Asia-Pacific Ecological Modernisation: An Emerging Governance Strategy for the International Climate Change Regime?

Abstract

Following withdrawal from the Kyoto Protocol in 2001, the United States has pursued an international climate change policy based on voluntary hybrid governance partnerships outside the United Nations climate regime. This hybrid governance strategy has evolved through various stages to include multilateral technology partnerships, the Asia-Pacific Partnership on Clean Development and Climate (APP), the APEC Sydney Declaration (Sydney Declaration) and the US Major Economies Process on Energy Security and Climate Change. The APP and Sydney Declaration serve as a model for a potential voluntary international climate change agreement based on public-private economic partnerships, sectoral technology development, intensity-based aspirational targets and trade in cleaner energy technologies. This possible model for a potential international climate regime has parallels with traditional ecological modernisation theory approaches however provides a significantly reduced role for the state as largely a facilitator of public-private technology research and private sector trade relationships. The APP, the Sydney Declaration and the Major Economies Process together represent a significant discursive shift in the international climate negotiations that can be seen as a discourse of "Asia-Pacific ecological modernisation" (APEM). APEM has received support from the key nations of India, China, Japan and the United States and will likely play a significant role in contestation for the architecture of the post-2012 climate regime over the next two years. As a long term governance strategy, the hybrid governance approach of the APEM offers flexibility and adaptiveness. However, there is significant concern about the effectiveness of APEM in achieving deep absolute emissions reductions in the mid to long term. The hybrid governance strategy of APEM raises procedural equity concerns in restricting participation in climate change governance to elite state and business actors. Similarly, the hybrid governance strategy of APEM fails to cater for the substantive equity concerns of developing nations for concessional technology transfer and differentiated emission reduction burdens. The failure of APEM to accommodate important procedural and substantive equity principles established by the FCCC raises significant doubt about its capacity to provide a long-term strategy for the international climate regime.

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Introduction

This paper is about a current contest of ideas within the international climate change regime. An international regime has been characterised as a set of "implicit or explicit principles, norms, rules and decision making around which actors expectations converge in a given area of international relations" (Krasner 1983:2). The principles, norms, rules and decision making of a regime are typically embodied in a treaty between nation-states. The problem of human induced climate change has seen the formation of two seminal international treaties within the United Nations (UN) system: the UN Framework Convention on Climate Change 1992 (FCCC) and Kyoto Protocol to the UN Convention on Climate Change 1997 (Kyoto Protocol). However, in the past seven years a number of less formal multilateral agreements on climate change have formed outside the UN system that display a similar convergence of expectations around principles, norms and decision making procedures. A number of these less formal agreements have elevated the role of non-state actors, particularly the business sector. The United States (US) has been particularly prominent in promoting this less formal approach through the formation of a number of bilateral climate partnerships, multilateral technology partnerships and initiatives such as the Asia Pacific Partnership on Clean Development and Climate (APP), APEC Leaders Sydney Declaration (Sydney Declaration) and US Major Economies Process. With the continued US reluctance to join the Kyoto Protocol, these informal agreements continue to grow in importance as an alternative model for the future shape of the international climate regime.

Now a decade and a half old, the international climate regime is currently in a state of significant flux. The recent Bali COP meeting of the FCCC has set in place a process for negotiations over the next two years to agree on a comprehensive international treaty to succeed the expiry of the first period of the Kyoto Protocol in 2012. These negotiations will involve significant contestation over the norms and principles that will dominate the UN climate treaty framework in the period beyond 2012. To illuminate the contestation of ideas for the future of international climate regime it is important to examine the content of prominent US-inspired multilateral initiatives outside the UN system over the past seven years. This paper does that from a perspective that the US-inspired informal agreements draw heavily on principles of ecological modernisation theory originally developed in a European context. However, the US-inspired informal agreements typically provide a rather limited role for the state as simply a facilitator of public-private technology development and trade in cleaner technologies. This paper suggests that the US-inspired informal agreements represent a deregulatory variant of ecological modernisation and emerging discourse of "Asia-Pacific Ecological Modernisation" (APEM). This paper also assesses the prospects of APEM contributing to a successful long-term governance strategy for climate change. The following section provides a brief overview of the key theoretical principles used later in the paper.

Theoretical Principles

Public, Private and Hybrid Governance

The APP, APEC Sydney Declaration and US Major Economies meeting all claim to elevate the role of non-state actors in the multilateral response to climate change. An elevation of the role of non-state actors is consistent with more prominent role of public-private partnerships (PPP) in international environmental affairs since the 2002 World Summit on Sustainable Development (WSSD) (Backstrand 2006: 290-91). Despite the proliferation of PPP's in international environmental affairs[1], academic analysis of their content, structure and effect is still at an early stage (see: Andonova & Levy 2003, Andonova 2005, Andonova et al 2007, Backstrand 2006 & 2007) Typologies have been offered Backstrand (2007), and Andonova et al (2007) to assist in classifying PPP's and forms of non-state cooperation on climate change. Despite the early stages of this work, a common theme is the usefulness of the concept of "governance" in explaining the formation, operation and effect of PPP's and non-state environmental initiatives. Andonova et al (2007:2) describe governance as follows:

> *In its broadest sense, governance is seen to incorporate a diversity of governing processes, including those associated with the state (hierarchy), coodination and cooperation among social and political actors, as well as self-governing mechanisms (Kooiman 2003)*

The breadth of the term governance opens up the space for inclusion of the activities of both state and non-state actors. Andonova et al (2007:3) comment:

> *Broadly speaking, we can say that the term governance "implies a focus on 'systems of governing', means for 'authoritavely allocating resources and exercising control and coordination (Rhodes 1996: 653), in which the state (or government) is not necessarily the only or most important actor (Bulkeley and Betsill 2003:9).*

Importantly, Andonova et al (2007:3) describe the governance function as "purposively steering constituent or populations to act". Given the capacity for governance to exist without the input of the state, a useful starting point for analysis is to identify the nature of the actors involved. The typologies offered by Andonova et al 2007 and Backstrand 2007 both seek to classify governance arrangements as either *public governance* (established and managed by mainly state actors), *hybrid governance* (established and managed by both state and non-state actors) and *private governance* (established and managed by non-state actors only). The APP, Sydney Declaration and US Major Economies process all seek to elevate the role of the private sector in the institutional response to climate change. The extent to which the APP, Sydney Declaration an US Major Economies process represent a shift to hybrid governance is discussed later in the paper.

[1] There are currently over 300 PPP's registered under UN WSSD process (Backstrand 2006: 290)

Ecological Modernisation

Ecological modernisation (EM) theory has been particularly influential over the last two decades in explaining national environmental policy, particularly in the European context (Mol & Sonnenfeld 2000:4 -5). EM theory arose in the early 1980s as a reaction against demodernisation, deindustrialisation and counter-productivity theorists of the 1970s who proposed widespread and radical socio-economic change (Mol & Spaargaren 2000 17-20). EM theory is also viewed as a reaction against the Marxist-political-economy challenge to the sustainability of the expansionary and commodification dynamics of industrial capitalism (Mol & Spaargaren 2000:22-23). EM theory offered a policy response to environmental degradation that embraced rather than challenged the dominant socio-economic paradigm of technological progress and market-capitalist social relations (Dryzek 2005:169). EM theory challenged the predominant view that environmental protection and economic profit were a trade-off or "zero-sum gain" (Seippel 2000: 288). The core message of EM theory is that environmental improvement and profitable business activity is complementary (Seippel 2000:288).

There has been extensive academic literature over the last decade on EM theory (Hajer 1996, Blowers 1997, Christoff 1996, Mol & Spaargaren 2000, Mol & Sonnenfeld 2000, Sonnefeld & Mol 2002, Andersen & Massa 2000, Seippel 2000, York & Rosa 2003, Dryzek 2005). Much of this literature has furthered debate over the consistency of the theory and whether it has sufficiently stabilised as a concept (see: Seippel 2000 and Christoff 1996:490). However, as a useful summary of EM theory, Mol & Sonnenfeld (2000:5-7) provide the following five key principles:

1. Changed role of Science and Technology: "science and technology not only judged for their role in the emergence of environmental problems but also valued for their actual and potential role in curing and preventing them".

2. Increased importance of market dynamics and economic agents: "as carriers of ecological restructuring and reform".

3. Transformation in the role of the nation state: "more decentralised, flexible and consensual styles of governance emerge, with less top-down, national command-and-control regulation.....More opportunities for non-state actors to assume traditional administrative, regulatory, managerial, corporate, and mediating functions of the nation-states".

4. Modification in the position, role and ideology of social movements: "Increasingly, social movements are involved in public and private decision-making institutions regarding environmental

reforms, in contrast to having been limited to the periphery or even outside of such processes and institutions in the 1970's and 1980's".

5. Changing discursive practices and emerging new ideologies: "Complete neglect of the environment and the fundamental counterpositioning of economic and environmental interests are no longer accepted as legitimate positions.....Intergenerational solidarity in dealing with the sustenance base has emerged as an undisputed core principle."

The key principles of EM theory as described by Mol & Sonnenfeld are largely consistent with a version on EM identified by Christoff as "weak ecological modernisation" (1996:490). He describes weak ecological modernisation as "economistic, technological, instrumental, technocratic, neocorporatist, national and unitary" and weak in the sense that it is unlikely to promote "enduring ecologically sustainable transformations and outcomes across a range of issues and institutions". Christoff (1996:491) contrasts weak EM with a "strong EM" that is directed towards an ecological, open, deliberative, communicative, international and diversified social structure. The deliberative, reflexive processes of "strong EM" allow for consideration of the normative aspects of current development practices and potentially deep transformation of socio-economic systems away from the patterns of industrial modernity (Christoff 1996: 496, Dryzek 2005:173-174).

Mol & Sonnefeld (2000:6) identify a transformation in the role of the state to the facilitator of non-hierarchical, bottom-up, styles of governance as a key feature of EM theory. Andersen & Massa (2000:344), Blowers (1997:853) and York & Rosa (2003:273) suggest a consistency between EM theory and market-liberal thought in that EM theory challenges the legitimacy and role of the state in regulation of market activity. However, Dryzek (2005:177) explains that EM theory, in its weak form, has been most strongly implemented in the Northern European social democracies of Germany, Norway, Sweden, Finland, the Netherlands and the East Asian nation of Japan. Dryzek (2005:166-67) notes these nations have in common a "corporatist" political-economic system involving consensual relationships between government, business, labour (except Japan) and environmental groups (Norway only). In this context, the implementation of EM theory has been accompanied by significant government planning, regulation and market intervention to implement environmental policy goals arrived at in consultation with business, labour and environmental groups. Christoff (1996: 478-79) notes that implementation of German EM strategy during the 1980s and early 1990s involved the use of binding targets and timetables on standards for the re-use of material in production, retrofitting of powerplants to reduce acid-rain pollution and in the banning of CFC production. Similarly, the Dutch National Environmental Policy Plan (NEPP) process is another prominent example of implementation of EM theory in a corporatist socio-economic system (Christoff 1996: 479). Dryzek (2005:177) notes the interventionist flavour of Northern European implementation of EM presents significant difficulties for nations with a less interventionist political-economic culture:

Concerted pursuit of ecological modernisation requires a consensual and interventionist policy style consistent with corporatism. This style is, however, ananthema to governments under sway of market liberal doctrines, which helps explain why ecological modernization faces an uphill struggle in English-speaking industrialised nations

The level of "fit" between implementation of "weak EM" in the European context and the recent worldview of nations such as the US and Australia is of particular importance in understanding the emergence of "Asia-Pacific EM". This theme is developed further later in the paper

Evolution of International Climate Governance

The Non-UN Multilateral Initiatives in the International Climate Regime

The US Bush Administration formally withdrew from the Kyoto Protocol in March 2001 (White House 2001). However, shortly afterwards the US moved to form a number of bilateral "climate change partnerships" directed at cooperative research on climate change science, greenhouse gas accounting and technology development (McGee & Taplin 2008). The first of the US bilateral climate change partnership was entered into with Italy in July 2001 and was directed at research into climate science and low emission technologies (US State Department 2001). To date, the US has entered into a total of fifteen similar climate change partnerships (13 with individual nations and two with regional groups) all of which are non-treaty, informal agreements negotiated outside the UN climate process (McGee & Taplin 2008). The US climate change partnerships are essentially directed at information exchange and the pooling of research efforts on climate science, greenhouse accounting and cleaner energy technologies. The US climate change partnerships make no effort to agree upon national emission reduction burdens.

Since 2001 the US also inspired and entered into a number of multilateral technology development partnerships relevant to climate change. The US inspired multilateral technology development partnerships include; the Methane to Markets Partnership (MTMP) (for the capture and commercial use of methane), the International Partnership for the Hydrogen Economy (IPHE) (for research and development of hydrogen energy), the Carbon Sequestration Leadership Forum (CCLF) (for capture and burial of carbon dioxide from stationary electricity generation), the Global Nuclear Energy Partnership (nuclear energy development) and the Generation IV International Forum (nuclear power station design) (Backstrand 2007:15, McGee & Taplin 2008). The US inspired multilateral technology development partnerships are again non-treaty, informal agreements outside the UN climate process. They are all expressly voluntary agreements and hence provide no binding obligation for the nations involved. The MTMP actively encourages private participation in governance functions (McGee & Taplin 2008).

Asia-Pacific Partnership on Clean Development and Climate

The APP was launched at an Association of South East Asian Nations (ASEAN) annual ministerial meeting in July 2005 and signalled a deepening of the US-sponsored initiatives outside the UN climate process (Australian Dept of Industry 2005). The APP is another non-treaty, informal international agreement formed outside the UN climate process. The original six members of the APP were Australia, South Korea, China, India, Japan and the United States. Canada became the seventh member of the APP in October 2007 (APP 2007). New Zealand has also expressed interest in joining the APP. The APP has produced a number of formal documents including a vision statement, charter, several communiqués and a set of task force actions plans. The APP is not solely a climate change agreement as it is formally directed at the development of "clean energy technologies" to address the multiple issues of air pollution, energy security, poverty eradication, development paths and "greenhouse intensities" (APP 2006:1). The APP creates a:

> *voluntary, non-legally binding framework for international cooperation to facilitate the development, diffusion, deployment, and transfer of existing, emerging and longer term cost-effective, cleaner, more efficient technologies and practices among the Partners (APP 2006:1-2).*

The exchange of information and sharing of policy experiences between governments and public research bodies and the private sector is a key part of APP activities (APP 2006: 2). However, the private sector is also anticipated to play an "integral part of the cooperative activities of the Partnership" (APP 2006:2). The APP member nations have described their agreement as a "public-private partnership" (US State Department 2007:1). The APP has a policy and implementation committee, an administrative group to oversee the partnerships activities (APP 2006:4) and also eight sectoral-based "task forces" for the aluminium, buildings/appliances, cement, fossil fuel, coal mining, power generation/transmission, renewables/distributed generation and steel industries. Each APP task force has produced an "action plan" describing initial task force projects. The APP claims the partnership has more than 110 individual projects underway through the eight task forces (APP 2007). However, concern has been expressed by China that most of the APP projects are directed at information exchange and knowledge sharing rather than developed nation investment in cleaner technologies in developing partner nations (APP 2007a). The level of government funding provided to the APP has been an ongoing issue. There have been concerns about inadequate levels of funding being promised by the partner nations and an initial reluctance of the US Congress to commit funds. Table 1 below provides a summary of the key features of the APP:

Table 1: Key Features of the Asia-Pacific Partnership

	Summary of Content
Participating nations	US, Australia, Canada, Japan, China, India and South Korea
Founding documents	Vision Statement, Charter, Communiques, Action Plans for 8 sectoral working Groups.
Nature of national obligations	Voluntary national obligations, founding documents are "non-binding".
Problem focus	Energy security, development and poverty eradication, air pollution and climate change.
Policy design	Partner nations facilitate cooperation of public-private partnership in research and implementation of "cleaner and more efficient technologies and practices". Very limited public funding provided for operation and research of partnership.
Key activities	Development and transfer of cleaner technologies and practices through information exchange, capacity building and investment.
Joint goal/target on greenhouse emission reduction	No. The APP encourages individual nations to set national emission reduction obligations but has no collective goal/target.
National goal/targets on greenhouse emission reduction	No. The APP encourages individual nations to set a goal/target to reduce "greenhouse intensity" (ie emissions per unit of GDP). However, an APP nation has no obligation to set such target.
Price on greenhouse emissions	No. The APP does not contain any regional or national emission trading scheme, carbon tax or similar. Each APP nation may establish such schemes at their discretion.
Sectoral Focus	Yes. Eight sectoral based Working Groups established to formulate and implement the APP "action plans".
Differentiation in obligation	No. Developed and Developing APP nations have the same formal level of obligation under the partnership. The FCCC principle of CBDR not formally mentioned.
Adaptation to climate impacts	No express references to adaptation
Land use change and forestry	No.

Sources: APP 2005, APP 2006, APP 2006a, APP2006b.

Launch of US "Major Emitters and Energy Consumers" Process

In May 2007, in preparation for discussions at the 2007 Group of Eight (G8) industrialised nations meeting in Heiligendamn Germany, President Bush announced a US initiative to develop a post-2012 climate change framework, the US "Major Emitters and Energy Consumers" process ("US Major Emitters Process") (White House 2007). The Major Emitters process is described as being directed towards "both developed and developing economies that generate the majority of greenhouse gas emissions and consume the most energy" and designed to address climate change "in a way that enhances energy security and promotes economic growth" (White House 2007). The Bush initiative proposed a US sponsored meeting with fifteen of the worlds' "top greenhouse economies and polluters" to "develop a

long-term global goal to reduce greenhouse gasses" with each country working to "achieve this emissions goal by establishing ambitious mid-term national targets and programs, based on national circumstances" (White House 2007). The national targets and programs would be determined by each nation individually (White House 2007.) The Bush initiative also proposed that major emitting nations "develop parallel national commitments to promote key clean energy technologies" with the US spurring international development banks to provide low-cost financing options for clean energy technology transfer White House 2007). The proposal for the Major Emitters process also raised the importance of forestry issues and energy efficiency. The Major Emitters process is specifically intended to "build on and advance US relations with the Asia-Pacific Partnership on Clean Development and Climate and other technology and bilateral partnerships" (White House 2007.) The Whitehouse Chairman on the Council on Environmental Quality, James Connaughton, confirmed that the Major Emitters process would adopt the APP approach of drawing together representatives from various sectors such as power generation and energy production to devise a "common work program on best practices" (White House 2007a). Connaughton also raised the possibility of the Major Emitters process encouraging transfer of state-subsidised cleaner energy technologies to developing nations:

> *...US government taxpayer dollars pay for a lot of research and development of new technologies. We often make that technology available to US manufacturers at very low cost. We are proposing to extend that policy globally, that if the taxpayers producing new clean energy systems will make that available globally, as long as other countries make the same commitment (White House 2007a)*

The Bush initiative claimed that the US remained committed to the FCCC and would complement ongoing UN activity (White House 2007).

Sydney APEC Leaders' Declaration on Climate Change, Energy Security and Clean Development ("Sydney Declaration")

The Asia-Pacific Economic Cooperation (APEC) forum was initiated by Australia in 1989 to facilitate dialogue amongst economies of the Asia-Pacific nations on trade and investment liberalisation. APEC currently has 21 member economies including all APP nations except India. As an informal consultative structure, each year APEC has one member economy acting as the coordinator and host of policy level Leaders Meeting, Business Advisory Council Meeting, Ministerial Meeting, Sectoral Ministerial Meeting and Senior Officials Meeting. APEC has a secretariat that also overseas four working level committees on Trade & Investment, Budget & Management, Economic and Senior Officials Meeting. APEC also has a number of ad hoc working groups and special task groups on various issues that in the past have including energy, industrial science and technology, mining and fisheries. As primarily a consultative forum, APEC does not have a founding charter or formal constitution but instead relies upon an agreed set of procedures and practices for the hosting of meetings.

From 5-9th September 2007, Australia hosted the annual key APEC Ministerial Meeting and Leaders Meeting in Sydney with prominent leaders of APEC member nations such as George Bush, Hu Jintao and Vladimir Putin attending. The Australian domestic political environment at that time had a significant influence upon the high profile of climate change at the APEC Sydney meeting. The conservative Australian Federal Government under the leadership of Prime Minister John Howard was facing an election in late 2007 and throughout the year electoral polling had indicated the government would struggle to be re-elected. Climate change policy was a key issue in election campaigning with significant debate raised about Australia's failure to ratify the Kyoto Protocol (Hall & McGee 2007). The Howard government had provided steadfast support to the US position of criticising the Kyoto Protocol as a "flawed" agreement (Howard 2007a). In the lead up to APEC, Howard commented 'the Kyoto model - top-down, prescriptive, legalistic and Euro-centric - simply won't fly in a rising Asia Pacific region' (Howard 2007a). The Howard Government therefore looked to the Sydney APEC Ministerial Meeting to help rebuild its domestic political stocks on climate change by brokering an agreement that could be seen as an alternative to the Kyoto Protocol (Howard 2007:5). Prime Minister Howard went as far as to state that the APEC Sydney Leaders Meeting was an opportunity for APEC nations to agree on a post-Kyoto framework and would be "one of the most important international gatherings of leaders to discuss climate since the 1992 Rio Conference" (Howard 2007a).

A draft Sydney Declaration on climate change, energy security and clean development was circulated in the weeks leading up to the APEC Sydney meeting and was leaked to Greenpeace and local media sources. The draft Sydney Declaration contained reference to the APEC parties recognising a "long-term aspirational goal on greenhouse gas reduction as a key part of the post 2012 framework" (Greenpeace 2007). The draft Sydney declaration also proposed a target for APEC nations to reduce energy intensity by 25% by 2030, using 2005 as the base year (Greenpeace 2007). It was clearly stated that this energy intensity target would not be legally binding and would apply to the APEC region as a whole rather the individual nations. Media reporting of the Sydney APEC meeting indicated that Prime Minister Howard sought to broker agreement so that the final document would have a long-term, aspirational global emissions reduction goal (Wilkinson 2007). Similar reporting suggested that developing nations, particularly China, were resistant to efforts to negotiate on a global emission reduction goal outside of the established process of the FCCC (Wilkinson 2007a).

The version of the Sydney Declaration finally agreed contained all the key elements of the draft and paralleled the path of the APP in favouring voluntary, non-binding commitments on research and implementation of clean technology and energy efficiency. The contentious issue of a global emission reduction goal was resolved by a commitment to "work to achieve a common understanding on a long-term aspirational global emission reduction goal to pave the way for an effective post-2012 international arrangement" (APEC 2007). This is a weak commitment to continue dialogue on an aspirational long-term global emission reduction target. The target of a 25% reduction in energy intensity for the APEC

economies by 2030 is also aspirational (APEC 2007). The energy intensity target is described as an "APEC-wide" target and clearly does not apply individually to any one economy (APEC 2007). The Sydney Declaration contains a further APEC-wide, aspirational target to "increasing forest cover in the region by at least 20 million hectares of all types of forests by 2020". It also establishes an Asia-Pacific Network for Energy Technology (APNet) to strengthen cooperation between research bodies in the APEC region in areas such as "clean fossil energy and renewable energy". Similarly, the Declaration establishes a body known as the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation is also to be established for capacity building and information sharing in the forestry sector. Table 2 below gives a summary of the key features of the Sydney Declaration:

Table 2: Key Features of the APEC Sydney Declaration

	Summary of Content
Participating nations	Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Republic of the Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; United States of America; Vietnam.
Founding documents	APEC has no formal founding documents except policy documents on operation of meetings. Sydney Declaration is a voluntary, non-binding, memorandum of understanding of the APEC nations.
Nature of national obligations	Voluntary national obligations encouraged, no individual national obligations imposed by aspirational targets of the Sydney Declaration.
Problem focus	Energy security, economic growth, climate change, environmental quality, poverty reduction.
Policy design	Aspirational voluntary targets for reduction in energy intensity and reforestation, further discussions to seek common understanding on a long-term aspirational global emission reduction target, capacity building and information sharing through research networks on energy technology and sustainable forest management.
Key activities	Aspirational targets at a regional level for energy intensity and forestry practices; joint research, development, deployment and transfer of technologies; exchange views on effective and coherent policy instruments
Joint goal/target on greenhouse emission reduction	Yes. Aspirational APEC wide target to reduce energy intensity by 25% by 2050; continue discussions on a common view on aspirational long term target for greenhouse gas reduction.
National goal/targets on greenhouse emission reduction	No. National targets are encouraged however no commitment made by nations to set them
Price on greenhouse emissions	No.
Sectoral focus	Yes. Clean fossil energy , renewable energy, forestry sectors.
Differentiation in obligation	No. Developed and Developing APEC nations have the same formal level of obligation under the partnership. The FCCC principle of CBDR not formally mentioned.
Adaptation to climate impacts	Yes, to be supported by "appropriate policy exchanges, financing, capacity building and technology transfer": however no specific adaptation financing included in Sydney Declaration.
land use change and forestry	Yes. APEC aspirational 20 million hectare reforestation target by 2020 and establishment Network for Sustainable Forest Management.

Source: APEC 2007

US "Major Economies" Meeting on Energy Security and Climate Change

Following the Sydney APEC meeting, the Major Economies Meeting on Energy Security and Climate Change took place in Washington DC on 27th and 28th September 2007. The meeting was initially referred to as a "major emitters' summit" but the title was changed by the White House in deference to developing nations attending (Clemons 2007). The Major Economies meeting was attended by seventeen nations and/or organisations including all the APP nations. The meeting proceeded on the basis of a written invitation sent by President Bush in early August 2007 for a meeting of major economies on "a post-2012 framework that could include a long-term global goal, nationally defined mid-term goals and strategies, and sector based approaches for improving energy security and reducing greenhouse gases" (White House 2007b). A press conference before the start of the meeting by leading US climate change officials James Connaughton and Paula Dobriansky outlined the scope of the discussions to follow (US State Department 2007a). Both were cautious to make it clear that the Major Economies meeting would feed back to the FCCC process and that the meeting had been endorsed by the 2007 G8 and APEC meetings (US State Department 2007a). Connaughton suggested the meeting was typical of smaller meetings routinely held at FCCC conferences and during the Doha trade negotiations "where smaller groupings of countries have come together to try to break through some issues" (US State Department 2007a). Connaughton outlined the proposed US architecture for a post-2012 agreement, notwithstanding the US's non-participation in Kyoto, as involving a long-term goal for reducing emissions, nationally determined policies to pursue emission reduction and energy security, sectoral based programmes to reduce emissions, expansion of markets for clean energy technologies, action on deforestation and expanded financing for clean technology projects (US State Department 2007a). Connaughton made it clear that the US preferred the "bottom up" approach of public-private partnerships and continued its opposition to binding national commitments:

> *The President strongly believes we will make the greatest progress with a bottom-up approach, where each nation defines its own portfolio strategies, each nation sets the tools by which it will reach those goals… We will continue to resist arbitrary target-setting processes (US State Department 2007a)*

The Statement of Treasury Secretary Paulson to the Major Economies meeting is also instructive in highlighting a role for government as a facilitator of private sector investment in cleaner technologies:

> *Governments can and should do more work together to advance the adoption of clean technologies. We need strong research and development incentives for commercialisation of new technologies..... Public sector investment will matter only to the extent that it leverages clean technology investments by the private sector, where most of this investment will occur. This will mean working with the private sector and adopting market based solutions to increase the adoption rate for proven, cleaner technologies (US State Department 2007b)*

President Bush's speech at the Major Economies meeting emphasised multiple goals of reducing greenhouse emissions, strengthening energy security and encouraging economic growth and sustainable development. He emphasised a need to decouple greenhouse emissions from economic growth through a

new "age of clean energy" (White House 2007c). Bush spoke of the necessity for nations to agree on a long term emission reduction goal and for each nation to design their own separate strategies to achieve that goal. Incentives for the private sector to invest in clean energy technologies and instigation of sectoral working groups for exchange of information on sharing technology and best-practice policies were also promoted. Bush also announced that the US Treasury would establish an "International Clean Technology Fund" supported by "contributions from governments around the world" to "help finance clean energy projects in developing nations" (White House 2007c).

A number of international media outlets reported that delegates to the meeting were largely disappointed at the lack of any significant movement in US policy (Eilperin & Mufson 2007)) and concerned that it had been established to detract from the Bali COP of the FCCC (MacAskill 2007). The Bush Major Economies meeting produced no formal documents at this point. However, a second Major Economies meeting will take place in Hawaii the 30th and 31st of January 2008. Table 3 below provides a summary of the US position articulated at the first Major Economies meeting:

Table 3: Key features of First Major Economies Meeting on Energy Security and Climate Change

	Summary of Content
Participating nations	Australia, Brazil, Canada, China, EU, France, Germany, Indonesia, India, Italy, Japan, Mexico, Russia, South Africa, South Korea, UK and the United Nations
Founding documents	None- simply a letter of invitation
Nature of national obligations	Aspirational, voluntary and nationally determined.
Problem focus	Energy Security, Climate Change, Economic Growth, Sustainable Development
Policy design	Global aspirational goal on emission reduction, national policies to facilitate private sector activity in clean energy research and deployment, improved forest practices, improved financing for developing nation uptake of cleaner energy.
Key activities	Public private partnerships, Fund to Finance International transfer of Clean technologies to developing nations
Joint goal/target on greenhouse emission reduction	Yes. Long term aspirational global goal for greenhouse gas reduction
National goal/targets on greenhouse emission reduction	No. Nationally determined polices to provide incentive to private sector for investment and research in clean technology.
Price on greenhouse emissions	No price on carbon emissions. A matter for national policy.
Sectoral focus	Yes. Sectoral based information exchange on clean energy technology and best practices
Differentiation in obligation	No. Only differentiation on strategies based on national circumstances.
Adaptation to Climate Impacts	No.
Land use change and forestry	Yes. National policies to discourage deforestation and improve sustainable forestry encouraged.

Sources: White House 2007b, White House 2007c, US State Department 2007a, US State Department 2007b,

Analysis

An Emerging Alternative Architecture for the Post 2012 Climate Regime

The APP, APEC Sydney Declaration and US Major Economies meetings demonstrate a determined process of fragmentation of the formal international dialogue on the shape of the post-2012 climate regime by the US and Australia. Although the FCCC/Kyoto Protocol negotiating process remains central, it is now but one of many international negotiating processes that will determine that shape of the post-2012 climate regime. Significantly, this fragmentation occurred during the period 2000-2007 when the US remained opposed to the Kyoto Protocol and pursued an agenda of establishing an alternative approach to binding national emission reduction targets. A comparison of the key features of the non-UN climate initiatives is important to determine the extent of similarity of each approach. The following **Table 4** summarises key features of the non-UN initiatives and provides a comparison with the Kyoto Protocol.

This analysis indicates that the non-UN initiatives in international climate change policy have shifted towards:

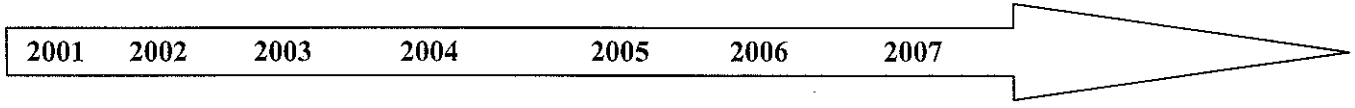
* Research and sharing of information on low emission technologies and policies
* Public-private partnerships for improved technology development and implementation.
* A linking of climate change with an energy security agenda
* Aspirational national emission reduction goals.
* An aspirational global emission reduction goal.
* Emphasis on greenhouse intensity/energy intensity goals.
* Sectoral-based working groups for public-private information exchange and research on development and implementation of cleaner energy and production practices.
* Emphasis upon deforestation and forestry practices in developing nations.
* Emphasis upon improved financing mechanisms for cleaner energy investment in developing nations.

The US has been the driving force behind the non-UN initiatives. Given US opposition to the Kyoto Protocol it is not surprising that the above analysis indicates the non-UN climate change initiatives show a shift towards:

* Reduced emphasis on absolute emission reduction targets/goals.
* Abandonment of legally binding national emission reduction targets.
* Reduced emphasis upon differentiation of obligation based upon common but differentiated responsibility.
* A lack of support for further implementation of an international emission trading scheme.
* Reduced support for domestic regulation to place a price on carbon emissions.

Table 4: Comparison of Non-UN Initiatives and Kyoto Protocol

Sources: Tables 1-3 above.



Regime Feature	Kyoto	US Bilateral Partnerships	Multilateral Technology Partnerships	Asia Pacific Partnership	APEC Sydney Declaration	US Major Economies Process
Absolute national emission reduction targets	√	×	×	×	×	×
Binding national emission reduction targets	√	×	×	×	×	×
Differential obligation based on equity principle of CBDR	√	×	×	×	×	unclear
International emissions trading scheme	√	×	×	×	×	×
Price placed on carbon emissions at national level	√	×	×	×	×	×
Research and information sharing on climate science	×	√	×	×	×	×
Decoupling of economic growth and emissions	√	√	√	√	√	√
Research and information sharing on low emissions technologies and policies	×	√	√	√	√	√
Aspirational national emission targets	×	×	×	√	√	√
Promotion of public-private partnership for technology development and implementation	×	×	√	√	√	√
Focus on energy security & climate change	×	×	√	√	√	√
Sectoral working groups on technology development and information exchange	×	×	√	√	√	√
Regional, national or sectoral greenhouse intensity or energy intensity targets	×	×	×	√	√	√
Focus reduced deforestation in developing nations	√	×	×	×	√	√
Aspirational global goal for emission reduction	×	×	×	×	√	√
Improved financing/investment in cleaner technologies in developing nations	√	×	×	√	√	√

The US-inspired, non-UN initiatives have created a significant alternative discourse for the architecture of the international climate change regime for the post-2012 period. The discourse is particularly evidenced in the APP, APEC Sydney Declaration and US Major Economies Process. The following section investigates this emerging US-inspired climate change discourse for its consistency with ecological modernisation theory.

Asia-Pacific Ecological Modernisation (APEM)?

Ecological modernisation theory arose from environmental sociology and environmental politics to assist explanation of changes in domestic environmental governance during the early nineteen eighties within European industrialised nations (Mol & Sonnenfeld 2000:5). However, Mol has encouraged a wider use of EM theory to assist in explaining changes in global institutions and regional environmental policy practices and non-European settings. (Mol 2002:110). Recent work on EM has therefore sought to contextualise the operation of EM within settings such as Hong Kong (Welford & Hills 2003: 324), South-east Asia (Sonnenfeld 2000) and Vietnam (Frijns et al 2000). The implementation of EM within a given geographical setting will likely give rise to particular national and/or regional variations (Mol 2002:110). Backstrand & Lovbrand recently used EM theory in analysis of discursive contestation for the shape of the post-2012 international climate regime (Backstrand & Lovbrand 2007: 123) at a global level. This paper seeks to build upon this work by using EM theory to interrogate the content of the APP, Sydney Declaration and US Major Economies meeting. The following **Table 5** provides a comparison between the key principles of EM theory identified above and the key features of the APP, Sydney Declaration and US Major Economies process.

Table 5: Comparison of EM Principles and Non-UN Climate Initiatives

	APP	Sydney Declaration	US Major Economies Process
Science and Technology as the key human response to pollution	√	√	√
Market dynamics and Market actors as the carriers of social-economic reform on pollution	√	√	√
Decentralised, flexible governance arrangements rather than "top-down" regulation	√	√	√
Non-state actors to assume traditional administrative, regulatory, managerial, corporate, and mediating functions of the nation-states	√	√	√
Economic Growth and responding to pollution are "win-win" goals	√	√	√
High level of involvement of civil society in public policy making on pollution	×	×	×
Role of the State is Consensual but also Interventionist in responding to pollution	×	×	×

Sources: Tables 1-4 above.

Table 5 indicates the APP, Sydney Declaration and US Major Economies Economies process satisfy five of seven key elements of ecological modernisation identified by Mol & Sonnenfeld 2000, Christoff 1996 and Dryzek 2005 as outlined above. The APP, Sydney Declaration and US Major Economies process draw heavily upon the traditional European ecological modernisation in emphasising scientific/technological optimism, faith in market dynamics, elevated role of the private sector and a positive sum gain between environmental protection, economic growth and business profitability. However, the APP, Sydney Declaration and US Major Economies do not contain two key features of traditional European ecological modernisation. Firstly, the role of civil society, particularly environmental non-governmental organisations (NGOs), has been marginalised during the meetings of the APP, Sydney Declaration and US Major Economies process. The APP was formed behind closed doors and therefore without civil society input (McGee & Taplin 2006). The APP has allowed business representation at some meetings however has excluded environmental NGOs. The Sydney APEC meeting was a state-to–state and state-business economic dialogue with no forums for civil society input. The initial meeting of the US Major Economies process was a high-level, state-to-state forum that excluded formal input from NGOs. Secondly, the APP, Sydney Declaration and US Major Economies process eschew a strong regulatory role for the domestic state in setting emission targets and placing a price on carbon emissions. The most interventionist elements of international climate change policy, binding international obligations, binding national targets and establishing an international price on carbon emissions, are all absent from the APP, Sydney Declaration and US Major Economies process. Instead, these initiatives favour non-binding international obligations, aspirational targets and no international scheme for placing a price on carbon emissions. The APP, Sydney Declaration and US Major Economies process allocate a role for the state as largely a facilitator of cooperation between the private and public sector research bodies on cleaner energy technologies and expansion of business activity in such technologies. A stronger regulatory role for the state in planning for environmental outcomes and establishing a legal framework to allocate, measure, trade and place a price on carbon emission are absent. The APP, Sydney Declaration and US Major Economies process is deregulatory in that it moves away from binding international legal obligations and towards non-binding, aspirational domestic obligations aimed at facilitation of technological research and market implementation.

The APP, Sydney Declaration and the US Major Economies process are firmly embedded in the ecological modernisation principle of technological advancement being the key to overcoming a trade-off between environmental quality and economic growth. However, the strong regulatory state evident in European implementation of ecological modernisation in the areas of acid rain and ozone policy has been replaced with the state as a facilitator of public-private technology partnerships and market expansion of these technologies. The APP, Sydney Declaration and US Major Economies process arguably represent a "deregulatory" variant of ecological modernisation impacting upon the discursive contestation for the shape of the post-2012 climate regime. Backstrand & Lovbrand (2007:131) highlight the fact that the

emissions trading scheme, clean development mechanism and joint implementation mechanisms of the Kyoto Protocol are reliant upon an overarching international regulative framework:

> *Instead of challenging the institutional framework provided by the UNFCCC and the Kyoto Protocol, the global carbon market's flexible and cost-effective solutions to the climate problem are highly dependant upon negotiated caps on national emissions and regulatory science for carbon monitoring, verification, and accounting.*

The APP, Sydney Declaration and the US Major Economies process fail to support such an interventionist international regulatory framework. The role of the state as regulator in climate change policy shifts from a constrainer of undesirable market activity to a facilitator of public-private technology development and implementation by business. The APP, Sydney Declaration and US Major Economies process foreground the market-liberal (Dryzek 2005:159-160) aspects of ecological modernisation theory that are facilitative of trade induced economic growth and provide a more prominent role for market actors. The APP, Sydney Declaration and the US Major Economies process background the aspects of ecological modernisation theory that have a potentially constraining affect upon market activity.

The heavy involvement of Asia-Pacific nations in the articulation of a deregulatory ecological modernisation through the APP and APEC Sydney Declaration is arguably an "Asia-Pacific Ecological Modernisation" (APEM) variant of ecological modernisation. As Mol & Sonnenfeld (2000:12) caution, the implementation of ecological modernisation at the nation-state scale must be contextualised to the local conditions and circumstances. The use of the term APEM is not intended to suggest that each nation within the Asia-Pacific region is adopting a discursive strategy of deregulatory ecological modernisation at a national or sub-national level. Instead, APEM is used to describe a discourse of hybrid governance developing at a regional level regarding the future shape of international climate change policy. The US and Australia have been prominent in formulating and articulating APEM as an alternative to the Kyoto Protocol. However, the nations of the Asia-Pacific region present in the APP and APEC have tacitly endorsed those initiatives and their influence upon the negotiations for the post-2012 climate regime. It is therefore appropriate to use the term APEM to give a sense of the wider support within the Asia-Pacific region for the form of deregulatory ecological modernisation identified above.

Equity and the Long-Term Governance Potential of APEM

The design of international or global institutions able to adequately respond to long-term, incremental degradation of the biosphere poses a significant challenge to the natural and social sciences. Biermann (2006) has proposed a research agenda on "earth system governance" in attempt to spur a research program designed to address long-term socio-ecological problems. Biermann (2006:4-6) notes the problem with delineating a structure of earth system governance is due to its characteristics of *persistent uncertainty* regarding causes, impacts, normative principles and policy response options; *intergenerational*

dependencies between current and future generations, *functional interdependence* of earth system transformations (eg between climate and land degradation); global *spatial interdependence* of natural and social systems and potential for an *extraordinary degree of harm* to social systems. Biermann (2006) provides four key principles of earth system governance as a guide to institutional design. Firstly, *credibility* of institutions and governments such that governments believe the necessary reciprocity exists to "commit resources both domestically and through transnational transfer mechanisms for mitigation and increasingly adaptation policies" over time and space (Biermann 2006:6). Secondly, *stability* over time and against political shocks so that governments have confidence to commit resources knowing the institutional framework will persevere over time (Biermann 2006:6). Thirdly, *adaptiveness,* the ability for institutional structures to respond to new situations without harming the "credibility and stability of the whole system". Fourthly, *inclusiveness*, the governance system should be as "inclusive as possible regarding the stakeholders involved". Significantly, Biermann also recognises that *equity* is a key determinant of the stability, credibility and inclusiveness of institutional structures for earth system governance. The importance of equity in the design of institutional structures is also emphasised in the work of Adger et al (2005:82-83) in design of long term institutions for adaptation to climate change.

Given the importance of equity to the design criteria for earth system governance it is critical to assess the equity credentials of APEM. A traditional distinction is drawn between *procedural equity* (ie equity in the process of rule formation or decision making) and *substantive equity* (ie equity of outcome) (Adger 2005:82-83). In terms of procedural equity, the FCCC provides a model of extensive participation of both state and non-state actors. The FCCC Conference of the Parties process is highly participatory for both state and non-state actors. All nations party to the FCCC have formal status and ability to enter into the dialogue of Conference of the Parties meetings regardless of size or relative power. At times, smaller nations or groupings of nations, such as the Alliance of Small Island States, have had significant impact upon the meetings (Leggett 1999). Similarly, the FCCC Conference of the Parties process has fostered extensive attendance and participation by civil society groups through lobbying and side-event presentations. However, the APP, Sydney Declaration and US Major Economies process have adopted a significantly less participatory approach. The APP has a limited membership of seven nations with no open invitation for wider national participation. APP meetings have been held behind closed doors with only business groups allowed limited formal access. The APP process has excluded civil society groups. Similarly, the APEC Sydney Declaration is a regional grouping that excludes non-Asia Pacific nations and was formed at confidential meetings designed to exclude public participation and the involvement of civil society. The US Major Economies Process is a group of the largest seventeen greenhouse emitters representing 80% of world emissions. However, it excludes the other 160 nations who are party to the FCCC, including many small island nations particularly vulnerable to climate change impacts. The US Major Economies Meeting in September 2007 was again a state-centric affair with no input from civil society or NGOs. APEM shifts participation in climate governance away from universal national participation to select groupings of nations based on power or technological capacity. APEM also shifts

participation in the dialogue of climate change policy to states and business at the expense of social movements and civil society. APEM therefore reconfigures climate change policy formulation to a state-business interaction dominated by the large, influential nations and business organisations. APEM has characteristics of the "elite multilateralism" and "market multilateralism" identified in Backstrand 2007. The APEM discourse therefore seeks to significantly reconfigure the procedural equity principles of universal participation established by the FCCC.

The substantive equity impacts of APEM are also significant. The principle of common but differentiated responsibilities (CBDR) in article 3 of the FCCC provides strong guidance as to substantive equity of international climate change policy. The principle of CBDR represents a tentative settlement of the development tensions between develop and developing nations over climate change. CBDR is concerned with the equity of outcome of the human response to climate change. CBDR provides that developed nations will take on a higher initial burden of obligation due to greater historical responsibility for climate change, greater current capacity to respond and greater capacity to absorb impacts (Sands 2003:285-289). Two of the more obvious examples of CBDR in the FCCC are in the higher obligations that developed nations undertook in regard to binding emission reduction targets and transfer of technology to developing nations to allow them to reduce emissions and adhere to treaty commitments. Interestingly, despite the presence of large developing nations in the APP and APEC, those agreements fail to substantially hold the developed nations to the differentiated emission reduction burden agreed in the FCCC/Kyoto Protocol. The regional energy intensity target of the Sydney Declaration is formally stated to apply across the region with no differentiation between developing and developed nations. Similarly the technology transfer mechanisms activities of the APEM are based upon facilitation of private sector trade and fail to cater for the higher level of obligation developed nations have to transfer cleaner technology under the FCCC. The APP and Sydney Declaration fail to deal with the transfer of cleaner technologies to developing nations on concessional terms, as provided in the FCCC. A frustration at the lack of direct investment in cleaner energy technologies in developing nations from the APP is present in recent Chinese comments at the APP meetings:

> *China finds that the focus of most of the Partnership projects is on soft activities like information sharing, sectoral assessments, capacity building and standardization. There are almost no joint R&D projects between developed and developing Partnership countries. Moreover, the issue of establishing a financial mechanism under this Partnership has not been effectively solved, which creates lots of difficulties for private sectors from developing Partnership countries to participate in project cooperation. We hope that developed Partnership countries can provide financial assistance to Partnership projects and intensify technology cooperation and transfer to promote concrete project cooperation (APP 2007a)*

Despite the APP representing a new forum compared to the FCCC, substantive equity issues regarding concessional technology transfer based on CBDR remain a central concern of key developing nations. A recent announcement by the US Treasury of an "International Clean Technology Fund" as an offshoot of the US Major Economies Process offers a ray of hope of concessional technology transfer being

addressed (McCormick 2008). However, the level of developed nation financial support for this fund and the terms upon which it will be used to make private sector clean energy investment more attractive are yet to be announced.

APEM has some important inconsistencies with the key procedural equity and substantive equity principles of the FCCC. The FCCC has near universal membership and is the clearest expression of the equity principles that nations of the world are prepared to act on climate change. The failure of APEM to adhere to key equity principles agreed in the FCCC creates significant doubt about its ability to contribute to a system of governance that will provide credibility, stability and inclusiveness in the long term. The limited membership and decentralised, hybrid governance approach of APEM gives some advantage in adaptiveness. The decentralised approach of APEM allows for geographic proximity in policymaking and cooperative implementation. The formalities of universal multilateral treaty structures can also make for slower decision making processes and the use of consensus rule-making can give a lack of flexibility in policy response. However, the advantage of greater institutional adaptiveness of APEM is likely to be at the cost of credibility, stability and inclusiveness of institutional design.

The ability of APEM to deliver an effective long term response to mitigation of greenhouse gas emissions must also be seriously doubted. Economic modelling produced for the Australian government for release at the first APP Ministerial meeting (Fisher et al. 2006) and the 2007 APEC Leaders meeting (Fisher et 2007: 72-73) indicates that even on best-case assumptions, adopting a strategy based around APEM will likely lead to an increase in global greenhouse emissions of at least 36% above 2004 levels by 2050. This is in contrast to the growing scientific consensus of the need to reduce global emissions to at least 60% below 1990 levels in order to hold climate change to an increase of two degrees Celsius.

Conclusion

The non-UN initiatives of the APP, Sydney Declaration and US Major Economies process demonstrate an emerging discourse of APEM present in contestation for the future shape of the international climate regime. APEM is inspired by the US desire to articulate a vision for international climate change policy that offers a significant departure from the politically negotiated, binding, absolute reduction targets and carbon markets of the Kyoto Protocol. APEM is a deregulatory discourse that replaces the centralised, politically negotiated and potentially market-restraining national emission reduction targets of Kyoto with the market facilitative, voluntary technology cooperation partnerships and aspirational goals for emission reduction. Under APEM the role of the state shifts from a regulatory constrainer of greenhouse emissions to the facilitator of public-private cooperation on the research and implementation of cleaner energy technologies. APEM is a US-inspired discourse however has received support of key Asia-Pacific nations,

including India and China, both of which will figure significantly in the shape of the post-2012 climate regime.

Serious concerns are raised about APEM as a key strategy for long-term governance of climate change. The APEM discourse has significant conflict with the procedural and substantive equity principles of the FCCC. The FCCC has near universal membership and embodies the strongest expression of global will on the elements of an equitable human response to climate change. The failure of APEM to adhere to key equitable principles undermines its ability to deliver a credible, stable and inclusive institutional framework for long-term climate governance. APEM may offer the superior level of adaptiveness of a hybrid governance strategy, however this far from offsets the likely losses of credibility, stability and inclusiveness for long term global climate governance.

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