocated to achieve maximum aggregate utility. However, as Davies (2008:56) points out correctly ‘utilitarianism does consider people as autonomous agents with rights and feelings but as inputs and outputs in a model as it is an administrative and expert technique which shapes behaviour by tweaking incentives, in the case of carbon market through tradeable units.

## **Discounting**

The aggregation of costs and benefits of climate change mitigation is contentious and a matter of ethical consideration as the costs of mitigation is incurred now and the



benefits of it are expected mainly in the long term future. The concept of discounting is used by economists to bring the costs and benefits in a common timeframe and therefore the rate of discounting becomes critical in design of policy prescriptions. As the review acknowledges (Garnaut, 2008: 18) ‘nevertheless any view formed on discounting is important also in an assessment of qualitative climate change impacts in the longer term and their implications for mitigation policy today’

The Garnaut Review adopts a normative approach to lower discount rates as he argues that consideration of risk and equity is fundamental in choosing whether and how much to reduce emissions, and that the ethical implications of parameters in the social discount rate need to be considered explicitly. The review uses a rate of pure time preference of 0.05 percent as critiques argue that a sufficiently low time preference rate over future utility, the balance can be tipped in favour of action now (Helm, 2008). The real source of the proposal for strong and early action comes from the ‘fat tail’ proposition, the low probability of a rapid and damaging climate change. As the review argues (Garnaut, 2008:20) ‘if considerable weight is given to the bad end of the probability distribution of outcomes from climate change, there is a possibility that utility may be lower for many people in future than at present’.

Apart from a moral justification towards low discounting rate the review also makes a point that normative judgements are not enough to base decision making and it should be left to the market rate that is judged to be appropriate. The market in this case represents the ‘revealed ethics’. As review state (Garnaut 2008: 21)

*‘The review judges that a normative approach is warranted on the issue that affects society as a whole over long time frames and on fundamental issues. Yet the justification of the discount rates used does not rely on using a normative approach. Rates that the review derived from analysis, straddle the market rate that is judged to be most appropriate. In this case at this time there is no conflict between normative and positive approaches’.*

The review’s adoption of positive market rate in deciding the discount rate has

been fiercely debated as to whether it is an appropriate guide to social welfare, across generations. Discounting is considered unethical, conducted on the basis of economic growth, reducing the utility of consumption over time. The application of generational equity is contentious as it places the complexity of incorporating the interests of the future generations into institutional decision making of the present (Curran, 2011)

### **Technocratization of Climate Change through Construction of an Australian Emissions Trading Scheme (ETS)**

The construction of an Emission Trading Scheme was the central piece of Garnaut's Climate Change Review as the report recommended (Garnaut, 2008:321)

*An emissions trading scheme will correct the major market failure associated with climate change by establishing the right to emit greenhouse gases to the atmosphere as a tradeable commodity. It is the most direct instrument for securing Australia's emission reduction.*

The preferred policy measure within orthodox economic discourse is an emissions trading system because markets are considered to be transparent efficient and cost-effective, thanks to pricing mechanism. The standard story is that of a 'market failure', increasing concentration of greenhouse gas emissions presented as a failure of the price mechanism, the failure of the market to cost the damaging effects of the build-up greenhouse gases. The negative externality of such environmental damage can be best rectified by simply putting a price on carbon to reflect the economic costs of externality, and to do so by setting a cap on emission rights, issuing emission permits and establishing an emissions trading system to enable trade in these permits.

The notion of 'externalities' was first introduced in the welfare economics of Arthur Pigou (1932) and was a boundary object separating 'economic' from the 'social', private and the public. According to Pigou (1932), externalities refers to types of costs and benefits which cannot be accounted in market exchanges, but spill over to affect third parties who are external to the transactions. In the domain of climate crisis, the 'externality' affects a large population who are external to the transaction and becomes a

problem of 'public goods'. Contrary to Pigou, Ronald Coase (1960) criticized the notion of externalities redefining it as a problem of under-defined property rights. The institution of property rights becomes crucial in mediation between 'economic' and 'social', 'public and private'(Davies,2010).

The notion of market failure is seen in relation to the idea of a perfectly competitive market or the efficient market hypothesis and the assumption is that *laissez faire* is the most effective arena in which to pursue the objective of reducing emissions. Neo-classical economics contends that when economic actors are producing emissions or are suffering the damages are fully informed about the value of the economic activity, by participating in the markets they can make rational decisions in order to maximize benefits and minimize costs in order to optimize their utility or welfare. It is proposed that economic agents can play an optimising role in greenhouse gas emissions only if they are informed of the social costs of emissions, signalled through real monetary costs, prices accordingly reflected in producers cost structures and in market prices.

The 'market failure' arises because economic costs associated with greenhouse gas emissions are not priced and therefore both producers and consumers are not able to factor these costs into their calculations<sup>69</sup>. This situation can be corrected if the costs associated with those suffering negative externalities are captured in price and cost structures. Negative externality costs should be included in the least cost point of

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<sup>69</sup> The idea of economic agents respond efficiently in a cost-effective manner is based on neo-classical economic principle of methodological individualism i.e individuals are essentially rational utility maximisers. According to neoclassical economists, economy and society is comprised of a collection of 'economic agents'. The basic premise of micro-economic analysis is that exchange of goods and services occur voluntarily between self-interested agents to the benefits of both parties. The mutual exchange to maximise utility or profits between producers seeking transactions with consumers set a price depending on supply and demand thereby selling at a highest price or buying at the lowest. Under these assumptions idealized markets tend towards an equilibrium at a price where the quantity of a particular good supplied is matched by the quantity demanded at that price. In this context the firms are also believed to act 'rationally' be seeking maximising profits and minimise losses. Further qualification to this model is individuals and firms interact a historically, isolated from context, history and connections between each other, through an impersonal and inclusive market.

production and the efficient price. The foundation of constructing a carbon market is thus based on an axiomatic principle: putting a price on carbon captures the marginal social cost of greenhouse gases the cost to society of emitting one extra unit of emission. (Garnaut Review, 2008, Ch 1). The review states (2008:317) 'the very purpose of a market based approach to mitigation policy is to enable producers and consumers throughout the economy to determine the most effective response to meet a mandated emissions limit'.

The notion of *laizzez-faire* is where the neoliberalism differs from early liberalism as instead of delimiting the scope of the state so as to enable spontaneous and natural market forces to arise, neoliberalism treated markets as artefacts depend on constant legal and technical intervention by state agencies (Davies, 2010). The economic exposition of 'market failure' in climate change crisis points to the next step, to develop a conceptual basis for government regulatory intervention in order to fix such 'market failure' in the design of an emissions trading.

Reflecting this the review calls for adequate government intervention as a 'governing rule' (Garnaut,200: 311) in the functioning of a well-designed trading scheme including the limit on emissions, the creation and issuance of permits, the roles of government and other bodies in operating the scheme. The review puts forward strict and defined government intervention in both supply and demand of emission permits as it states (Garnaut, 2008:312)

*The supply side of the market is represented by the government controlled issuing of permits in accordance with an agreed emissions reduction trajectory. As such the Australian emission profile is capped by the force of law. No further measures are required to control national emissions in covered sectors. On the demand side are all goods and services whose production or consumption results in the release of emissions. There are innumerable decisions by households and firms that, when summed determine the economy wide demand for permits. The demand side of the market is given force by the government requiring emitters to acquit permits if they wish to release greenhouse gases to the atmosphere. In doing so the government must have the administrative machinery to enforce such a requirement credibly.*

The review's mix of the 'market' and 'regulatory' approach is contradictory and confusing as on the one hand it prescribes a detailed legal and technical intervention by state agencies on the other hand it portrays a devout faith in the market 'without the need for bureaucratic clairvoyance in relation to prices or mitigation options and costs' (Garnaut, 2008:311). The review further emphasizes (Garnaut, 2007:317) 'programs and other regulatory interventions- whether federal, state or territory- that seek to reduce emissions from specific activities covered by emissions trading scheme will not result in lower overall emissions'. The confused and contradictory mix of market and regulatory approaches is considered well suited in the construction of an artificial market of carbon trading (Butcher, 2010). As Butcher puts it (2010: 55) 'the abstract nature of the commodity that is produced, combined with complex and uncertain nature of the biological system that is being protected result in complex regulatory response needed to effectively constitute the market'<sup>70</sup>

The review draws considerable attention to the issue of transaction costs associated with emissions trading, as it states (Garnaut, 2008: 13) 'as with any policy intervention, an emissions trading scheme will involve transactions costs that represent a deadweight loss to the economy'. The transaction cost was famously criticised by Coase (1960), challenging the assumption that markets are uniquely efficient ways of coordinating choices which ignored the problem of transaction costs associated with all institutions including markets. Transaction cost recognize that all forms of socio-economic coordination have some costs attached to them, in terms of contracts, negotiations and uncertainties that characterise the creation and running of institutions (Davies, 2010). The Garnaut review explicitly draws attention that the role played by legal, regulatory and administrative structures in operation of emissions trading scheme will ensure lower transaction costs. However as per the Coasian definition, the state

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<sup>70</sup> Denniss (2008) in his analysis of CPRS highlights how rules of CPRS create incentives for households not to undertake voluntary actions because this would reduce the costs of permits to industry.

agencies are themselves transactions costs and so sovereign law is just another institution to be subjected to a single blanket efficiency audit and to be criticised in terms of its effect on price (Davies, 2010). So there is no ideal vision of how the economy or market should be structured but a constant critique of plans, policies and institutional design of public authorities.

Transaction economics abandons the idea of perfect market and focus on how markets can be most efficiently handled (Coase, 1960), the answer to which is that it may be more efficient to regulate public goods through the artificial creation, formalisation and distribution of property rights. According to Coase (1960), the economic efficiency is achieved as long as property rights are fully defined and that free trade of that property is possible. The Garnaut review in alignment with Coase, suggested that the efficiency of emissions pricing will result 'by generating rents from the scarcity of the permits' (Garnaut, 2008:13). However, the review makes an explicit rejection of allocation of free permits by the government, as it stated (Garnaut, 2008:317) 'Don't pick winners fix market failures'. According to the review, free permit allocation not only involves high transaction costs but also requires value based judgements as to who is most deserving.

The review recognised that emissions-intensive, trade-exposed industries were most deserving for they would experience a competitive disadvantage in having to compete against industries not subjected to an emissions regulatory scheme and so therefore it proposed a compensation package by the government to rectify the disadvantage. The rejection of 'free permits' recommended by the review is difficult to sustain as it argued for an emissions reduction target that would not compromise economic growth equivalent to increased concentration of greenhouse gas emissions. The privileging of the economic imperative over the abatement objective is further apparent from review's proposal to link the emission trading system with the unrestricted possibility of purchasing international carbon offsets providing elasticity to national emission market (Rosewarne, 2010).

As discussed in Chapter 7, The Carbon Pollution Reduction Scheme (CPRS) announced by Prime Minister Rudd allocated free permits to emissions-intensive, trade

exposed industries for up to 90% of their emissions. The CPRS embraced the proposal of carbon offsets, recognising that such offsets need not necessarily be Kyoto compliant, further lobbying for promotion of REDD+schemes.

## Conclusion

The Garnaut Climate Change Review, 2008, was an influential climate policy document and large intellectual project. The review's recommendations attained bipartisan support of both major parties for an emissions target range, as well as a series of conditionalities for moving from a 5 percent reduction up to a 15 or 25 percent reduction in emissions by 2020 (Climate Change Authority, 2013, c.f Jotzo& Dodds). The World Wide Fund (WWF) other civil society organization, industry coalitions in their public submission to Garnaut review expressed long held support for a price on pollution as the primary mechanism to reducing greenhouse gas pollution.

The review provides a useful coat hanger to examine the close loop of science and economics of climate change. However, the findings and policy recommendations based on principles of neo-classical economics are orthodox, conventional and one-dimensional, and are open to serious challenge. The review replaces political, moral, social judgements of climate crisis with economic evaluations and more evaluations offered by the market. The market-based principles and techniques of evaluation are extended towards the valuation of nature, state and society. The reviews assumed that there is exist a straight substitution between environmental and man-made capital, and therefore indefinite economic growth should continue, adding to material wealth and consumption as long as man-made capital is created faster than the environment is depleted.

The rhetoric of the market as an epitome of objectivity, perfection, exactitude is shrouded in contradictions, and confusions as the review frequently asserts regulatory control of the government in every step towards the design and implementation of

emissions trading. The authority of neo-classical economic method required constant affirmation and institutional support. The review's proposal for a technocratic market brings forth the explicit role of state and sovereign law in defending and protecting market structures with an objective of continuous economic growth and unfettered capital accumulation. The establishment of an emissions trading scheme was an instrumental rationality in continuation of the extraction of fossil fuels to advantage polluters and other vested interests, especially the finance sector to oversee the trade in carbon permits and carbon credits.



# Chapter 7: Carbon Pricing and Kevin Rudd

## Introduction

This chapter examines in detail the specificities of Carbon Pollution Reduction Scheme (CPRS), a domestic emission trading system introduced by Prime Minister Kevin Rudd in 2008. The announcement of CPRS was the culmination of the previous two decades of government's initiatives (from Hawke to Howard) and debates about carbon pricing as an effective mechanism for climate change crisis.

The aim of this chapter is to critically examine 'the politics of market design' of the CPRS; the entanglement of permit and offsets based on two competing logics: cap and trade scheme was about setting of an agreed 'cap' or limit on the emissions of firms and then allocated permits, which the firms in turn can trade. Offsets are 'a baseline-and-credit' scheme, which sets an agreed the measurement of level of emissions for firms against which a net reduction in emission generate credits. Offsets are used to justify continuing emissions of an equivalent quantity of greenhouse gases. Cap- and- trade implied a transition towards an agreed goal whilst offsets relied on ongoing expert assessments against a certain set of rules and must reconcile proposed projects with regulations.

In contrast to the claim of the naturalness of a 'free-market' as the most efficient mechanism, this chapter demonstrates that the 'free-market' is a constructivist project based on regulatory neoliberal intervention by the government. The establishment and institutional arrangements of the CPRS portrays the market as a legal-technical artefact governed by a complicated, cumbersome set of economic *agencements* around carbon emissions, specifically the authority of economists and economic models in conjuring up the market. The production of carbon commodities in the form of cap-and-trade units and offsets in supporting the carbon trading dogma was based on orthodox economic assumptions that the externalities of climate must be considered as a market failure

which can only be corrected by instating a market.

The *abstraction* of carbon market via carbon commodity exemplified an intimate relationship between the socio-ecological governmentality and primitive accumulation linking the notion of climate change to the power-knowledge apparatus of political economy based on the discourses of green growth, national competitiveness and so on. Against the background of the financial crisis of 2008, CPRS was a novel configuration of governmental practices aimed towards the incorporation of environmental limits as the new terrain of accumulation and valorization of capitalist production.

The establishment of the CPRS was a crisis displacement strategy of the government to distract from the fossil fuel to the use of government regulation to allocate the costs of abatement on national and international scale. The CPRS first and foremost granted the firms the formal rights to pollute. This was further exacerbated with the proposal for an unlimited access to international carbon offsets to displace the task of emission reduction elsewhere spatially and temporally and to maintain unabated emissions at the national level.

The state played an explicit role in providing the technical and legal infrastructure in the functioning of the CPRS in the form of the free allocation of pollution permits equivalent to the property rights. Up to 50 percent of emission rights in the CPRS were allowed to come from international offset carbon credits and the use of domestic 'carbon farming' offsets. A novelty of the Rudd government was the initiative on Reduced Emissions from Deforestation and Degradation (REDD+) in the developing countries to provide incentives to protect and better manage their forest resources and recognizing a financial value for the additional carbon stored in trees not emitted to the atmosphere. REDD+ draws attention to the role of state as perpetrator of violence and proliferation of actors, knowledge infrastructures, experts and mechanisms involved in governing nature, population and societies beyond national boundaries. Carbon forestry offsets through REDD+ was the new 'commodity frontier' for capitalist production, reproduction and expansion aligned with 'new forms of dispossession' of communities from land,

based on state force, brutality and expropriation.

## Carbon Trading as Neo-liberal Governmentality

Drawing from a Foucauldian perspective, carbon trading is a contemporary state of the art in environmental governance based on neoliberal interventionism where 'one governs for the market and not because of the market' (Foucault, 2008:121). Carbon trading was popularized by protagonists of the neo-liberal green economy from the 1990s onwards. Adopting a Foucauldian-Marxist framework, the construction of a carbon market as a governmentality is based on *abstraction* of nature blurring the 'natural distinctness' of use-value and 'economic equivalence' of exchange value (Marx 1973:141). From Marx's perspective a commodity is any useful thing or object that is rendered available for exchange with other commodities through the application of human labour; as it is inherently a social phenomenon (Marx, 1990, Capital-I). Marx analysed the social nature of commodities, describing the relationship between different commodities that are brought into equivalence through the market. According to Marx commodity is use-value commodity is produced, but has not yet been sold or exchanged. It must make a fatal leap (*salto mortale*) of abstraction from production to consumption for value to be realized. It is only after the commodity is sold or exchanged that the value created in the production process is realized.

This leap of *abstraction* takes place in the construction of carbon market where the carbon is made into a quantifiable commodity; it opens up the possibility of exchange, with other commodities, constituting a new form of enclosure for capital accumulation. According to Leonardi (2012 :204) ' carbon trading represent an active and productive bio-political governmentality via governable objects (tCO<sub>2</sub>e, EUAs, CERs etc.) as well as governable subjects (green consumers, carbon neutral corporations, carbon traders, accountants etc.)'

Climate crisis dubbed as a market failure can be solved by a market- based on a

set of incentives as it is assumed that markets have failed because of 'imperfect information' (UNEP, 2011:16). So the proposed solution is to collect data which will provide a competitive drive to internalize negative ecological externalities. In conventional environmental economics, emissions are considered as 'externalities' which result in costs not reflected in the price structures and costs of goods and services. The neoclassical economics suggests that such externalities can be corrected through the imposition of economic incentives to create a 'correct price' which will reduce these externalities and lead to optimal level of environmental control. The social costs of pollution need to be reflected in the prices of goods and services and economic decision making. There are three possible policy solutions to this: emissions trading, tax, or government regulation.

The preferred policy solution is that of privileging emissions trading, as the market is considered to be the superior coordinating mechanism which can address the problem of market failure. The fundamentals of emissions trading are based on the capping of emissions and of allocating rights to emit. These rights are then traded, resulting in permit prices which reflect the social cost of emissions. The costs of emitting pollution are internalized in the market price that captures the true cost of producing a good or service. Such internalization requires creation of carbon commodities and simultaneous constitution of markets. Thus the ceaseless accumulation of capital is intertwined with a close system of ceaseless externalization and internalization of nature. In neoliberal parlance 'the prescription for market failures is always more markets' (Mirowski, 2013:7).

The theoretical foundation of the market solution to environmental problem can be traced back to work of Pigou (1932) and Coase (1960) where negative environmental externalities were attributed to the absence of markets and property rights in relation to the environment. The concept of externalities and market failure were developed by British welfare economist, Arthur Pigou (1932) where the two-way relationship of exchange has an impact on third parties who are not party to this exchange, what is known as 'tragedy of commons'. The role of economists and economics is crucial in

determining what can and can't be included within market calculations and therefore they become crucial political actors in the production and reduction of externalities (Callon and Caliskan, 2009)

The objective of Coase's paper, the Problem of Social Cost was in line with Pigou as he asserted that 'the economic problem in all cases of harmful effects is how to maximise the value of production' (Coase, 1960:15). However, Coase made a direct attack on Pigou and the tradition of welfare economics as he argued that an attempt to internalize social-environmental costs through taxation (Pigou, 1932) misses the true nature of the matter. Coase redefined the analysis of externalities by treating all costs in reciprocal terms rather than distribution of costs between private and social sphere as proposed by Pigou. According to Coase (1960) in the economic process the environmental cost presupposes the existence of producer who causes damage to other actors. By making costs a reciprocal exchange, harmful effects of externalities are distributed to all parties i.e. polluters and non-polluters all are made responsible.

According to Coase (1960:2) the reciprocity of costs transforms in a problem of 'avoiding the more serious harm'. As Coase (1960:27) explains

*The problem which we face in dealing with action which have harmful effects is not simply one of restraining those responsible for them. What has to be decided is whether the gain from preventing the harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm.*

According to Coase, economic efficiency in a situation marked by externalities is better fostered by clearly defining property rights, reducing transaction costs and allowing economic actors to freely negotiate the achievement of the best position. Thus Coase proposed quantifying social-environmental damages and allow them to be translated into property rights to 'freely' circulate in competitive market. The allocation of property rights will result in optimal equilibrium to be defined in terms of market efficiency and all this would maximise the total value of production. Under Coase's argument (1960:34) , from an economic point of view, a situation in which there is

'uncompensated damage is not necessarily undesirable'. Taking action against externalities depends on national optimal level of pollution that will maximise the value of production.

Thus nature becomes an element of valorisation through the market based configuration of the notion of externality. Coase's (1960) theory aptly exemplifies the valorisation of nature in neoliberal governmentality through the triadic assemblage of nature-market-political economy. In Pigou's theorem (1932) the state had to intervene in order to correct market failure whereas in Coase (1960) the state has to create the conditions for a market of externalities to be established and to properly function on its own terms. According to Coase (1960) the role of state action should only be limited in facilitation market transactions; to costs associated with market exchanges, contracts, legal resolutions and of course government intervention.

Coase further concedes that there may be some situations for example smoke nuisance affecting a large number of people where transactions costs are likely to be large- in which government intervention is appropriate. Coase state (1960:118) 'there is no reason why, on occasion, such governmental administrative regulation should not lead to an improvement in economic efficiency'. Based on Coase's argument, the neoliberal claim of the market as the most efficient is a fallacy and more so in the carbon market where the transaction costs are large and climate crisis affect a large number of people. As Davies (2009:18) puts it correctly 'there can be no a priori commitment to any one economic structure, as the question of efficiency is a matter of careful empirical analysis and not something that can be specified as a stable formal -legal category. It follows from this that certain types of competitive, market behaviour might potentially be inefficient and non-competitive behaviour may be efficient'. According to Coase a clarification of property rights might often serve as a more efficient alternative to traditional regulatory intervention and a trading and pricing system will result in greater aggregate welfare than reliance public experts through taxation.

Foucault correctly notes (2008:163) where classical liberalism used the state to

discipline the market, neoliberals such as Coase developed emissions trading and market mechanism to demarcate the limits of state action. However, this does not mean that the state cedes powers to the market, as under neoliberalism 'the juridical gives form to the economic'; as law becomes a tool with which to construct and formalize a competitive market economy'. According to Foucault neoliberalism rests on a paradoxical relationship between sovereignty and economics, whereby the state is employed to remodel society according to market principles but is deconstructed and ridiculed through the targeted use of economics (Davies, 2013). The neoclassical economic grid of price and transaction costs are extended as a critical audit and test of governmental action and public authority. As Foucault states (2008:246) 'the economic critique the neoliberals try to apply to governmental policy is also filtering of every action by the public authorities in terms of contradiction, lack of consistency and nonsense'.

Davis (2009) argues that the paradox of neoliberal state is that it is managed by self-loathing bureaucrats who are tasked with constantly criticizing its own rationality and efficiencies of state-action. Davis (2010:69) cites the presumption of neoliberals is that 'what is most likely to undermine the efficiency of the status quo is therefore the intervention of those who presume to be able to improve on it'. The neoliberal vengeance on state is to also to attack centralized expert knowledge and judgements through market metrics of efficiency and collective sources of information such as Wikipedia. The contradiction of neoliberalism is that it requires alternative elites and experts such as economists, bankers, accountants and various methods such as benchmarking, best practices and so on to facilitate its neutral, decentralized world view (Davies, 2009; Brown, 2015).

Carbon trading was devised from the Neo-liberal 'Law and Economics' movement as the objective was to displace the legal, moral and common sense view of 'right' and 'wrong' with measured outcomes and a priori incentives (Davis 2009). Here the market becomes a 'site of truth' (Foucault, 2008:31) in combining ethics, fairness, legality, efficiency and maximised outcome (Brown, 2015). For neoliberals social, legal requirements are 'nonsense' and need to be filtered by the markets.

According to Foucault (2008) the market as a site of 'truth' was closely related to its appearance as a natural mechanism which is not possible to decipher as the 'naturalness' is itself constructed through an exercise of power and authority. Along with the naturalness of the market, there are similar doubts about the natural price formation manipulated according to the relationship between cost of production and the extent of demand. Foucault argues:

*The market appeared as something that obeyed and had to obey "natural", that is to say, spontaneous mechanisms. Even if it is not possible to grasp these mechanisms in their complexity, their spontaneity is such that attempts to modify them will only impair or distort them...when you allow these natural mechanisms to function, they permit the formation of a certain price which will adequately express the relationship, a definite, adequate relationship between the cost of production and the extent of demand (Foucault, 2008:31)*

The naturalness of market and price formation is as contentious as there are true price or false price. The only purpose of price is to enable us to discern verification or falsification of governmental practice. That is the formal principles of market economy as an index to general art of government.

## **The Fall and Rise of Emissions Trading Scheme**

On December 10 2006, Prime Minister John Howard announced the establishment of a Task Group to reduce greenhouse gas emissions through an Emissions Trading Scheme. The scheme received bipartisan commitment to introduce a carbon pricing mechanism as an effective and efficient mechanism for climate change mitigation. The task group report known as the Shergold Report (2007) stated 'Australia enjoys a major competitive advantage through the possession of large reserves of fossil fuels and uranium. In assessing Australia's further contribution to reducing greenhouse gas emissions, these advantages must be preserved'. The report's recommendation was



introduction of an the emissions trading scheme<sup>71</sup> (ETS) which was soon followed by a federal election four months after its release, when the Rudd Government came to power (Sartor, 2010).

After the Rudd government was formed, the newly established Department of Climate Change (DCC) and Professor Ross Garnaut worked to design the national carbon trading scheme in 2008. The emissions reduction targets announced by the government were based on a series of conditionalities reflecting the approach by successive federal governments both Labor and Liberal. The CPRS white paper outlined targets of 5% below 2000 by 2020 on a unilateral basis or up to 15% below 2000 by 2020 'should countries reach a global deal that include commitments by all major economies to agree to substantially restrain carbon pollution and advanced economies take on reductions comparable to Australia' (Commonwealth of Australia, 2008: 3-2). The Department of Climate Change (DCC) (2009:1) specified these conditions in detail:

1. Comprehensive coverage of gases, sources and sectors, in the agreement with the inclusion of forests (e g REDD) and the land sector (including soil carbon initiatives e.g. bio-char) if scientifically demonstrated.
2. A clear global trajectory, where the sum of all economics commitments is consistent with 450 ppm CO<sub>2</sub>-e or lower, and with a nominated early deadline year for peak global emissions no later than 2020;
3. Advanced economy reductions, in aggregate, of at least 25 percent below 1990 levels by 2020; major developing economy, commitments to slow growth and then reduce their absolute level of emissions over time, with a collective reduction of at least 20 percent below business- as-usual by 2020 and a nominated peak year for individual major developing economies.
4. Global action which mobilises greater financial resources, including from major developing economics and results in fully functional global carbon markets.

The government defined 'a fully functional global carbon market' as Australia

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<sup>71</sup> Prime Minister Bob Hawke canvassed the idea of an emissions trading system through the establishment of Ecologically Sustainable Development Working Group in 1990. Following its establishment in 1998, The Australian Greenhouse office issued several reports pointing to the merits of emissions trading system (The Australian Greenhouse Office 1998, 1999)

having access 'to a broad range of international trading mechanisms'. As stated in Senate Hansard (Comley, 2009:4)

*We are not talking about how every country has to be participating in a particular market; it is just that there is a deep and liquid market available...if current global carbon markets or the expected growth of those disappeared so that you are in a situation where all abatement had to occur domestically, that commitment would not be met, and the nature of the global carbon market would have to be looked at by the independent review that would feed into the minister's decision.*

## **The Carbon Pollution Reduction Scheme**

Prime Minister Kevin Rudd announced The Carbon Pollution Reduction Scheme (CPRS) stating that the government is actively decisive about protecting Australia from worst effects of the global financial crisis and to tackle the long term threats of climate change. 'In delivering the Carbon Pollution Reduction Scheme (CPRS) the Government has sought to get the balance right: to secure Australian jobs while at the same time moving to the low pollution economy that will deliver growth and the jobs of the future' (Commonwealth of Australia, 2008: xvi).

The center-piece of the CPRS was a carbon market for greenhouse gas emissions: to put a price on carbon through the 'rapid development of a stable, well-informed and efficient carbon market which was appropriately monitored and regulated by the government to guard against market manipulation; will allow the Scheme to achieve emissions reduction in a cost-effective way' (CPRS, 2008: xxix). The CPRS further proposed construction of a secondary and derivative market to provide a reliable price of carbon for business investment 'enabling entities liable under the Scheme to obtain carbon pollution permits as and when required and to manage carbon risks' (CPRS, 2008: 8-1).

The CPRS (2008: 8-2) laid down the crucial design elements of well-efficient and

effective carbon market which were as follows:

1. **Transparent and Secure Property Rights:** If property rights are secure, market actors have confidence that they will receive the benefits flowing from their investments. Investors will be less likely to take the commercial risks if property rights can be easily overturned or ill-defined.
2. **Well informed market participation and state and transparent policy framework** .... Scheme participants to identify and understand the overall supply and demand conditions for permits, allowing efficient price discovery.
3. **Intertemporal flexibility:** Intertemporal flexibility is the ability of liable entities to shift the timing of their emissions and abatement activities to reduce their costs. Three elements could increase intertemporal flexibility: banking of permits, borrowing of permits and the length of compliance period.
4. **Competition and freedom from manipulation:** A well designed market will be difficult to manipulate through collusion or price fixing.

## **Making and Marketing Emission Reductions**

As Mackenzie (2009a) correctly notes that 'the politics of market design' that is formal and informal rules that govern them, regulated through government policies led to the emergence and conditions of possibilities of these markets. The establishment of the emissions trading scheme was intended to create a new market- a market in rights to pollute, regulated by the government. From an economic perspective the carbon market involved a major effort at shifting the 'calculation mechanism', by putting a price on greenhouse gas emissions 'internalize' the 'externalities' that they involve (Mackenzie, 2009a).

The cornerstone of creating a successful carbon market was the ability to 'make things the same' (Mackenzie, 2009b) According to Mackenzie there were two aspects to this process: how the choice of classification of emission rights had been institutionalized by accounting organizations, and second how different greenhouse gases were made commensurable through scientific atmospheric experiments, included in IPCC reports

and used in economic calculation. Both processes of accounting and commensuration require expert authority, technical coordination and institutional authority. The 'politics of market design' is therefore based on a nexus: the intention to define and demarcate the boundaries between necessity of economic transformation (cap-and-trade) and the process of compliance (baseline-and-credit or carbon offsets).

## **Carbon Pollution Allocation Scheme: Emission Permits as Property Rights**

From Coasian (196) neoliberal perspective, the problem of externalities carries costs associated with different ways of resolving the problem, not only to the affected parties but also costs associated with regulation, including those imposed upon the regulated actor. So it is more efficient in aggregate welfare for a perfect competitive market to function if the state extends and clarify property rights. Analysed from transaction costs it is more efficient to regulate public goods or externalities like climate crisis through the artificial creation, formalization and distribution of property rights than to introduce public regulations. The success of neoliberal economic order is therefore based on not only formalizing norms of competition but also norms of ownership and control by allocating property rights.

The CPRS proposed the allocation of carbon pollution permits as personal property rights 'which are issued and readily extinguished by the government'. (CPRS, 2008:8-3). As Callon and Caliskan (2009:26) argue that 'for the markets to functions it is necessary that 'things' such as carbon has to be compatible with the attachment of property rights as it enables the possibility of assigning the thing that is carbon permits to its owner in an unambiguous and unchallenged way'. The assignment of the property rights requires establishment of specific material, technical, textural legal devices essential in the definition of the nature of rights, and legal enforcement thereby, allowing owner to be identified without ambiguity. The efficiency of property rights stems from the fact that it is unambiguous and can be adequately internalized in economic

calculations. The attachment of property rights takes place through the *abstraction* of carbon commodity and its standardization enables disentanglement<sup>72</sup> necessary for further commodification.

Under the CPRS, the government committed to provide assistance and shield of emissions intensive trade exposed industries (EITEIs) including largest polluting firms such as aluminium smelting, steel and so on. The government's justification around assistance was to ensure competitive advantage for these industries, avoid carbon leakage despite Treasury modelling that leakage was insignificant and most importantly to ensure that these industries contribute to the national effort to reduce carbon emissions.

The proposed form of assistance to these industries was administrative allocation of permits, as it was stated in CPRS (2008:12-17) 'the main advantage of permits is that their price moves in line with the Scheme cost faced by an entity, which means providing assistance in this form eliminates the need for adjustments to the assistance because of changes in permit prices. This reduces administrative costs and provides greater business certainty'.

The government 'grandfathering' of the industrial structure and its emissions intensity was enabled by providing upfront free allocation of permits contingent on continued production and direct assistance for coal fired electricity generators (CPRS, 2008). Under the CPRS the allocation of free permits tended to use 'business-as-usual' baseline. Data regarding details of each recipient, their activities and historical information of emissions were uncertain, difficult to obtain and costly to obtain. More importantly as was the case in carbon accounting under Howard government data, numbers are susceptible manipulation. The government's objective of growth promotion

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<sup>72</sup> Callon (1998, c.f 2009:31) puts it 'economic markets multiply entanglements in order to prepare transactions and facilitate disentanglement. The Marxian notion of use-value implies these entanglements ..concrete markets are made up of both entangling and disentangling practices

and protection of industrial exports led to high baseline estimates as was the case with Greenhouse Challenge 21C under the Keating government or under NSW Greenhouse Gas Abatement Scheme. As quoted by a senior economist from Australia's Department of Climate Change on the proposed CPRS stated (Hartfield-Dodds, c.f Spash, 2010, 181)

*With very few exceptions, nobody is actually going to be measuring carbon emissions. It's not a matter of putting a gizmo in a smoke stack and measuring carbon as it goes past, it is really about getting the accounting systems in place.*

Under the CPRS the administrative allocation of permits by the government was an effort to reconcile emission trajectories with continued economic growth and this reconciliation was operationalized through the management of pollution permit allocations equivalent to attributing polluters a 'property right'.

The extent of Australia's dependence on fossil fuel and the dominance of large polluters was apparent that over a period of 22 month period from the time from the publication of Garnaut review to the CPRS white paper, the industry burden became significantly weaker as it showed strong signs of business lobbying (Bailey, et al, 2012).

The free allocation of emission permits, outlined in CPRS sought to valorize 'externalities' to ensure continued capitalist accumulation based on a close state-corporate nexus. As Helm argues (2008) climate change as market failure is as pervasive as government failure as it exemplifies regulatory capture by polluters, rent-seeking and pork barrelling within carbon market. It is important to recognise that under CPRS while permits in emissions trading were to be purchased by producers, the costs were passed on to the consumers. As Garnaut Review showed (2008:397) 'most domestically traded industries will be able to pass on the costs of an emissions trading scheme and thus will not require assistance to recover costs or avoid potential losses'. This finding of the Review clearly state out that industries not exposed to traderequiring any form of assistance or patronage from the government.

Granting property rights in emission permits, was crucial to the establishment and functioning of the carbon market and can be seen as new enclosures created by the government to further opportunities for capitalist activity and accumulation. The prospect of windfall profits in carbon trading were promoted by the banks, funds management and investments houses (Rosewarne,2010). Apart from the promise of profitable carbon trading, the government secured the conditions for production and accumulation that were dependent on fossil fuel and were threatened by emission cuts. The CPRS proposed a link between national emission systems with the possibility of unrestricted purchasing of carbon offsets, from Kyoto project based mechanisms such as Clean Development Mechanism (CDM) which further expanded the capacity of polluters to meet its emission obligations through the markets as the government formally endorsed property rights in sequestration activities as well. The role of state was dynamic in not only providing capital with possibility of trading a socially imposed limit on property rights but also the ability to produce 'additional' property rights in offsets. The CPRS articulated a specific role of state in privileging territorially defined energy interests, through the institutionalization in the global carbon market The Australian government gave clear indication that international offsets from reduced deforestation and forest degradation might be accepted in future.

Inspite of showcasing the merit of allocation of permits to ensure business certainty, Spash (2010) shows carbon price volatility is as common for any other commodities. Price volatility is further exacerbated by financial speculations. Contrary to the assertion of Garnaut, there can be no business certainties in emission trading and so primarily its attraction relates to the windfall gains of free permits and the ability to continue with production 'business-as-usual'.

## **Power of Price**

Callon and Caliskan (2009) notes that markets are an ongoing process of economization,

valuation of goods and things (for e.g. pollution permits) leads to fixing of a price, an outcome of a struggle between various actors involved in the transaction trying to impose their value and thus their price. Price becomes the main arbiter of value and maintains order and equilibrium in the society.

Under the CPRS the government proposed that ‘the scheme will put a price on carbon in a systematic way throughout the economy. It employs a ‘cap and trade’ emissions trading scheme to limit greenhouse gas emissions. Setting a cap on emissions means that ‘the right to emit greenhouse gases becomes scarce and scarcity entails a price’ (2008: xxvi). The pricing of carbon is intended to incentivise free initiatives (gains from trade), regulate scarcity of resources and provide a financial incentive for investment in low emissions technology stimulate innovations in the long run. The construction of a carbon market for climate crisis externalities is based on normative limitation of emissions (cap) and on creation of a market (trade) based on negotiable emissions permits where economic actors can exchange their quotas. The carbon market exemplifies a close contradiction between formalization of competition in society based the principle of parity as well as formalization of individual ownership and control through property rights of emission permits.

The foundation for the construction and operation of the carbon market lies in an active governmental management, with two consequences in its favour: setting a limit which means the right to emit greenhouse gas becomes scarce and scarcity entails a price. The crisis is therefore deliberately turned into an opportunity to make profit and continued economic growth, demonstrating a win-win situation for the government.

The notion of scarcity in carbon market has a close relevance to Foucault’s reading of Louis -Paul Abellie’s text on grain scarcity in 1763. Foucault (2007:30) shows that the in second half of 18 century scarcity of food entailed a rise in prices and as a result of the price rise those who possessed scarce objects monopolized them and so the prices would rise even more at the cost of basic needs of population not being met. The physiocrats and economic theorist grafted a governmental *dispositif* for dealing with grain scarcity in



way that the very naturalness of the scarcity under proper management nullifies its own reality. The grain shortage draws attention to political economy as an ensemble of knowledge and power that allowed a coherent and context specific management of fluctuations (Foucault, 2007:37)

The rationalization of economic agents responding efficiently to price is based on neoclassical economics principle of utility maximization. However, in practice the utility maximising proposition is far from true, as the design and structure of carbon market does not match the ideal market imaginary of neo-classical economics. Under the CPRS, the market price of carbon permits was effected by a series of factors such as the magnitude of a government cap, the confluence of permit supply, availability of international offsets, demand for permits, method of permit allocation and so on. Contrary to the neo-classical economic principles of price formation the above parameters were a product of administrative and governmental determinations. The emission trading system was a deliberate arrangement to principally engage producers and consumers in an artificial emission pricing/permit market.

### **Fixing the Floor in ETS**

Under the CPRS, the government not only regulated a 'cap' above which emissions were not allowed to rise at the same time it also imposed a 'floor' below which emissions could not fall (CPRS, 2008). Based on Australia's national emissions target, the government decided on an acceptable level of pollution and accordingly would issue a corresponding number of pollution permits. For example, the overall emission target set by the Rudd government to reduce its emissions by 15 percent on 2000 levels by 2020, emissions would total 85 percent; this meant that even if households and small business take deliberate action to reduce emissions, Australia would continue to emit general emissions corresponding to 85 percent of its total emissions. This significant policy problem was raised by NSW price regulator, the Independent Pricing and Regulatory Tribunal (IPART, c.f Deniss 2008) as it stated:

*Under an emissions trading scheme, the quantum of allowable emissions will be fixed. The limit on emissions will apply to all emission sources covered by the scheme. Additional measures to reduce emission in sectors covered by the scheme would not result in an increase in emissions abatement-under the global cap, the emissions avoided through undertaking an additional measure would result in an equivalent increase in emissions elsewhere. How and/or where emissions are reduced changes, not the amount.*

Under such scenario, Australia will continue to emit greenhouse gas corresponding to 85% of its emissions in 2000. The only varying factors under such arrangement will be 'who pollutes and what price they pay to do so' (Dennis, 2008:1).

The government's decision to introduce a price floor is significant, as under such arrangement there are no scope for households or anyone concerned about climate change to make meaningful contributions. If households or small households or small business use less energy they will simply free up permits to be used by polluters to increase their own emissions, who are now able to purchase permits at a lower price. The allocation of pollution permits by the government within different sectors of economy is meant to work in a way that if one sector of economy achieves deeper emission cuts it would mean other sectors can avoid making similar reductions. Under the CPRS setting the 'cap' and 'floor' means that there is nothing households can do to reduce Australia's emissions. So if households decide to increase energy consumption that would mean increase of permits by coal-fired power stations.

Thus imposition of a 'floor' to emissions would inhibit households to take voluntary or deliberate actions to reduce emissions than their current practices. As Fear and Dennis (2009:11) note 'A fundamental flaw in the design of the proposed CPRS is that the entities issued with permits, by and large the big polluters, will continue to 'own' the spare permits that result from emissions reductions, even if those reductions are a consequence of efficiency gains made by individuals or state governments. The so called 'design feature' of the CPRS in fact destroys any non-price incentive for individuals to undertake additional voluntary measures to reduce emissions'.

Denniss (2008:2) explicitly demonstrated three confronting options for households

- 1) If households take actions to lower their energy use (for egg installing solar system, cycle to work etc.) demand for electricity will fall and as a result electricity companies will need to buy fewer permits. This will result in the price of permits to fall which other polluters will purchase at a lower than expected price.
- 2) If households decide to increase their energy use, raising electricity bill up to \$20 per week. As a result of increased energy use, electricity companies will end up purchasing additional permits, thereby increasing the demand and pushing prices up. This will end up in leaving fewer permits in the market available for other polluters who will need more to pay for the permits to cover for their emissions. In this case there will be not net change in Australia's greenhouse emission reduction
- 3) Buy carbon permits directly and rip them up, thereby deliberately removing permits from the system resulting in net decline of emissions. However, under the proposed CPRS there are no such option available for households as to purchase permits in order to rip them up.

As the government has the ultimate power to stipulate the level of emission reduction at the outset and emissions trading allocated that fixed level of pollution between different sectors of the economy, Denniss (2008) accurately described CPRS as Carbon Pollution Allocation Scheme.

With regards to bringing about desired change in behaviour amongst consumers to reduce their consumption of electricity or fuel due to increase in price, research conducted by Fear and Denniss (2009) demonstrated the demand for electricity is relatively price inelastic. What that means that the price of electricity or fuel forms small percentage of household expenditure, and as that a slight increase in petrol or electricity prices are not significant enough to stimulate behaviour changes among households and individuals. Contrary to the neo-classical economic principle that market incentives enhance intrinsic motivation under CPRS the price signal would 'crowd out' (Spash, 2010:189) climate friendly behavior.

The Garnaut review stated the ETS would provide individual the freedom to

respond to the correct price signal. But the operationalization of CPRS demonstrated households were largely disempowered in every possible way. The price becomes the nucleus of a new bio-political governmentality as Foucault (2008:270-271) shows that the notion of 'homo-economicus' is correlative of 'governmentality as it ceaselessly modifies environmental variables through which it penetrates the subjectivity of each and every one of the economic actors'. The conventional economic principle that economic agents in a free market exercise equal sovereignty is far from reality as the benefits of engaging emission trading was the prerogative of the polluting firm. The consumers are essentially alienated from the market (Rosewarne, 2011). As Wendy Brown correctly argue (2015: 83) '...this subject is so profoundly integrated into and hence subordinated to the supervening goal of macro-economic growth that its own well-being is easily sacrificed to these larger purposes'.

## International Offset Mechanism

Under the CPRS scheme Prime Minister Kevin Rudd proposed Australia's participation in international emissions trading derived from Kyoto compliant offset projects<sup>73</sup>. Carbon offsets are centred around the creation of emissions reductions, that can be traded as tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) on international markets. The creation of tCO<sub>2</sub>e is based on implementation of project activities, processes of calculation, justifying, monitoring and verification of emissions reductions.

The CPRS allowed unlimited use of international offsets to be used for compliance and legally recognised offsets such as Emission Reduction Units (RMUs) generated from

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<sup>73</sup> In order to be eligible to participate in flexibility mechanisms, Annex I parties were required to ratify the Kyoto Protocol, they must have calculated their assigned amount in terms of CO<sub>2</sub> –equivalent emissions, they must have in place a national accounting system for estimating emissions and removal of GHGs within their territory, and must have in place a national registry to record the creation and movement of emission reduction units (ERUs), certified emission reductions (CERs), assigned amount units (AAUs) and removal units (RMUs) and must report annually information of emissions and removal to the secretariat ( UNFCCC:2008).

Joint Implementation projects, Removal Units (RMUs) issued by another Kyoto party on basis of land use, land-use change and forestry activities and Certified Emissions Reductions (CERs) from Clean Development Mechanism project. The emergence of international offset mechanism in climate change governance can be traced back to the setting up of Activities Implemented Jointly (AIJ) put forward by JUSCANNZ countries (Scandinavian countries with USA and Australia) at the Conference of Parties (COP-I) in Berlin in 1995. The conceptualization of AIJ was intended to provide Annex I countries with low cost mitigation options in non-Annexe-I countries and to form an effective partnership in global action of climate change. It was recognized that technical and financial assistance from developed countries would help non-Annexe-I to reduce their emissions growth through transfer/ export of sustainable energy technologies.

The UNFCCC established Activities Implemented Jointly (AIJ) as a 'laboratory for the Clean Development Mechanism' (Michaelowa, 2002), a pilot phase of 'learning by doing' by the parties to the UNFCCC to gain experience for CDM and JI at a later stage, without a provision for crediting of emission reductions to the donor country. In 1996, Prime Minister John Howard announced Australia's involvement in the UNFCCC trial project of Activities Implemented Jointly (AIJ) stating ( Hill, 1996 : 1) 'our pilot AIJ project will be industry driven and will have a strong focus on the developing economies of the Asia Pacific region'. However, the real intention of the government in participating AIJ was to 'enhance Australian trade and investment links in environmental technology and services particularly in the Asia Pacific region' (AGO: 1999, c.f Schwarze, 2000 :259).

Further the government stated (Hill, 1996:2) 'that it is pointless to curtail the efficient activities of sectors such as coal and beef industries if they are only to be replaced by less efficient practices in other nations. The end result would in fact be a global negative for greenhouse limitation efforts'. Prime Minister Howard's contention was that reductions in GHG in a given place are ecologically equivalent to reductions made in any other place and that is makes no real difference enabling developed countries like Australia can continue with unabated extraction and use of fossil fuel.

Carbon offsets are the socio-material configurations, comprising humans and non-humans in the sense that the price and projects of greenhouse gas abatement a required variety of intermediaries to mediate between willing users, financiers, project managers and local residents. At the same time 'the material nature of the technology's engagement with the atmosphere, plays a crucial role in the effective commodification of tonnes of CO2 equivalent and its ability to be incorporated into carbon standards of differing levels of rigours'(Bumpus,2011:616). The different technologies mobilized in the creation of carbon equivalent referred to monitoring and reporting devices used by project developers such as aerial photographs, computer modelling, devised by experts such as economists and scientists. The technologies form only one aspect of commodification of carbon offset as they are mere appendages to wider political considerations of governments in respective nation-states and their management of economic growth and trade-competiveness. The material and discursive aspects of carbon commodification were interwoven as broader regulatory systems, governance mechanism institutions and 'tactics' are all present to manage conflicts and contradictions in the commodification of carbon (Bumpus, 2011). Carbon offsets (tonnes of carbon that are reduced) is a particular kind of commodity which is constitutively intangible and dependent on abstract calculation. As Bumpus (2011:616) puts it 'carbon offsets create a commodity and value out of piece of nature-carbon dioxide in the atmosphere -that if achieved properly, *does not exist*'. This abstraction of carbon makes it possible to the commodification of nature to systems of representation, as regimes of calculation and expertise making nature and territory legible and governable.

Governmentality scholars consider expertise integral to governmentality and CDM is an extension of neo-liberal governmentality as experts are indispensable as they create 'centres of calculation' to facilitate, shape and direct 'at a distance' or 'long distance social control' of the subjects of government. However, in advanced liberalism 'the constant demands for audit both witness to and contribute to, the erosion of trust and seek to establish new distantiated relations of control between political centres of decision and 'non-political' procedure, devices and apparatuses' (Rose, 1993:295)

The production and commodification of carbon offset relied on securing economic counterfactuals that represent an ‘additional’ carbon reduction that would not have occurred in absence of the project i.e. ‘making such projects the same’ (Mackenzie, 2009). The fundamental notion of ‘additionality’ is the difference between emission reductions produced by the offset project from a baseline level emission<sup>74</sup> without the project (Michaelowa,2005). The challenge of production of carbon offset lies in ‘severing the Gordian knot (Michaelowa, 2002) between baseline and additionality determination as experts become indispensable for government undertaking complex tests of additionality to make carbon offsets objective and transparent.

The objective, rational imperative of the market, dictates that the counterfactual must be a matter of determinate economic and technical predication optimized by expert calculation. The role of experts in the production of carbon offsets as commodities was crucial as counterfactuals have to be justified through expert judgements, in more ways than purely economic efficiency that is cost of the project per tonnes of carbon emission reduced. From the beginning carbon offset market was characterized by a huge distance between electronic ‘abstract’ fungible carbon credit numbers, and ‘concrete’ complex, local projects that produced them, entangled in a ‘Gordian knot’. The justification of projects in terms of measurable economic cost, social and political aspects of the project were obscured when economists try to sever the ‘Gordian knot’ between economics and politics by devising rules and calculation to transform project evaluation into quantitative assessment creating a ‘chimera’ that is both technically and politically impossible’ (Grubb and Vrolik, 1999: 227).

## Global Warming Potential

The several characteristics of greenhouse gas emissions make offsets possible as

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<sup>74</sup> The Marrakesh Accord define baseline ‘as a scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity’ (Michaelowa et al 2007)

different types of gases are bundled in a single unit of carbon dioxide equivalent (tCO<sub>2</sub>-e) using global warming potential (GWPs)<sup>75</sup> thereby making them tradeable. The CPRS covered all six greenhouse gases covered under the Kyoto Protocol. Different activities emit different types of greenhouse gases and these gases differ in their global warming potential the 'strength' of the greenhouse effect that they create. By covering all of the gases accounted for under the Kyoto Protocol, the Scheme would best encourage the broadest range of cost-effective abatement activities' (CPRS, 2008: xxviii)

Carbon offsets through baseline-and-credit system create assets: tonnes of carbon dioxide equivalent. The flexible approach of offsets was developed with the 'black boxing' of the global warming potential various greenhouse gases relative to that of carbon dioxide. The notion of Global Warming Potential (GWP) and its estimation made by IPCC in the 1990s, was agreed at the First Conference of Parties, establishing the concept of CO<sub>2</sub> equivalent later inscribed in the Kyoto Protocol. In order to develop a common benchmark for six greenhouse gases over a 100-year span, the GWP potential of 1 tonne of carbon was used as a baseline indicator. The time horizon of 100-year span used in the calculation of GWP is notable, as scientists suggest that different time horizons, for different gases such as methane and nitrous oxide. The 100-year reference point for CO<sub>2</sub> equivalence is used for the purpose of making gases commensurable. The concept of GWP was needed to build different scenarios for future projections of climate change which were based on different trajectories of greenhouse gas emissions. However, the scientific concept of GWP often incorporated policy and value judgements made by governments. The GWP allowed the governments to maximise their freedom to manipulate/manoeuvre by including as many greenhouse gases as possible rather than just CO<sub>2</sub>.

The notion of GWP became essential in international negotiations on climate

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<sup>75</sup> The IPCC expressed GWP as an index which allowed the climate effects of the emissions of greenhouse gases to be compared. The GWP 'depends on the position and strength of the absorption bands of the gas, its lifetime in the atmosphere, its molecular weight and the time period over which the climate effects are of concern' (Houghton, Jenkins & Ephraums, 1990:45, c.f Mackenzie, 2009b:6).



change as the comprehensive approach 'of all sources and sinks' demanded by JUSCANZ countries was not possible without it. The policy preference of 'comprehensive approach' spilled over into its representation of GWP. As Shackley and Wynne (1997:97) argue

*without GWP's the comprehensive approach would just not be feasible, and a 'carboncentric', command-and-control type of regulatory regime would have become more credible, a politically unacceptable alternative for the US government. In this political context, some ambiguity in the precise technical meaning of GWP's serves an important function, since it allows the implication to be made that the GWP is a measure of response as well as of the forcing. This in turn lends support to that policy response-the comprehensive approach- which is most politically desirable"*

The factual definitions of GWPs depend on the social authority of IPCC and demands for lower costs provided by carbon offset market in industrialized countries (Mackenzie, 2009b). The Carbon Farming Initiative for instance covered CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and perfluorocarbon (PFC) emissions from four sectors: stationary energy, industrial processes, non-legacy waste and fugitive emissions from mines. Through the inclusion of other greenhouse gases, the Australian government estimated that it will directly cover 60% of Australia's emissions under the Kyoto Protocol. The government purposely excluded a number of sources and sinks from the scheme such as CH<sub>4</sub> and N<sub>2</sub>O emissions from agriculture, emissions and removals associated with land use, land-use change and forestry (LULUCF), emissions from the use of transport fuels, hydrofluorocarbon (HFC). The government proposed 'equivalent carbon prices' on two excluded sources of transport and manufacture and importation of hydrofluorocarbon (HFCs) which is a reflection of a combination of climate forcing and policy response with regard to climate change.

## **The REDD+ Offsets Frontier in Asia Pacific**

A recurrent feature of Australia's climate change policy has been to access carbon offsets and sequestration initiatives as a crisis displacement strategy rather than reducing emissions domestically. Under the Carbon Pollution Reduction Scheme (CPRS)

carbon offsets emerged as a central preoccupation of Prime Minister Kevin Rudd, extending Howard's experiment in carbon offsetting initiated since 2000 through Land Use, Land Use Change and Forestry (LULUCF). Carbon offsets were only functional as a displacement strategy but it provided an avenue for accumulation as unrestricted use of offsets meant unrelenting growth and magnitude of greenhouse emissions at a domestic level.

In 2007, a report of the Prime Minister Howard government's Emission Trading Taskforce stated that an emissions trading system that 'recognises a wide range of offsets is highly desirable' and that 'an integral part of Australia's international climate change strategy should be to develop the elements of a future Australian approach to international offsets' (Commonwealth of Australia, 2007:11) Carbon forestry offset credits from Reduced Emissions from Deforestation and Degradation (REDD+) were soon recognised as a viable mechanism for global climate change mitigation based on the fact that deforestation and forest degradation accounted between 10-20% of GHG emissions and that forests were conceived as terrestrial sinks particularly useful for carbon sequestration capability (IPCC, 2007). The core objective of REDD+ was to therefore financially compensate developing countries to prevent deforestation and degradation of their carbon rich tropical forests.

It was in the 2007 Bali Action Plan, at (COP) 13, the role of forests was formally reinvigorated as carbon sinks. The COP stated that a comprehensive approach to mitigating climate change should include 'Policy Approaches and positive incentives on issues relation to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries' (UNFCCC, 2007)

Carbon forestry offsets from Reducing Emissions from Deforestation and Degradation of forests (REDD) in the Asia Pacific, as means to reduce climate change mitigation costs for Australia was initiated by Prime Minister John Howard when he made the first announcement of the Global Initiative on Forests and Climate (GIFC) on 29<sup>th</sup> March 2007, and announced AU \$200 million for projects in selected developing

countries in the Asia-Pacific region. Australia and Indonesia formed an alliance to pursue a market-based form of REDD by establishing a pilot REDD+ project called the Kalimantan Forest and Climate Partnership was announced 9 September 2007 (Friends Of the Earth International, 2011)

The search for REDD+ offsets initiated by Prime Minister Howard was carried forward by Prime Minister Rudd as he signed partnership agreements with Indonesia and Papua New Guinea (PNG) to participate in REDD+ offsets market. The Indonesia – Australia Forest Carbon Partnership (IAFCP) was launched in June 2008 as an overarching mechanism under which Australia would support a range of REDD+ related initiatives in Indonesia (Rudd, 2008). The IAFCP encompassed existing support for Kalimantan Forest Carbon Partnership (KCIP) and planned a second pilot programme in Sumatra Forest Carbon Partnership (Wong, 2010).

## **Governing Forests**

The political process of marketization under REDD+ was justified as a least cost and flexibility measure for climate change mitigation as corporations with compliance obligations or a desire to engage in corporate social responsibility could buy credits produced by REDD offsets located in low or middle income developing countries. REDD+ was a 'win-win situation as a financial incentive for forest conservation, a least-cost measure for climate change and a source of alternative livelihood for forest communities' (Pearce 2012:183).

Governing forests under bio sequestration activities through the market based policy initiative of REDD+ involved the mobilisation of human and non-human actors as 'action-at-distance' with an objective of demonstrating long term ownership and

permanence<sup>76</sup> over the quantified forest carbon resource according to international carbon accounting rules. Following Jason Moore's concept of *oeikos* namely the bundling of human and extra-human nature which structure the neoliberal phase of capitalism, the production of carbon forestry offsets required at the basic level a controversial equation such as:

'A molecule of CO<sub>2</sub> fossil origin = to a molecule of CO<sub>2</sub> biotic origin'  
(Lohmann,2011:107)

The creation of 'forest-carbon' as a unit of measure takes place through a complex calculation process of measurement, reporting and verification (MRV) as the value of forests is measured in terms of its capacity to absorb CO<sub>2</sub> which makes them useful for climate change mitigation (Lovell & Mackenzie,2015). The dominant discourse of forest carbon MRV was that in order for developing countries forests to be successfully incorporated into the UNFCCC under REDD+, rigorous 'compliance-grade' MRV system must be implemented at the national level. The MRV system measured both changes in forest cover (i.e. deforestation, reforestation i.e. the quantity of forest) as well as quantity of carbon per hectare i.e. the carbon stock or concentration (UNFCCC, 2009, Article 4)

The discursive and material set of practices and techniques of MRV constitute a governmentality as forests provide an 'administrative domain' of the government and how they 'shape the realm of the possible' (Lovbrand and Stripple, 2009:21). Bio-sequestration activities through forestry offsets represent an intimate relationship between experts on resource management and modern government. The genealogy of silviculture is important in understanding the recognition of forestry based carbon offsets through Clean Development Mechanism (CDM) or Reduced Emissions from Deforestation and Degradation REDD+, developed as flexible market based mechanism. Silviculture was considered as a 'state science' alongside the emergence of modern state (Foucault, 2007). James C Scott (1998:11) in his seminal work *Seeing like a State* draw

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<sup>76</sup> The UNFCCC Special Report on LULUCF defines permanence as 'the longevity of a carbon pool and the stability of its stocks'.

attention to forestry as a practice of state making it 'legible' by homogenising them according to rational and scientific principles so that 'an overall aggregate, synoptic view of selective reality is achieved making possible a high degree of schematic knowledge, control and manipulation'.

The early modern state emerged along with scientific principles of governing resources (Lowood, 1990) due to the resource management demands imposed by reconstruction efforts after 30 years of war; forestry scientists became civil experts for the government. Forestry science became a sub-discipline of cameral state, as Lowood puts it (1990:316) '*Camerlism* grew into *Staatwissenschaften* (the Sciences of the State) that included forestry, police science and transportation'. In 19<sup>th</sup> century Germany, forestry science first emerged with sophisticated experiments on modelling, statistical methods, corresponding to the demands for predictable wood supply to 'deliver greatest possible constant volume of wood' (Scott, 1998:14). Silviculture comprising a close relationship between government and quantification, monitoring and control of resources by experts resulted in the process of normalisation of forests or *Normalbaum* (from chaotic old-growth forests to a newer and uniform forest) emanating between the western tradition of scientific forests and capital's needs for forest valorisation and accumulation through continued supply of timber (Prudham, 2007).

Governing forests through bio-sequestration is driven by the possibility of the normalisation of forests in developing countries and can be described *epistemological colonialism* (Leonardi, 2012), The success of commensuration of forestry offset credits depends on mobilization of human and non-human actors in the demonstration of ownership and permanence of carbon credits and stocks.

Offsets from bio-sequestration projects are granted based on the assumption that the sequestered carbon will not be released back in the atmosphere for a prolonged period. The 'permanence instrument' is a rule that carbon stock is to be retained for 100 years (Section 86, Commonwealth of Australia, 2011) which required management of forestry carbon sequestration to be monitored over time and space with numerical

precision. The permanence instrument enables techniques of monitoring and accounting relying on allometric<sup>77</sup> equations for measurement of trees and their continued growth within statistical parameters (Lovell and Mackenzie, 2015). The permanence instrument represent governmentality and is performative centered on expert authority and the creation of devices and apparatus to quantify and monitor carbon over time. The ‘techno-politics’ of permanence has been contested because of the complexity and the tension between required permanence and non-permanence since carbon stored in biomass (Buzier et al, 2014; Passey et al, 2008, Noble et.al, 2001).

The laborious and problematic processes of mobilizing the methodological and technological foundations for quantifying forest cover and carbon stock place dominant economic interests at odds with environmental and social aims. Forests in the low and middle income developing countries emerged as the new ‘commodity frontier’ (Jason Moore, 2015) in climate change regime characterised by a frantic and active search for least-cost solution to global climate change mitigation in form of continual enlargement of geographical areas for appropriation.

REDD+ offset market further blurs the separation of economic rationality and exchange on one hand and violence and coercion on the other, as territorial sovereignty of forests requires violence of exclusion, a precondition of modern government. (Dean, 2007). The construction of ‘forest carbon commodities’ through equivalence, made commensurable with fiscal demands of the state, is achieved through forcible exclusion of local and indigenous people from the forests. The proponents of REDD+ belief that forest people should be compliant to the market forces by opening their territories and ways of life to the commodification agenda and voices against REDD+ are actively silenced and marginalized (Cabello and Gilbertson, 2012). With regards the equivalence

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<sup>77</sup> Allometric equation has its roots in emergence of Forstwissenschaft in 19<sup>th</sup> century Germany advanced along the lines established by early forest mathematicians: sustained yield, regulation according to age-classes and wood must and construction of ‘the normal forest’ as an artefact of mathematical reasoning applied to quantitative data

of fossil and biotic origin of CO<sub>2</sub> molecules, Lohmann (2011:108) rightly points out 'by ignoring the difference between these two carbons in terms of climate history, intensifies the climate class struggle in the same way, providing 'scientific' and economic sanction for extensive land grabs from the poor who are likely to be displaced at high human cost not included in the calculations'.

The Indonesian Australian Forest Carbon Partnership (IAFCP) in terms of both the Kalimantan pilot and Sumatran pilot project came under fierce criticism of the projects impact on indigenous populations access to land, and that it did not recognise customary Ngaju Dayak wisdom and local initiatives to rehabilitate the area and livelihood opportunities (Davies, 2015). REDD+ has been aptly termed as 'accumulation by decarbonization' (Bumpus and Livermann, 2008), based on eviction, dispossession of the poor, 'expropriation of peasantry' and depeasantization in the developing countries. It demonstrates capital's incessant drive towards the spatio-temporal expansion and restructuring is based on based on carbon colonialism thereby creating opportunities to reduce greenhouse gas concentrations to foster sustainable development through carbon offsets and to make profit out of carbon trading.

Criticisms of REDD+ has focussed on the ambiguous nature of forest definition as under the 2001 Marrakesh Accord there exist no difference between biodiverse forests and plantations. The Indonesian Australian Forest Carbon Partnership (IAFCP) in terms of both the Kalimantan pilot and Sumatran pilot project was believed to support palm oil plantation as a way of achieving large scale reforestation outcome (Davies, 2015). Erik Olbrei and Stephen Howes (2012) reported environmental targets for the project had been quietly downscaled since the project started and as of 2011 after three years of the Kalimantan Forest Carbon Partnership (KCIP) there was little evidence on ground of any reductions in deforestation and forest degradation.

The project was a stated funded governance process involving multiple actors, development formal (legal) and information relations between government private investors, project developers and numerous intermediaries reasonably described as

'carbon cowboys'. The IACFP was a joint programme of AusAID and Department of Climate Change and Energy Efficiency, its operations were outsourced to a consultancy firm IDSS and several NGO's for programme activities, Wetlands International, Borneo Orangutan Survival (BOS), CARE and World Wide Fund for Nature (WWF). The World Bank acted as a financial intermediary for 8.4\$ million to provide 'performance based payments' to local participants in Kalimantan Forest Carbon Project. The payments were 'input based' and 'performance based' initially to move to 'outcome based'. No links, however, were established between the payment to actors and measured reductions in greenhouse gas emissions (Davies, 2015).

Trade in carbon offsets truly contradicts the 'polluter pays' principle as the sanction of carbon offsets by the government is to maintain the status quo without the polluter having to pay for the polluting enterprise. As Rosewarne note (2010:13) 'The CPRS propose to transform the social costs generated by these industries into property rights in order to avoid the possibility that the leading industrial sectors would disengage, at the same time as it holds out the promise of other opportunities for expanding accumulation'.

According to the Treasury modelling in 2008, after the introduction of CPRS, there was to be insignificant reduction in the electricity generated from black coal between 2010 and 2020 and no reduction in brown coal electricity over the same period (Commonwealth of Australia, 2008, c.f Denniss, 2009). The figures depict that the government intention was never to reduce Australia's domestic emissions but to import a large number of permits from developing countries and to expand trade and investment opportunities in Asia Pacific.

The Australian government further advanced the effort to demonstrate terrestrial offsets be extended to the domestic agricultural sector through the Carbon Farming Initiative (CFI) Act of 2011. Agriculture was removed as an industry with obligations to reduce emissions under the Carbon Pollution Reduction Scheme (CPRS) and the Carbon Farming Initiative (CFI) became the first national offset scheme to focus on agriculture



and forestry sectors (Sartor, 2010). Instead of compliance obligations, agricultural producers were able to opt into a voluntary offset scheme called the 'carbon farming initiative' which was a project based baseline-and-credit offset certification system, with offset credits were called Australian Carbon Credit Units or ACCUs. The establishment of voluntary offset market through carbon farming initiative was infact continuation from Keating and Howard government's Greenhouse Friendly Program, the only novelty was a deeper intensification of the program with every change of government in Australia.

The carbon farming initiative was to provide governance techniques for REDD+. Similar to CDM, carbon farming offsets were based on 'additionality' i.e. emissions reduction created through a project which would not have occurred in the absence of the project. The exposure draft of the CFI included a project level 'financial additionality' test. A project would be considered additional if either a) there were reasonable grounds to believe the project would not have been financially viable without revenue derived from carbon credits; or b) there were reasonable ground to believe that the project would not have been carried out without revenue derived from carbon credits.

## **Wall-Street is a way of Organizing Nature**

There is a close connection between contemporary process of financialization and rise of neoliberalism and this link could not be clearer in climate change politics. The development of carbon markets parallels emergence of markets for financial derivatives gaining prominence since 1990s and 2000s (Lohmann,2012). Newell and Paterson (2010:28) argue that EU ETS became almost unstoppable once the new dominant financial actors realised its potential as a new market form its derivatives, options and swaps. As Christian Marazzi (2011:48) puts it:

'Financialization is not an unproductive /parasitic deviation of growing quotas of surplus-value and collective savings, but rather the form of capital accumulation symmetrical with new processes of value production'.

Following from Moore (2010:390) 'the penetration of finance into everyday life, is made possible through the growing connection and reproduction of human and extra human nature'. Contemporary finance is a neoliberal governmental *dispositif* based on an abstraction of nature into forms of speculative commodities of swaps, derivatives and so and so on. In order for finance to operationalize the accumulation opportunities of environmental crises and conservation, new commodities connecting these domains need to be created so it open new spheres for investment, trade and speculations. Through the capitalization of nature, the climate change crisis is turned into an opportunity to submit nature into valorisation of capital markets (Smith,2007).

Smith (2007:38) conceptualised the between capitalization of nature and expanded accumulation of capital as

*'...new frontier in the production of nature has rapidly opened up, namely a vertical integration of nature into capital. This involves not just of production of nature 'all the way down' but its simultaneous financialization 'all the way up'. Capital is no longer content simply to plunder an available nature but rather increasing moves to produce an inherently social nature as the bases for new sectors of production and accumulation'.*

According to Smith (2007:33) based on the logic of profitability, in the garb of commodity futures, ecological credits, derivatives and so forth as a part of the total social capital in financial markets as financialized commodities would not exist without the earlier attachment of exchange-value to some aspect of produced nature'. The financialization of nature takes place through broader process of commodification, marketization and intensification of capitalist social relations. Lohmann (2012:97) portrays the carbon market accumulating strategy where project developers and investors expropriate the 'inextricably interwoven relations between human and natural environment especially applicable to forestry projects where avoided carbon emissions enable a 'stupendous extraction of surplus value from generations of painstaking labour'. The state acts as a 'rentier' to expropriate from public and distribute it to private and

corporate actors.

The financialization of climate change crises located in the aftermath of financial crisis of 2008 signaled the end of the expansionary limits of finance market and subsequent government bailouts with public money. Paradoxically the carbon market mirrored the global financial market, as there was a rapid expansion of financial innovations seeking to conjoin the economic risks of climate change with distributive risk capacities of financial markets. Finance became the new 'frontier' of accumulation in mitigation of the climate change crisis in the form of derivatives, swaps and so on, whereby carbon permits and credits are bundled together and sold in bulk to speculative financiers banking on the increased price of already established credits. The market attracted interest and investment by conjuring of a proliferating range of new products and trading possibilities, based on abstractions of non-human world. Climate change became 'a speculative opportunity like any other in the market hungry for critical events' (Cooper 2010:175)

The bundling of nature into speculative commodities is invested with power relations as the dynamics of nature are forcibly fitted into the dynamics of human-constructed financial markets, assigning tradeable prices to the unsalable commodities of essentially unknowable futures (Cooper, 2010). While the production of nature renders nature into new mass of standardized qualitatively indifferent exchange values, financialization extends the possibilities for nature speculative release into the realm of circulating money in form of derivatives. As Cooper notes (2010:178) 'derivatives challenge the idea that the circulation of money must be anchored in some fundamental, underlying value; at the same time, it binds nature's uncertainty and dynamics to the influence of financial investment'.

The CPRS proposed inter-temporal flexibility in functioning of national carbon market which included banking and borrowing of permits. As the Australian Government (CPRS, 2008:1-7) stated 'One of the Australia's major opportunities lies in being well placed to provide the necessary financial services to support developing carbon markets

in the Asia-Pacific region. Australia has significant competitive advantages as potential hub for emissions trading and related financial services in our region’.

There is a clear attraction of emissions trading amongst professional financial intermediaries, advisors, and investment banks as it provides a new avenue for financial activity. For any emissions trading to function effectively there is a need for price stability for investment certainty. However, price volatility is common as demonstrated in EU ETS what is influenced by uncertainties in the regulatory environment. The Garnaut Climate Change Review of 2008 acknowledged that markets cannot be guaranteed to deliver price certainty and therefore required ‘secondary markets’ including carbon futures market, carbon credit offsets and CO2 derivative markets. The proposal was to instil markets to stabilize emission permit prices and and signal a ‘discovery price’ around which emission permit prices should gravitate (Garnaut Review, 2008: 312).

Rosewarne and Chester (2011) documents carbon offsets in Australia through REDD + and Carbon Farming Initiatives (CFI) has resulted in dubious definition and variable status of offset which do not provide much basis to the claimed transparency and stable carbon derivatives market to contribute in minimising uncertainty and price volatility. According to Chester and Rosewarne (2011:24) notes ‘the Australian Federal Labor government’s planned Carbon Farming Initiative...proposes to reward farmers and other landholders for pursuing abatement activities, while apparently not addressing whether such activities are additional to established practices or unsustainable practices that could normally be avoided or minimised’.

Patrick Bond provides a relevant Marxist understanding of carbon trading in his work Politics of Climate Justice (2012) where he makes an explicit reference to David Harvey’s notion on crisis. According to Harvey the main character of capitalist mode of production is a tendency to over-accumulate unless a critical threshold is crossed. Drawing on Marx’s Capital, Harvey proposes that

*capitalist crisis is ‘a condition in which surplus production and reinvestment are blocked. Growth then stops and there appears to be an excess over-accumulation of capital relative to the opportunities to use capital profitably. If growth does not resume, then the over-*

*accumulated capital is devalued or destroyed' (Harvey, 2010:45, c.f Bond, 2012:57).*

In conditions of these , there are various displacements tactics, and increased resort to 'accumulation by dispossession' (Harvey,2003) which allows capital to exercise its dominance over non-yet capitalist terrain of social and natural life and to internalize them in its valorising mechanisms. According to Harvey (2005) 'accumulation by dispossession' is a forced form of redistribution of wealth from already poor to already rich by means of privatization of commons, financialization of entire economy and management of crisis in the interest of private sector through Structural Adjustment Programmes and implementation of cuts in social spending and welfare state.

Harvey (2005) in his attempt to reconsolidate this theoretical apparatus explains how capital has been able to displace its over-accumulation crisis (rooted in the 1970s) through a) *globalization* to spatially shift the problems without actually solving it b) to temporally diffuse problems through *financialization* c) to exploit, plunder and colonize 'virgin' territories which is a new form of *imperialism*. Patrick Bond (2012:18) in the context of carbon trading renamed Harvey's concepts as 'shifting, stalling and stealing as he argued:

*Carbon markets offer useful vehicles for shifting, stalling and stealing since from the standpoint of space they move the challenge of emissions cuts to the South (hence preventing industrialization). From standpoint of time, they permit a financialized futures market approach, no matter how fanciful-to the proposed prevention of planet threatening climate change. And from the standpoint of accumulation by dispossession, by privatizing the air (through carving up the atmosphere to sell as carbon credits) the maintenance of an exploitative relationship between capital and non-capitalist spheres is crucial*

## **Conclusion:**

In November, 2007 Australian Federal Election heralded a milestone in Australia's climate policy. Prime Minister Kevin Rudd ratified the Kyoto Protocol and proposed to

fast track the institutionalization of national emissions trading scheme by bringing forward the implementation date from 2012 to 2010.

Prime Minister Rudd referred to 'climate change as the greatest moral challenge' and so any determined effort and objective of climate policy would be to presumably seek to reduce emissions from its source. The CPRS minimized the reductions and allowed them to be sourced offshore.

The case-study of CPRS illustrates the tensions and complexities of regulatory neoliberalism, defined as the reliance of neoliberal concepts of market 'efficiency' and 'rationality', highlighting the power of experts, economists, statisticians and professions in producing, quantifying and stabilizing society and economy in order to 'govern at a distance'. Regulatory neoliberalism is a manifestation of 'advanced liberal government and entails a range of devices that seek to recreate the distance between decisions of formal political institutions and other social actors, and to act upon these actors in new ways, through shaping and utilizing their freedom' (Rose,1993:295)

The new configuration of power can be understood in terms of the market forming the main organizing principle of state, society, economy as it is treated as an exemplar of transparency, quantification and exactitude. The fault in market as an ultimate utilitarian calculative device; converts climate change externalities into a supply and demand problem of consumer preferences into prices, uncertainty into risks and so on. The market collapses the boundaries between 'market' and 'non-market' and nature is valued as a private, exchangeable good to be bought and sold in the market. The market becomes a conduit to replace politics with economics, and all institutions, spheres of conduct are evaluated with a single economic concept of value.

However, externalities such as climate change suffer from a lack of clarity to produce a clear, visible relationship between costs, benefits, action and effects, The operation of carbon market within the narrow confines of efficiency becomes a technocratic machinery of the liberal government, governed by a complicated,

cumbersome cog of economic actors and *agencements*. Neo-liberal theories adopt the role of a facilitator of particular governmental actions through judgements about their efficiency. According to Coase (1960) there is no normative a priori notion of 'efficiency' or 'perfectly competitive market' but there are tools by which one can evaluate them on case by case basis. Neoliberal protagonists such as Coase established the foundations of carbon trading as a mechanism to limit state action and bureaucratic expertise and replace it with economic authority to discover the 'true cost' of externalities such as pollution. According to Coase only private bargaining with well-defined property rights can efficiently realize this value within the constraints of transactions costs.

The case-study of CPRS provides a counter narrative about the key tenets of neoliberal assumptions and assertions. The CPRS White Paper exemplified a strong overlap between climate science economics and politics as its assessment of Australia's national emission reduction target and trajectory reflected territorial and economic interests. On the whole, the CPRS white paper did not impose any substantial obligations in terms of a national emissions reduction target than would be required under the Kyoto Protocol. Further the government clearly communicated that until a global agreement is laid out there will be considerable uncertainty around the stringency of the CPRS cap imposed on emissions reduction. The scientific assessment of targets and trajectories was based on the criteria of minimising costs to the Australian economy.

The case-study of CPRS further illustrated that the neoliberal notion of 'free-market' is a myth, an artefact dependent on constant legal and technical interventions by state agencies. The construction of market as simple, uniform structures required regulatory interventions and restrictions by states agencies and the form of which determine winners and losers i.e. large polluters vs rest of the population.

From a Coasian perspective, legitimate competitive activity is any activity that is efficiency maximising and this activity can be monopolistic or any other predatory activity so long it is efficient. So the neoliberal version of 'free market' is a way to justify capitalist power and the state becomes the active nurturer of it as reflected through the

CPRS. The CPRS proposed allocation of free permits to energy intensive industries was equivalent to attributing polluters a property right, guaranteed by law. The justification used for shielding and special protection to energy intensive industries was of 'national competitive advantage', growth of jobs, employment leading to low carbon economy. The government's 'grandfathering' of emission permits to big polluters was made against marginalization of the rest through less funding and assistance provided to households and other businesses. The CPRS proposed reduced petrol taxes to protect road transport against price rises, whilst giving free permits to trade exposed industries. The large polluters were compensated at the cost of smaller business buying their permits at auction. Spash (2009:14) shows 'in the first five years of the proposed scheme, the electricity generating industry has been estimated to be in line for over 130 million free permits worth \$AU 3.9 billion in nominal terms'.

Despite strong recommendations by Garnaut in his Climate Change Review against free allocation of permits to large polluters, the government in the CPRS White Paper increased the allocations of free permits, extending the range of industries categorised as energy intensive, trade exposed industries (EITEIs) by reducing energy intensity thresholds and relaxing of rules for measuring emissions intensity (Bailey et al 2012). The framing of climate crisis as a 'green growth' strategy translated into creation of a 'carbon market' as contemporary enclosure for continuing economic growth, capitalist production and a new wave of primitive accumulation.

The CPRS draw attention to the phenomenon of price and the role of economists and economic modelling in construction and operation of a carbon market. Price theory was based on the idea of economic agents responding efficiently in a cost-effective manner as individuals are essentially rational utility maximisers. The market and price becomes a site of truth through which behaviour, and institutional arrangements become measurable and testable dictating maximization of efficiency. Under the CPRS the imposition of 'price cap' and 'price-floor' exemplified subjectification of individuals as consumers to sacrifice their welfare to free up permits to be used by industries. It reflected alienation from the market and at the same inhibiting or restricting their



voluntary and intrinsic motivation to make meaningful contribution towards the mitigation of climate crisis.

The introduction of the CPRS was used as a strategy of crisis displacement spatially and temporally, and to continue with unabated domestic emissions, as it allowed for unlimited permit imports. Against the proposal of the Kyoto Protocol which specified offsets be supplementary to domestic action the Australian government supported for unlimited Clean Development Mechanism (CDM) and Joint Implementation (JI) and forestry offsets from Reduced Deforestation and Degradation.

In April 2010, Prime Minister Kevin Rudd announced the deferral of his flagship climate change policy, the Carbon Pollution Reduction Scheme. The scheme was deferred after it twice failed to gain support of the Australian Senate.

# In Conclusion

There is a virtually unchallenged consensus over the dangers of climate change crisis with severe and unprecedented consequences for all living beings, societies and humanity. The main contribution of this thesis is a materialist and bio-political understanding of climate policies of successive government from the 1990's to 2008. The thesis focus on the policy terrain and specificities of climate governance in Australia from between 1990-2008 is significant, signaling an emerging bipartisan consensus in Australia on economized climate governance, culminating in the Garnaut Review. This period is significant for analysis as it illuminates the problems underlying this consensus as after 2008 the consensus was broken entering into a period deep re-politicization and dissension leading to a policy void in mitigation of climate change.

The main research question of this thesis is: how can a materialist and bio-political framework help us understand climate change governance in the Australian context? The contribution of this thesis is a materialist and bio-political understanding of climate policies of successive governments in Australia from the 1990s to 2008; as a trajectory that connects the notion of sustainable development of 1990's to green economy popularized in the course of 2000. This trajectory illustrates a continuing chapter in the history of neoliberalism as a progressively hegemonic governmental rationality and practice.

The continuing thread that ties all the chapters and case-studies of this thesis is that climate policy was constituted at the intersection of a joint process of politicization, economization and most importantly technocratization of climate crisis. The overarching narrative of technocratic expertise, economic transformation and reform through competition, externality pricing and most importantly capital accumulation. However contrary to the popular notion of neoliberalism as a form of market fundamentalism, the terrain and specificities of climate governance in Australia in this thesis have

demonstrated that the key institution of neoliberalism is not the market as such but prominence of particular market based form or market derived principles of economization, calculation, measurement and valuation of socio-ecological relations.

The *economization* of climate crisis was rooted in the neoliberal transformation that took place in 1990s' and materialized as ecological modernization in environmental politics. The chapters in this thesis have illustrated the economization of climate crisis through the discourses of sustainable development, green economy as bio-political machineries of liberal government are governed by a complicated, cumbersome set of socio-technical *agencement* around quantification, measurement and valuation of nature as if it were a private, exchangeable good using techniques such as cost-benefit analysis, contingent valuation or willingness to pay surveys. The chapter on sustainable development under Hawke government illustrated a managerial reworking of socio-ecological relationship based on two competing approaches: redressing our intervention in nature and at the same time developing new forms nature through techno-scientific advancement. Climate change governance through the discourse of sustainable development was achieved through the framing of climate crisis as a threat to national economic growth. The discourse of sustainable development became hegemonic, losing the imaginative potential of alternative trajectories of solution to climate crisis.

The *technocratization* of climate crisis is probably the most sedimented logic of climate governance, which sheds light on the closed loop of economics, science, economic and scientific expertise, carbon-accounting, based on abstraction of nature inherent within the wider socio-material relations of power and authority. The plurality of chapters in thesis has illustrated the role of calculative practices, devices and technologies adopted by successive government intersecting all forms of life including nature, population, and societies. The notion of 'regulatory neoliberalism' is useful to understand these economic techniques which are used to assess political and governmental actions for their 'rationality' and 'efficiency'. The use of regulatory neoliberalism draws attention to the empowerment of knowledge experts such as scientists and carbon accounting professionals, economists to make climate crisis

countable, visible, understandable and malleable. The chapter on techno-politics of carbon accounting under Howard government brings to the fore the dynamics of national carbon accounting which relies on complex, cumbersome socio-technical *agencements* to enable the quantification, measurement and interpretation of anthropogenic interferences of climate system governed by discourses of economic efficiency, competitive advantage and territorial interests. Further the techno-politics highlighting how national carbon accounting is based on land use emission reductions performed by experts, satellites. The techno-politics of carbon accounting focuses on the output of greenhouse gas emissions instead the social, material and economic practices that produce these emissions. It highlights bio-political governmentality as power is exercised by mobilizing and enrolling human and extra-human actors into a hegemonic goal of emission reduction, and the continuation of fossil-fuel extraction. The chapter on Carbon Pollution Reduction Scheme and Kevin Rudd illustrate offsets as a strategy for spatial and temporal displacement of greenhouse gas emissions, enrolling bureaucrats, corporate verifiers, and through the inclusion of civil-society organizations and communities. Offsets became new commodity frontier based on accumulation by decarbonization through state led violence and expropriation.

The phenomenon of price in the operation of carbon market is both intriguing and infuriating. The neoliberal hope of price as a final verdict and arbiter of value is a fiction as the chapter on the Carbon Pollution Reduction Scheme and Kevin Rudd demonstrate the price formation forms the nucleus of a new bio-political governmentality as it becomes a methodological trope of analyzing individual behaviour through the psychology of price.

The chapters in the thesis have further demonstrated, that climate governance constituted through the scientization, economization and technocratization has resulted in the de-democratization. De-democratization through climate governance has been undertaken by successive governments in Australia through consensual decision making, within new institutional configurations articulated around public-private partnerships, voluntary action, operating in a frame of generally agreed objectives of sustainable development,

competitiveness, participation, responsibility and so on. Contrary to neoliberal optimism in 'utility-maximizing' principle, individuals sacrificed their wellbeing to the supervening goal of macro-economic growth. The de-territorialization and re-territorialization of climate governance draws attention to the state violence, exclusion, oppression and expropriation of population privileging wealth and power in organizing common life. As Wendy Brown (2015:207) puts it brilliantly 'this containment of anti-democratic forces and this promise of fuller realization of democratic principles are what neoliberal political rationality jeopardized with its elimination of the very idea of the *demos*, with its vanquishing of *homo politicus* by *homo economicus*'. Reducing the political terrain as a sphere of market and of consensual governing and policy-making centered on technical, managerial, bureaucratic decision making; the disenchantment of politics by economics.

In a deeply though provoking essay by Joel Wainwright and Geoff Mann (2012), the authors list four alternative social formations in response to climate crisis as a greatest challenge of our time a) climate Leviathan in which UNFCCC as an institutional manifestation drives climate related efforts based on carbon trading, green finance, technological innovations like geo-engineering to slow global warming b) climate Mao, in which planetary sovereign power assumes as its main task to limit capital's circuit of valorization to reduce excessive greenhouse gas emissions and crass consumption for countries like Australia, US, Canada, oil-producing states c) climate Behemoth, centered reactionary populism and radical anti-state libertarianism joining forces to ignore the crisis and accelerate business-as-usual d) climate X, in which local hubs of global climate justice movement manage to organize not only a successful resistance against carbon trading and its exploitative mechanism but also a new institutional setting for a low carbon society. Against the famous statement by Federic Jameson – 'it is easier to imagine the end of the world than the end of capitalism,' Wainwright and Mann (2012:17) envisages climate X as 'worldly and structurally open: a movement of the community of the excluded that affirms climate justice and popular freedoms against capitalism and planetary sovereignty'.

The complex and overwhelming challenge of climate change that we face today has no single and coherent response of what will be the alternative social formation. The basic questions of the relations between democracy, justice, liberty, value not wealth, are still the ones that matter and their intensity must be considered within the present ecological deadline. As Wainwright and Mann puts it (2012:17) 'the urgency, global warming imposes, does not cut us off from the past, but only reignites it in the present'.

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