

CDM

Prospects for CDM in Post 2012 Carbon Markets

Discussion Paper

On behalf of the German Ministry for the Environment, the German Environment Agency, the German Emissions Trading Authority (FKZ 371141507)

IMPRESSUM

Publisher

German Emissions Trading Authority (DEHSt) at the Federal Environment Agency
Bismarckplatz 1
14193 Berlin

Telefon: (0 30) 89 03-50 50

Telefax: (0 30) 89 03-50 10

Internet: www.dehst.de

E-mail: emissionshandel@dehst.de

Responsible editors: Section E 1.6

Subject editor

adelphi
Caspar-Theyss-Strasse 14a
14193 Berlin

Telefon: (030) 89 000 68-0

Telefax: (0)30-89 000 68-10

Internet: www.adelphi.de

E-Mail: office@adelphi.de

Stand: 07.2012

AUTHORS

Aki Kachi is a Project Manager at adelphi. His work concentrates on international dialogue and exchange in climate, energy and environmental policy with a focus on international carbon markets.

Dennis Taenzler is Head of Climate and Energy Policies at adelphi. His research focuses on climate and energy policies as well as on peace and conflict studies. He has undertaken research on climate protection and energy policies in the European Union, the United States and a number of developing and transition countries for more than 12 years.

Wolfgang Sterk is a Project Coordinator at Wuppertal Institute for Climate, Environment and Energy. His research focus within the *Research Group 2: Energy, Transport and Climate Policy* is on implementation of market-based climate policy instruments (flexible Kyoto mechanisms, EU emissions trading) as well as Globalisation and Resource Equity.

CONTRIBUTING EXPERTS

Dr. Toshi H. Arimura is a Professor of Environmental Economics at the Political Science and Economics Faculty at Waseda University specializing in environmental and climate policy. He was previously Director of the Center for Environment and Trade Research at Sophia University and has spent time as a visiting professor and researcher at George Mason University and Resources for the Future in Washington, DC. He received his Ph.D. in economics from the University of Minnesota.

Martin C. Jones is an environmental economist and researcher at the Centre for Energy and Environmental Markets at the University of New South Wales, Australia. He holds a Diploma of Economics (M.Sc.-equivalent) from the University of Heidelberg, Germany, and Bachelor of Commerce from Monash University, Australia. Martin undertakes research into Australian and international climate change and energy policy and writes regularly for the media.

Yong Gun Kim is the Director of Climate and Air Management Division at the Korea Environment Institute. He has been researched climate policies such as emissions trading, carbon tax and international negotiations for more than 20 years. He also has been developing and utilizing computable general equilibrium model and multiregional input-output model to analyses economic and environmental impacts of climate mitigation policies. He received a Bachelor of Business Administration at Seoul National University, a MS degree in Management Science and a Ph. D. in Environmental Economics at Korea Advanced Institute of Science and Technology.

Dr. Jan Mazurek is a senior fellow with ICF International, where she works on issues related to California's cap-and-trade program in ICF's Sacramento, California office. California governor Arnold Schwarzenegger appointed her senior advisor to the California Air Resources Board in 2010. Dr. Mazurek served at Duke University in 2009 and from 2010 to 2012, where she studied state and federal climate policies. She is the author of *Making Microchips* (1999) and coauthor with J. Clarence Davies of *Pollution Control in the United States: Evaluating the System* (1998).

Table of Contents

INHALT

Authors	1
Contributing Experts	1
List of Abbreviations	2
Preface.....	3
1 Introduction	4
1.1 The CDM’s role in Global Carbon Markets.....	4
1.2 Sources of Demand for CDM	5
1.2.1 EU	5
1.2.2 Japan.....	6
1.2.3 New Zealand.....	6
1.3 Selected Carbon Market Developments	6
1.4 Offset Policies: What Characterizes Offset Policies?	6
1.5 Offset Overview	7
2 Japan	9
2.1 Overview of Japanese Climate Policy	9
2.2 Examination of the Japanese Climate Policy Making Process	9
2.3 Emissions Trading in Japan	10
2.4 Japanese Offset Policy	11
2.4.1 Kyoto Credit Acquisition	11
2.4.2 Bilateral Offset Credit Mechanism	12
2.4.3 Domestic Credit Schemes	13
2.5 Analysis of Future Role of CDM in Japan	13
2.5.1 Main Points of Criticism of the CDM Process.....	14
2.5.2 Suggestions for Reform.....	15
2.6 Contemporary CDM and the Japanese Approach Compared	15
3 Australia.....	16
3.1 Overview of Australian Climate Policy.....	16
3.2 The Australian Emissions Trading System.....	16
3.3 Australian Offset Policy	17
3.3.1 Additionality in the Carbon Farming Initiative	18
3.4 Analysis of Role of CDM in Australia.....	19
3.5 Contemporary CDM and the Australian Approach Compared	21
4 California/WCI.....	21
4.1 Overview of California Climate Policy.....	21
4.2 Examination of the Californian Climate Policy Making Process	22
4.2.1 Other Stakeholders	23
4.2.2 Judicial.....	24
4.3 The Western Climate Initiative	24

4.4	Californian Offset Policies	25
4.4.1	Additionality in the California Offset Protocols.....	26
4.4.2	REDD and sectoral credits	26
4.4.3	California Climate Action Reserve	27
4.5	Analysis of the Potential Role of CDM in California.....	27
4.6	Contemporary CDM and Californian Offset Protocols Compared.....	28
5	South Korea	29
5.1	Development background: A Non-Annex 1 country in the OECD	29
5.2	South Korean Climate Policy	29
5.3	Emissions Trading in South Korea.....	30
5.4	South Korean Offset Policy	31
5.5	South Korea’s Position Towards the CDM	31
6	Prospects for the Development of CDM as a Continuing International Offset Standard	32
6.1	CDM: Standard or Non-Standard?	32
6.2	Outlook for CDM Reform	33
6.3	CDM in the Post-2012 World	33
	Bibliography.....	35

LIST OF ABBREVIATIONS

AAU	Assigned Amount Unit
BOCM	Bilateral Offset Credit Mechanism
CCA	California Compliance Allowance
CCBA	Climate, Community and Biodiversity Alliance
CCS	Carbon Capture and Storage
CCCCJ	Certification Center on Climate Change Japan (or 4CJ)
CDM	Clean Development Mechanism
CER	Certified Emission Reduction (from CDM)
CFI	Australian Carbon Farming Initiative
CRT	Climate Reserve Tonnes; Credit produced by Climate Action Reserve (CAR) standard [North America]
DEFRA	UK Department for Environment, Food and Rural Affairs
EDF	Environmental Defense Fund
ERU	Emission Reduction Unit (from JI)
ETS	Emissions Trading System
EU	European Union
EU ETS	European Union Emissions Trading System
GCF	Governor's Climate and Forests Task Force
IOU	Investor Owned Utility
J-COF	Japan – Carbon Offset Forum
JI	Joint Implementation
J-VER	Japan Verified Emission Reduction
J-VETS	Japan – Voluntary Emissions Trading Scheme
KEI	Korea Environment Institute
LULUCF	Land Use, Land Use Change and Forestry
METI	Ministry of Economy, Trade and Industry, Japan
MoE (J)	Ministry of the Environment, Japan
MOE (K)	Ministry of Environment, Korea
MoFA	Ministry of Foreign Affairs Japan
MKE	Ministry of Knowledge Economy, South Korea
NRDC	Natural Resources Defense Council
OECC	Overseas Environmental Cooperation Center, Japan
PCGG	Presidential Committee on Green Growth
PG&E	Pacific Gas & Electric
REDD	Reducing Emissions from Deforestation and forest Degradation in developing countries
TEPCO	Tokyo Electric Power Co
UCS	Union of Concerned Scientists
WCI	Western Climate Partnership

PREFACE

So far, the Kyoto Protocol has provided a platform for a global carbon market – among others with the CDM as a global currency for emission reductions.

With the decision to maintain the Kyoto Protocol including the existing and new market-based mechanisms, a global carbon market will continue to be accessible. However, diversification and fragmentation of the market will likely increase after 2012, since some Parties to the UN Climate Convention have indicated their intention not to sign the second commitment period under the Kyoto Protocol. At the same time, some governments have started exploring options for bilateral offset mechanisms as part of the emerging architecture of their emissions trading schemes. Such developments could make the comparability of projects more complex and future cooperation of different trading schemes more challenging. This is of much concern to the German Emissions Trading Authority in its capacity as competent German Authority for Emissions Trading and as German DNA.

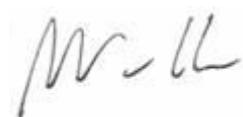
Due to these international developments and due to the lack of demand for carbon credits the future of a global market is still in limbo. Nevertheless, a more optimistic outlook on climate protection measures must be based on the fact that several developed and emerging economies are establishing or evaluating domestic emissions trading systems (ETS) as an instrument to mitigate carbon emissions. Linking these domestic ETS – bilaterally or multilaterally – provides a number of benefits like reducing the cost of cutting carbon pollution, increasing market liquidity, stabilizing the carbon price signal, and supporting global cooperation on climate change.

Most of these upcoming domestic ETS have already included or consider including provisions for allowing the use of offsets. The main objectives of offsetting in a domestic emissions trading scheme are to lower abatement costs for ETS participants, to provide incentives for new technology, and to reduce emissions in the non-ETS-sector. However, various legal frameworks represent different views regarding the admissible volume of offset credits and eligibility criteria for project types. But for all that, relevant steps towards linking and unifying carbon markets are to create widely fungible credits based on comparable offset-standards. In August 2012, the Australian government and the European Commission agreed to seek mandates for an agreement to fully link their respective carbon markets. Such an agreement will include provisions for eligible offset-projects.

Initially, the carbon price in a trading scheme depends on design issues like scope, stringency of caps, allocation methods, price controls and enforcement requirements, as well as on provisions for offsets. Such provisions of international and domestic offset projects are relevant for direct linking as well as for a durable design of a common market with comparable rules for all ETS participants.

Therefore, it is important to look at the provisions for offsetting by potential major carbon credit buyers. This report provides an analysis of Australian, Californian, South Korean and Japanese offset policies. The paper examines the future role of the CDM as an instrument of carbon finance and explores the differences between the CDM and new emerging offset approaches. The report draws conclusions regarding the possible markets for CERs in the post 2012 period and discusses the question if and how a reformed CDM can build a bridge between emerging and existing emissions trading systems.

Berlin, October 2012



Dr. Hans-Jürgen Nantke

Head of the German Emissions Trading Authority at the Federal Environment Agency

1 INTRODUCTION

1.1 THE CDM'S ROLE IN GLOBAL CARBON MARKETS

During the first Kyoto commitment period, the Clean Development Mechanisms (CDM), to a larger extent than originally expected, emerged to be the global currency for emissions trading. The CDM was developed to be an instrument that linked developing countries to industrialized countries in a climate mitigation partnership. Industrialized countries, responsible for the majority of accumulated greenhouse gas emissions, could use their wealth, technology, and know-how to help developing countries, which historically had less responsibility for the accumulation of greenhouse gases in the atmosphere. The partnership enabled industrialized countries, having already invested in capital stock (energy infrastructure, etc.) to make use of its full useful life, and to rather help invest in low carbon technology in countries that had not yet locked in to a dirty development path.

CDM has come to be the primary instrument of global emissions trading, financing \$17.2 billion USD (13 billion Euros in emission reductions¹) in 2011. The market was in essence 'created' by the emission targets established in Article 3 of the Kyoto Protocol under the UNFCCC. According to Article 3, paragraphs 7 and 8 each Annex I Party issues so called Assigned Amount Units (AAUs) up to the level of its assigned amount. With Article 17 of the Kyoto Protocol emissions trading between countries is institutionalized in order to meet the targets, also referred to as „quantified emission limitation and reduction objectives (QELROs)“, over the 2008-2012 commitment period in a cost-effective manner. In addition to AAUs, industrialised countries may use Certified Emission Reductions (CERs) from CDM projects in developing countries as well as Emission Reduction Units (ERU) from Joint Implementation projects in industrialised countries for their Kyoto compliance. Additional demand has been generated through the offset provisions of domestic cap and trade systems such as the EU emission trading system (EU ETS) and the New Zealand ETS (NZ ETS), which allow CERs to contribute to the compliance obligations of regulated entities, by Japan to help meet its global commitments, and to a smaller extent by voluntary buyers, who may wish to offset their other emitting activities.

The global carbon market, developed to help finance greenhouse gas emission reductions between firms and countries, is a diverse and dynamic phenomenon. Tied to global energy commodity prices, but also to land use policies and a number of various other variables, emission allowances, or their corresponding emission reduction units, are traded by a multitude of jurisdictions in a number of different ways. From the EU ETS in Europe to the Regional Greenhouse Gas Initiative (RGGI) in the United States, to emission offset activities in developing countries and voluntary measures across the world, the global carbon market was worth almost \$176 billion USD in 2011.²

CDM is important because

- it gives the global carbon market a mature framework to measure the environmental integrity of offset projects;
- gives project developers a standardized unit to bring to market to finance their projects;
- gives both emitters and project developers a variety of options of how to contribute to sustainable development; and
- gives the market as a whole a generally recognized approval process that helps the international community judge the contribution to sustainable development and greenhouse gas mitigation.

The UNFCCC process, the Kyoto Protocol, and one of its main pillars the CDM hence not only spurred the creation of the global carbon market, but also provided for a kind of glue for various mitigation efforts around the world. But CDM has not been without its critics who have raised questions with regard to additionality, the bureaucracy and transaction costs associated with CDM projects, and the majority of projects being concentrated in a few, primarily, emerging countries. Efforts to reform the CDM are underway, but also face a fractionalization of the global carbon market, with competing or at least alternative domestic and international offset standards being developed by various jurisdictions.

1 Bloomberg New Energy Finance.

2 World Bank 2012.

Examples are Japan's development of a bilateral offset credit mechanism (BOCM) and the development of offset protocols in the framework of the ETS being developed by California and Québec. The increasing diversity poses challenges for established mechanisms such as those of the UN and requires closer examination with respect to their environmental integrity, transparency, traceability, and role in the global greenhouse gas accounting process. It then becomes pertinent to ask:

- What is the current role of CDM in influencing the development of these emerging offset provisions around the world? and
- To what extent can at least aspects of CDM inform the discussion of Monitoring Reporting and Verification (MRV) and accounting issues with a view to a future global, comparable, mechanism that will again help link the world's mitigation efforts?

This is examined within the climate political and institutional settings of four potential sources of offset demand.

1.2 SOURCES OF DEMAND FOR CDM

Though there are a number of sources of demand for CERs, in terms of monetary value and volume, by far the largest source of demand is the EU ETS. The global carbon market is generally largely dominated by the EU-ETS and trading in European Union Allowances (EUAs) accounted for 84% of the total 2011 market value.³ As the EU ETS allows regulated entities to use CERs for at least part of their compliance obligations, this demand drives and dominates the CDM market. Japan is the next major buyer of CERs while other centres for demand are smaller by comparison but currently include New Zealand, a few other countries, and voluntary buyers.

The global carbon market is however dynamic and is constantly changing. Other sources of potential demand may emerge and these are likely to be tied to the emergence of offset provisions in developing emissions trading systems in Australia, California (and its Western Climate Initiative partner, Quebec), and South Korea. This merits a short examination of the existing major buyers and possible future buyers of CERs.

1.2.1 EU

The EU ETS's acceptance of CERs as offset credits has provided the CDM market with its largest single source of demand. This can be observed by the strong historical price correlation between EUAs and CERs. The price spread between the units, historically only a few cents, has grown recently, now stands at 4.11 Euros⁴, and is expected to increase due to the number of new restrictions the EU will impose on access to the market starting in 2013. The EU ETS has never allowed CERs from either nuclear facilities or forestry. Partly because of this, but also because of other factors such as the CDM approval process, these types of projects have never made up a significant proportion of CDM projects (if any). Starting on 1 January 2013, the destruction of trifluoromethane (HFC-23) and nitrous oxide (N₂O) from adipic acid production will also generally be excluded as eligible project types.⁵

Further, CERs from projects that are registered after then end of 2012 will only be accepted if the projects take place in least developed countries (LDCs).⁶ These changes have been made in response to critiques of CDM that in some cases the mechanism provides perverse incentives for the production of industrial gasses in order to destroy them, and that projects have primarily been concentrated in emerging economies such as China, rather than poorer countries that have less access to climate finance. The EU would generally like to phase out the CDM for the more advanced developing countries, arguing that these countries should pursue scaled-up mitigation action at the sectoral rather than project level.

3 World Bank 2011

4 Point Carbon. 2012.

5 Commission Regulation (EU) No 550/2011 of 7 June 2011 on determining, pursuant to Directive 2003/87/EC, certain restrictions applicable to the use of international credits from projects involving industrial gases.

6 Definition of Least Developed Countries in the context of Article 11a(4) of Directive 2009/29/EC http://ec.europa.eu/clima/policies/ets/linking/docs/def_ldc_en.pdf

Further divergence between EU ETS offset policy and using CDM as a standard can be seen in legislation that enables the EU to create its own domestic offset scheme,⁷ and provisions that enable the EU to develop a parallel bilateral offset mechanism with third countries,⁸ perhaps through sectoral crediting. The EU maintains that the development of such provisions should preferably happen “within the UNFCCC framework”⁹ but the option further poses a new variable influencing the future demand of the EU ETS for CERs.

Outside of covered entities in the EU ETS, European Member states may use unlimited amounts of CERs for their QUELROs under the Kyoto Protocol’s first commitment period and for up to 3% of their non-EU ETS emission reduction commitments under the Effort Sharing Decisions between 2013 and 2020. This may also provide an element of demand, though less than that from the number of companies investing for their compliance requirements in the EU ETS.

1.2.2 Japan

As Japan has not been able to reduce its domestic emissions sufficiently to meet its Kyoto target, the government and private companies, through the Keidanren, the Japan Business Federation, reached an agreement to purchase Kyoto credits to bring the country into compliance. This has been considered ‘voluntary’ because the agreement was not made by an act of law, but it is generally seen to be binding. Both Japanese firms and the Japanese government have been large purchasers of Kyoto credits, representing the next largest source of demand for CERs after Europe. Japan has not placed the same restrictions on AAUs, CERs, or ERUs that the EU has, but following criticisms of purchases of “hot air” AAUs from countries in the former Soviet Union, Japan moved to purchase “greened” AAUs, as well as CERs and ERUs. For the 2008-2012 period, the World Bank estimated the total volume of credits to be 372 million tonnes.¹⁰ In this respect, for Japan and Japanese companies, the various Kyoto units compete directly against each other, making the price differential between AAUs, CERs, and ERUs more important. The effect of further developments such as the Tohoku Earthquake of March 2011 and other offset policy measures on CER demand will be discussed in chapter 2.

1.2.3 New Zealand

The New Zealand credit registry allows all Kyoto Credits (AAUs, CERs, ERUs, and RMUs), though, in contrast to Japan, AAUs and temporary CERs cannot be used by ETS covered entities for compliance under the NZ ETS. Still, New Zealand is comparatively a fairly small country and is not considered to be a significant source of international demand.

1.3 SELECTED CARBON MARKET DEVELOPMENTS

The focus of this paper will be: an examination of the future role of the CDM as an instrument of carbon finance, future prospective markets for CERs, the differences between CDM and new emerging offset approaches, and a number of variables that will affect demand for CERs in those markets. These markets include

- Japan and the factors affecting that market,
- Australia,
- the emerging Californian ETS (within the Western Climate Initiative system, which links it to Quebec), and
- South Korea.

The paper will start with an exploration of the characterization and development of offset policies, followed by sections on the respective mentioned markets, a look at the barriers to CDM as the general multilateral offset standard, and, in closing an evaluation of the outlook for CDM in the post 2012 period.

7 Article 24(a) of Directive 2009/29/EC.

8 Article 11(1)5 of Directive 2009/29/EC.

9 http://ec.europa.eu/clima/policies/ets/linking/index_en.htm

10 World Bank 2010.

1.4 OFFSET POLICIES: WHAT CHARACTERIZES OFFSET POLICIES?

Though it is generally to be greeted that there are increased efforts and initiatives to look for GHG emission mitigation opportunities, there is a trend towards a proliferation of offset standards which are associated with potential issues of additionally, double counting, transparency concerns, doubts about the governance of existing standards and registries, and a general lack of information for consumers regarding offset credits.

Offsets themselves predate the CDM, but the development of the mechanism provides a basis to measure and verify emissions in developing countries. The debate about CDM reform is also dominated by questions about additionality, the bureaucracy and transaction costs associated with CDM projects, and the majority of projects being concentrated in a few, primarily, emerging countries. It is, however, questionable to what extent the diversification of international offset protocols improves the system as they make the comparability of projects more complex and the future cooperation of different trading schemes more challenging. This paper aims to offer insights into the development of offset provisions in various jurisdictions, and to inform the discussion of CDM reform and improve its potential as an adaptable global alternative offset framework for the international carbon market. To this end, we analyse a number of elements that we see as characteristic for carbon offset projects, like the legal character of the scheme (binding, voluntary, etc.), quantitative limitations (differentiation depending on project type), qualitative restrictions (on certain kinds of project types, potential reasons for restrictions: sustainability criteria, environmental integrity,) the role of additionality as well as the monitoring requirements.

1.5 OFFSET OVERVIEW

UN Offsets				
Credits:	CER	ERU	AAU	RMU
Mechanism:	CDM	Ji	GIS	LULUCF

EU Offsets (approved and considered)		
CER	ERU	Domestic Offsetting
Excludes afforestation and reforestation. Large hydro projects need to respect criteria of World Commission on Dams. Starting from 2013 not from industrial gases and for new projects only from Least Developed Countries	Article 24(a) of Directive 2009/29/EC	Bilateral/Sectoral Offsetting "preferably within UNFCCC"
	Article 11.a(5) of Directive 2009/29/EC	

Australian Offsets	
International	Domestic
CER, ERU, RMU, Any other offsets the government decides to allow	
Same restrictions on CERs from sinks, large hydro, HFCs and N2O as in the EU but no geographical restriction	Australian Carbon Farming Initiative (CFI)
2 categories: Kyoto and non-Kyoto CFI	

Japanese Offsets				
CER, ERU, AAU, RMU	Transport	Waste Management	Energy Efficiency	Renewable Energy
				REDD+

Californian Offsets			
WCI	CAR	CA Offset Protocols	
Possible approval of Voluntary Carbon Standards	REDD (MoUs with Chiapas, MX and Acre, BR)	Livestock	Ozone Depleting Substances
		Urban Forests	US Forest Projects

Voluntary Offset Protocols			
CCBA	Gold Standard	Green-e Social Carbon	VCS Others

2 JAPAN

The section on Japan contains significant contributions from partner expert Toshi H. Arimura, Professor of Environmental Economics, School of Political Science and Economics, Waseda University in Tokyo, Japan

2.1 OVERVIEW OF JAPANESE CLIMATE POLICY

In fiscal year 2010, Japan had emissions of 1,256 MtCO₂e¹¹, an increase of 3.9% over FY 2009, and a reduction of total emissions from the Kyoto Base year of 0.4%. The Japanese target in the Kyoto Protocol is a reduction of 6% compared to 1990. This reduction has been adopted into national law and the difference to the Kyoto target is expected to be offset through the purchase of Kyoto compliance units. Japan has been active in the international carbon market with the government and firms buying CERs, ERUs, and AAUs.

Though a compulsory emission trading scheme has been discussed in policy circles, legislation is at best on hold and it is highly unlikely that Japan will introduce a cap and trade scheme in the short term. Further, Japan has announced that it does not currently plan to join a second Kyoto commitment period. Despite its refusal, Japan has announced a target of reducing emissions by 25% by 2020 and by 80% by 2050 (compared to 1990 levels, which stood at 1,364.9 MtCO₂e¹²). This second target has not been adopted into national law, and if it is to be reached, it is expected to be accomplished with a substantial contribution from international offsets, including AAUs, CERs, ERUs, and the Bilateral Offset Credit Mechanism (BOCM) being developed between the Japanese government and a number of other countries. Thus demand for international offsets in the case of Japan is unrelated to a domestic emissions trading system and is created primarily by Japanese international commitments. The 25% target may be revised downwards in reaction to the impacts of the Tohoku earthquake, indeed the Japanese government in its submission to the Ad Hoc Working Group on Long-term Cooperative Action under the Convention stated that after the earthquake the country “is now developing the Strategy for Energy and Environment which includes new energy policies from scratch and policies to tackle global warming after 2012”.¹³

2.2 EXAMINATION OF THE JAPANESE CLIMATE POLICY MAKING PROCESS

Japanese climate policy is primarily a product of interactions between government ministries and the domestic political balance. The Ministry of Economy, Trade and Industry (METI) is the main ministry responsible for energy policy and is seen as close to industry and the Keidanren (the Japan Business Federation); the Ministry of the Environment (MoE (J)) is responsible for climate policy and is seen as closer to academia and NGOs; and the Ministry of Foreign Affairs is responsible for bi- and multi-lateral climate and development policy and is responsible for the coordination of the views of various ministries and to develop a common position acceptable to all ministries for international negotiations.¹⁴ Partly out of energy security concerns, METI and its Agency for Natural Resources and Energy have traditionally placed great emphasis on energy efficiency measures. Shifting domestic politics has less of an effect on the positions of the ministries than the balance of power between them. The Prime Minister has changed six times in the last six years. With each change, there have been changes in the configuration of the climate policy making process between ministries, though their individual positions remain fairly consistent.

Prime Minister Fukuda in 2008 announced a Japanese reduction target of 60-80% of 2008 emissions by 2050.¹⁵ Prime Minister Aso, who took over after the sudden resignation of Prime Minister Fukuda, continued to maintain the Fukuda goals and added a mid-term goal of a 15% reduction from 2005 level by 2020 (8% from 1990 levels).

11 Ministry of the Environment, Japan 2011.

12 World Resources Institute 2012. <http://cait.wri.org/cait-unfccc.php?page=yearly>

13 UNFCCC 2012.

14 Kameyama 2010.

15 Japan 2008.

In August 2009, the Democratic Party of Japan (DPJ) defeated the Liberal Democratic Party in elections, ending a line of LDP Prime Ministers which had only been occasionally and briefly interrupted since 1955. Yukio Hatoyama was elected Prime Minister in September 2009 and in December declared at COP 15 in Copenhagen that Japan would provide \$15 billion USD in climate financial assistance by 2012, and later in New York announced that Japan would increase its reduction target from 8% to 25% by 2020 compared to 1990 levels.¹⁶ Though not necessarily ideologically different from the LDP (many DPJ party members and Members of Parliament are former members of the LDP), the DPJ had long been a strong opposition party and was seen to be less beholden to the ministerial bureaucracy and business lobby groups.

METI is Japan's largest ministry in terms of budget and personnel and maintains several research institutions including the New Energy and Industrial Technology Development Organization (NEDO) and the Research Institute of Innovative Technology for the Earth (RITE), which are primarily technologically driven. METI (then the Ministry of International Trade and Industry (MITI)) founded the Institute of Energy Economics, Japan (IEEJ) in 1966,¹⁷ staffed by a combination of IEEJ staff, staff on loan from METI, and various other guest researchers from academia and industry including former CDM Executive Board Member Akihiro Kuroki and former International Energy Agency Executive Director Nobuo Tanaka, who is also a member of the CDM Policy Dialogue process. METI has continually resisted the implementation of emission trading system or carbon tax and supports instead so called "win-win" climate measures such as energy efficiency and technological development both for domestic use and for export.¹⁸

MoE (J) was upgraded to a cabinet level position from the Environmental Agency in 2001. It has a comparatively smaller budget and staff. MoE (J) also maintains several research institutes including the National Institute for Environmental Studies (NIES) and the Institute for Global Environmental Strategies (IGES), which work as policy analysis and research arms of the Ministry. Emissions trading and policy with regard to flexible mechanisms are competences the Office of Market Mechanisms, a division of IGES founded in 2007. It has primarily been the MoE (J) that has pushed emissions trading on the policy agenda, starting the Japan-Voluntary Emissions Trading Scheme (J-VETS) in 2005, and advocating compulsory phased in participation, absolute targets, and auctioning.¹⁹ The Overseas Environmental Cooperation Center, Japan, was established in 1990 with the then Environment Agency, it now works closely with the Ministry, and with the Ministry of Foreign Affairs, JICA, JBIC, and other agencies.

A further institution involved in Japanese international climate activities is the Global Environment Centre Foundation (GEC). Originally established as a UNEP support entity for its International Environmental Technology Center in Osaka, GEC became a public interest corporation under the direct supervision of the Japanese Prime Minister's Cabinet Office in 2010.²⁰

2.3 EMISSIONS TRADING IN JAPAN

Japan, as far as official policy goes, does not currently plan on introducing a cap and trade scheme, but according to a recent market survey by Thompson Reuters Point Carbon 44% of respondents expect that by 2017 Japan will have introduced a mandatory national cap-and-trade system. Further, three issues are worth consideration: the existing Japan – Voluntary Emissions Trading Scheme (J-VETS), the actual events leading to a policy standstill for the Japanese ETS, and the emergence of increased sub-national action in energy and climate policy including in the regulation of nuclear power and emissions trading on the prefectural level as in Tokyo.

Voluntary Cap-and-Trade: Japan's Voluntary Emissions Trading Scheme (J-VETS) was launched by the Ministry of Environment in 2005. Participation is voluntary, companies set their own targets, and receive subsidies to finance abatement technology. If targets are not met, the subsidies must be reimbursed, but companies can comply with the scheme through buying Japanese Pollution Allowances (JPAs) from other covered entities, CERs, ERUs, or domestic offsets. Monitoring follows ISO guidelines.

16 Japan 2009b.

17 IEEJ 2004.

18 Rudolph and Park 2010.

19 Rudolph and Park 2010.

20 More information can be found at <http://gec.jp/>

The program was originally intended to be a pilot program and was later merged with the Voluntary Action Plan of the Keidanren to form the Integrated Domestic Market of Emissions Trading (IDMET) in 2008. This greatly increased participation and coverage of the program, led to reductions of 0.6 million tCO₂e in 2009 and helped to develop the infrastructure and capacity for a future emissions trading system.²¹

When the DPJ took power in national elections in 2009, work was started on a national compulsory emissions trading scheme to help the country reach Prime Minister Hatoyama's reduction goal of 25% by 2020. The legislation, entitled "Basic Act on Global Warming Countermeasures" was introduced to the Diet (Japan's Parliament) in March 2010. In the wake of a finance scandal, internal power strife within the DPJ, and poor polling before the upper house elections in July, PM Hatoyama resigned in June 2010. The DPJ went on to lose the upper house elections in July leading to the suspension of discussion of the emissions trading bill. The bill is however still officially "under consideration".

While emission trading is currently at a standstill on the national level, the Tokyo Metropolitan Government introduced a cap-and-trade system in fiscal year 2010. In FY 2006, Tokyo had emissions of 59.6 million tonnes of greenhouse gasses, approximately comparable to Sweden or Norway. The system aims to reduce the emissions of large emitters by 6% in the first compliance period (FY 2010 to FY 2014).²² Similar initiatives have been discussed and started in Saitama Prefecture, Chiba Prefecture, and possibly Osaka-Kansai. Though a very centralized country Japanese regional governments have started to increasingly assert themselves in policy making. Regional governments are responsible for approving safety checks on nuclear power plants, which was formerly a routine, almost rubber stamp procedure. Since the Fukushima nuclear disaster in 2011 however, all nuclear power plants have been shut down for safety checks. As of the summer of 2012, only two regional governments had given their assent to national government requests to restart the plants, but the regional government's resistance has given them a larger role in energy policy, which may spill over into other areas beyond emissions trading and nuclear safety.

2.4 JAPANESE OFFSET POLICY

There are three main areas of Japanese government activity with regard to offset crediting: international Kyoto mechanism credits (CDM, JI, and emissions trading between countries); the new Bilateral Offset Credit Mechanism; and the Ministry of the Environment's domestic carbon offsetting scheme.

2.4.1 Kyoto Credit Acquisition

Japan, especially after the repercussions for nuclear power after the Tohoku Earthquake of 2011, will not be able to meet its Kyoto commitments without offsetting. Japanese firms were early large buyers of CERs and ERUs, accounting for 41% of volumes purchased in 2003-2004.²³ Japanese buying activities of Kyoto credits by the public sector is done through NEDO and for the public and private sector through a public private partnership called Japan Carbon Finance Inc. (JCF). NEDO, through its Kyoto Mechanism Credit Acquisition Program, buys CERs, ERU, and AAUs, which is co-overseen by METI and the MoE (J). AAUs are acquired through Memoranda of Understanding with other Annex I countries via GIS. Prominent MoUs include those with Hungary (signed in 2007), Ukraine (signed in 2008), the Czech Republic (signed in 2008), Poland (signed in 2008), and other countries. NEDO announced in April 2011 that since inception of the credit acquisition project it had acquired 81,938,000 tCO₂e.²⁴ JCF Inc. is a public private partnership established in 2004 which uses funds from the Japan Greenhouse Gas Reduction Fund (JGRF), also established in 2004, to consult and develop CDM and JI projects and buy CERs and ERUs. JCF Inc.'s main shareholders are the Japan Bank for International Cooperation (JBIC), the Development Bank of Japan Inc. (DBJ), Chubu Electric Power Co. Inc., Tokyo Electric Power Co. (TEPCO) Inc., JX Nippon Oil & Energy Corp., Mitsubishi & Co., and Sumitomo Corp. 24 other private companies also contribute to the JGRF.

21 IETA 2011.

22 Tokyo Metropolitan Government 2010.

23 World Bank 2004.

24 NEDO 2011 (in Japanese).

A national registry for owners of Kyoto credits, public and private, has been developed and is co-managed by METI and MoE (J). In Fiscal Year 2011, NEDO acquired 7,655,000 tCO₂e of Kyoto Credits for the Japanese government.²⁵

On 4 June 2012, TEPCO, the owner of the disaster stricken Fukushima Daiichi nuclear power plants, announced that it would no longer buy UN credits to offset its allowances. Hit with massive losses, the Japanese national government has had to bail out the company and help it with compensation claims for damages. TEPCO bought 16.8 million UN credits in 2009 to help it reach its voluntary emissions reduction goals. The loss of demand from TEPCO leaves even more credits on an already slack market.²⁶

2.4.2 Bilateral Offset Credit Mechanism

Complementary to its purchases of Kyoto credits on the international market, Japan is developing a Bilateral Offset Credit Mechanism (BOCM). The program is officially seen as complementary to the CDM, not as a replacement, but the mechanism reflects many of the Japanese criticisms of the CDM (see below). In addition, this issue probably has to be seen in the broader context of Japan's general opposition to the Kyoto framework. There is a general perception in the Japanese government and among Japanese companies that Japan is already highly carbon efficient. The country continues to have the highest carbon productivity in the G20 (measured as a factor of GDP produced for each tonne of greenhouse gas emissions produced in the economy).²⁷ On this basis, the Kyoto approach is considered to be disproportionately disadvantageous to Japan. A further aspect is that if Japan does not join the second commitment period, it may not be able to continue using the Kyoto Mechanisms and would hence need another channel for offsetting.

Based on the perception that Japan is already highly carbon efficient, there is a widespread perception that the 25% target for 2020 will be very difficult to attain. This perception has been heightened by the impact of the Fukushima accident, which has led to a shift from nuclear power plants to fossil fuels. Japan therefore considers that it has a need for cheaper abatement options and greater volumes than so far offered by the CDM. Finally, the BOCM is explicitly geared towards promoting the export of Japanese companies' technologies, products and services.²⁸

The Japanese cabinet office started discussing bilateral reduction efforts in as early as March 2010, further formulating the goals that such a program would "reduce worldwide GHG emissions by 1.3 billion tonnes by using Japanese private sector technology" and a mechanism be established which "can appropriately evaluate Japanese companies' contributions to GHG emissions reduction efforts overseas, for instance, through the provision of their low-carbon technologies, infrastructure, and products".²⁹ In 2010 the GEC began feasibility studies involving a new mechanism. The concept was then further developed and the Japanese government opened a call for tender for bilateral offset project on 1 April 2011. The MoE (J) and METI had a budget of 8.4 billion yen (81.48 Million EUR) for FY 2011 (April 2011-March 2012) to conduct BOCM feasibility studies. Though it still requires parliamentary approval, a budget adopted by the government in Dec 2011 reduced the BOCM development budget to 5.9 billion yen. As of Oct. 2012, there are total of 170 feasibility studies implemented for BOCM and the new market mechanism. Various sectors have been including: transport, waste management, energy efficiency, renewable energy, and REDD+.

Japan has simultaneously made great effort to solicit international support for its BOCM initiative and has signed bilateral agreements with India and Vietnam in order to explore the implementation of BOCM projects. A further agreement with Indonesia is expected soon. Language in the outcome of the 2011 East Asia Summit (ASEAN +6), 18 Asia-Pacific Country Forum) gave further support to the initiative at its sixth meeting in Bali, Indonesia, where for the first time, the US participated as an observer.

Japan expects its BOCM to be simpler and more flexible than the CDM, with administration of projects and crediting to be conducted on a bilateral Japanese-host country basis instead of through the UNFCCC.

25 NEDO 2012 (in Japanese).

26 Masaki 2012.

27 Vivid Economics 2011.

28 cdc climat research 2012.

29 Ministry of the Environment, Japan. 2011.

The mechanism should further give more importance to energy efficiency initiatives, which the Japanese government sees as comparatively disadvantaged under the CDM. MRV standards have yet to be finalized, which will be developed in the feasibility studies, which will be used to develop standardized baselines for project categories according to international guidance and accounting rules.

Specifically, Japan sees its BOCM as working to accomplish several specific objectives. In addition to cheaper emission reductions than through CDM/JI, Japan sees the potential of a first mover advantage for projects that might otherwise eventually be eligible for CDM/JI (or NAMA crediting), though because of the long CDM/JI approval process, this would be done more efficiently. The Japanese private sector is expected to be involved through using Japanese financial institution financing, using Japanese technology, and/or using other Japanese services such as capacity building. Partly for this reason, the Japanese private sector has already expressed a great deal of support for the initiative, including from electric utilities, steel industry, large trading houses, and the information and communications sector.³⁰ Grants for capacity building and concessionary loans are further considered to be part of the Japanese Fast Start Finance (FSF) pledge. By the end of the 2012 fiscal year, Japan expects to have spent \$15 billion USD on FSF since the COP 15. In 2011, \$39 million USD was spent.³¹ Public sector agencies involved include JICA/JBIC, the Nippon Export and Investment Insurance (NEXI) (comparable to a public Euler Hermes), NEDO, IGES, IEEJ, and NEXI which has provided untied loan insurance to the Vietnamese Song Bac hydropower project, one of the BOCM studies.

2.4.3 Domestic Credit Schemes

The “Domestic Certification System of Emission Reduction”³² is an offset credit system run by the METI, called into being in the Kyoto Protocol Target Achievement Plan which was first formulated in 2005. METI developed the operating rules together with the Ministry of the Environment and the Ministry of Agriculture, Forestry and Fisheries, though METI has jurisdiction over the committee for Domestic Credit Certification, which meets on a monthly basis. The system, sometimes called the “domestic CDM”, certifies emission reductions by small and medium-sized companies generating credits which can then be used by larger companies for carbon neutrality such as through the J-VETS. Though METI publishes press releases with a summary of the result of the meetings of the Domestic Credit Certification Committee, standards for MRV are unclear. Members of the Committee include Yoichi Kaya and three others selected from academia and industry. At the 23rd meeting of the committee on February 20, 2012 the committee had approved 66 applications for domestic credit certification amounting to 30,823tCO₂. A total of 958 reduction projects have been approved, including a new approval of “updating to air compressors driven by steam”. Categories of technology introduced include biomass boiler introduction, introduction of heat pumps, installation of industrial stoves, lighting facility improvements, introduction of inverter controls, installation of PV, and others.³³

The MoE (J), sensing a lack of transparency in the voluntary carbon offset sector, started the Japan Carbon Offset Forum (J-COF). The forum was the product of a workshop held by the ministry which included experts from local government, lawyers, third party verifiers, and NGOs. Out of this process, the Verified Emissions Reduction Program (J-VER) was then established in November 2008³⁴ based on ISO14064-2. Validation and verification of offsets is based on 14064-3, with a positive list approach as additional criteria for validation. The scheme uses third party verifiers accredited on the basis of ISO 14065, for the domestic credits primarily in afforestation/ reforestation projects.

Credits are primarily geared towards voluntary compliance buyers and are issued and managed through the Certification Center on Climate Change Japan (CCCCJ). Further, the MoE (J) has cooperated with the UK Department for Environment, Food and Rural Affairs (DE-FRA) since 2008 with regard to domestic offsetting policy, best practices in offsetting policy, carbon foot-printing, and procedures for quality assurance in carbon offsetting schemes.

30 UNFCCC 2011.

31 Whitley 2012.

32 Basic information on the scheme can be found <http://jcdm.jp/> (in Japanese)

33 METI 2010.

34 More information can be found here: http://www.4cj.org/jver/e/about_jver.html

2.5 ANALYSIS OF FUTURE ROLE OF CDM IN JAPAN

Most experts expect Japan to comply with its commitments under the Kyoto Protocol, but given the effects of the Tohoku Earthquake in March 2011 on Japan's energy supply, further commitments may prove harder to fulfil. Despite refusals to join a second commitment period, Japan has targets of a 25% emission reduction by 2020 and by 80% by 2050, contingent on international agreements where all major economies agree to ambitious targets.

These targets were set before the earthquake and have not yet been adopted into national law,³⁵ but if they are to be accomplished, as with targets for the first commitment period, it will be with the help of international offsets. Factors of uncertainty include the supply and prices of CERs (including different kinds of CERs), ERUs, AAUs, and the potential BOCM as discussed above. Depending on prices, public and private Japanese buyers of Kyoto credits may elect to sell their CERs for lower priced AAUs ("greened" or not) which would depress the price for CERs.

2.5.1 Main Points of Criticism of the CDM Process

The above mentioned country's criticism of the CDM relates to various factors. According MoE (J), of CDM/JI 183 feasibility studies conducted, only 11 projects have been registered as CDM projects by the CDM EB. Approval of the CDM EB has been criticised specifically with regard to the following points.³⁶

First, it considers the rules on additionality and MRV as excessively strict and complex. Japanese submissions to the UNFCCC submit that the "principle of additionality (...) should be reviewed, reverting to its original concept provided in the Kyoto Protocol. Utilizing the experience and knowledge acquired so far, the mechanism should be redesigned with due consideration to the accessibility for project operators. (Japan 2009: 64) The following section will go into further detail on this issue.

Second, Japan objects to the exclusion of nuclear power. Japan has consistently held that the CDM should be technology-neutral. "In tackling climate change, it is necessary to mobilize all the effective technologies available". Japan raised the same point regarding Carbon Capture and Storage (CCS), but this criticism has arguably been removed by the Durban decision allowing the inclusion of CCS (Japan 2009: 62)

Third, it criticises the sectoral distribution of projects, in particular the low probability of getting energy efficiency projects approved (Japan 2008: 26).

Fourth, it criticises the unequal geographical distribution of projects. Japan considers that "countries which need urgent support for emission reductions (especially vulnerable countries and LDCs) should be prioritized as host countries of CDM projects." Japanese submissions favoured differentiation, for example in terms of which methodologies may be used or the stringency of baselines (Japan 2009: 65).

Fifth, Japan considers that the CDM's contribution to sustainable development has been too low. Japan has called for giving procedurally and financially preferential treatment to projects which have high co-benefits effects, such as reduction of air and water pollution. (Japan 2009: 61)

While government statements that have so far been reviewed do not go into detail on the alleged excessive complexity of the CDM process, the Institute for Global Environmental Strategies (IGES), which is generally close to the government, has produced various reports on the CDM's shortcomings and suggestions for reform. The points of criticism are as follows:

Koakutsu et al. (2011: 6) claim that the CDM procedures lead to many projects being stopped before they get off the ground. Based on the IGES project database, they claim that nearly 2,000 projects have been halted during the validation process due to issues such as contract terminations and replacements, which has led to an estimated loss of 1.1 billion CERs by end of 2012 and 2.6 billion by the end of 2020. (Koakutsu et al. 2011: 6)

Furthermore, the report indicates that, in 2011, the timeline for projects that were registered after a review was 234 days and 109 days for projects that were registered automatically.

³⁵ UNFCCC 2012a.

³⁶ Ministry of the Environment, Japan 2011.

However, the report acknowledges that progress has been made. While in 2010 the average number of days from requesting registration to final registration was 220 days, in the first quarter of 2011 it dropped to 115 days. This substantial decrease was probably due to the introduction of the new registration procedure, which inter alia allows the effective date of registration to be the date on which a complete request for registration has been submitted. Similarly, while in July 2010 only 58% of projects were registered automatically, in 2011 this ratio jumped to 93%, probably due to the revised review procedure adopted at EB55. (Koakutsu et al.: 7f)

Going into the reasons for reviews, the authors highlight that additionality accounts for half of the requests for reviews of registration. Among the reviews related to additionality, the investment analysis is the most frequently cited reason, accounting for 60% of the requests for review. This ratio has remained stable despite various new EB guidelines. (Koakutsu et al. 2011:16f)

The report also considers the issuance process as still too lengthy. Here as well, new review procedures were introduced in 2010, but nevertheless the average number of days between the request for issuance and actual issuance increased. The ratio of requests for review dropped after the second quarter of 2010 but has since again increased and stands at about one third of all submissions. The average number of days from registration to first issuance of CERs has constantly increased since 2006 and reached a peak at 868 days in 2011. (Koakutsu et al. 2011: 9-14) The authors in particular criticises the procedures for requesting approval of changes from PDD, particularly that the same procedure applies to all projects and all changes. They propose differentiation based on project size and scale of the changes. (Koakutsu et al. 2011: 20)

2.5.2 Suggestions for Reform

To resolve the identified problems, Mizuno et al. (2010) and Koakutsu et al. (2011) propose a fundamental reform of the CDM by “shifting from judging to checking”. Both reports consider that the largest barrier in the CDM is the many uncertainties about whether a project will be registered and whether as many CERs as expected will be issued. The main reason for this uncertainty is the judgement DOEs and the EB need to exercise when assessing projects. Both reports suggest that to remove this problem the counterfactual project-by-project approach to additionality should be replaced by a top-down approach based on clear eligibility criteria and quantitative parameters, such as that which is already employed for microscale projects.

In particular, the EB should establish a positive list of specific project types of a specific size which would be deemed automatically additional. For those project types where this is not feasible, the EB should set default parameters, in particular for the parameters that are needed for the investment analysis. Mizuno et al. (2010) acknowledges that this should be done conservatively and may reduce the number of CERs that may be claimed, but consider that the advantages of reduced uncertainty would outweigh the disadvantages. In the same vein, standardised baselines should include criteria for automatic additionality.

Mizuno et al. (2010) acknowledge that the ideas they propose are not radically new and that the EB has already taken some steps toward further standardisation.

2.6 CONTEMPORARY CDM AND THE JAPANESE APPROACH COMPARED

	CDM	BOCM
Legal Character (international/legal institution, voluntary, etc.)	International Law, UNFCCC, Kyoto Protocol	Not fully institutionalized, perhaps subject to further clarification as a New Market Mechanism
Quantitative Limitations (differentiation depending on product type)	Various limitations coming from ETS administrators	None
Qualitative restrictions (certain kinds of project types)		
Potential reasons for restrictions: sustainability criteria, environmental integrity, etc.)	Nuclear energy; Various restrictions depending on jurisdiction for compliance in various ETS.	Various categories, Methodologies to use ISO standards, but MRV provisions still not established

	CDM	BOCM
Role of additionality	Determined by CDM EB on a project by project basis	Evaluation on bilateral Japanese-Host Country level
Monitoring, Reporting and Verification Requirements	Monitoring according to methodologies approved by CDM EB, verification by DOE	Unclear. Guidelines mention ISO and Kyoto Mechanisms approaches, further, the MoE is considering using a positive list approach, similar to those in California, Australia, and the J-VER systems

3 AUSTRALIA

The section on Australia contains significant contributions from partner expert Martin Jones of the Centre for Energy and Environmental Markets (CEEM) at the University of New South Wales, Australia.

3.1 OVERVIEW OF AUSTRALIAN CLIMATE POLICY

Australia will implement what it calls a “Carbon Pricing Mechanism” starting on 1 July 2012 with a target of reducing emissions by 5% by 2020 and 80% by 2050 (compared to 2000 levels). The ETS will cover about 60% of Australian direct emissions.³⁷ No international offsets will be allowed during the initial three years (2012-2015) of the ETS, where allowances will have to be purchased at a fixed price from the government. Afterwards, 50% of obligations may be met with international offsets, but international offset credits will be subject to a surrender charge, effectively establishing a carbon price floor for such credits. Depending on international action, the Australian government has left open the option of increasing the 2020 reduction goals from the 5% up to 15% to 25% (over 2000 levels). The Climate Change Authority (CCA) will have independent power to recommend future targets, emissions caps, and **regulations regarding offsets**. While the government does not have to follow the recommendations, the recommendations will be published and deviation from the CCA recommendations must be publicly justified.

3.2 THE AUSTRALIAN EMISSIONS TRADING SYSTEM

Carbon measures in Australia started under Labor State governments such as that in New South Wales in 2003. In January 2004, a working group of senior officials, which subsequently became the National Emissions Trading Taskforce, was created by the First Ministers of State and Territory Governments. In December 2006, then Prime Minister John Howard of the conservative Liberal/National Party (L/NP) Coalition established a Prime Ministerial Task Group on Emissions Trading. At the time, both the L/NP and the then opposing Labor Party were committed to the introduction of an emissions trading scheme. The Labor party, then led by Kevin Rudd, won the election in 2007 and started working on emissions trading legislation with the L/NP party until the conservative opposition leadership was replaced, leading to a stalling of progress. PM Rudd then decided to postpone further work on emissions trading legislation until after 2012, which was a factor in his losing party leadership. In the 2010 elections, the conservatives campaigned against emissions trading, but Labor was able to form a minority government with several independent MPs in the lower house and with the Greens in the upper house of parliament. The Multi-Party Climate Change Committee was formed from these independents, Greens, and Labor and in July 2011 drafted the Clean Energy Future package.³⁸ The legislation passed the House of Representatives on 12 October 2011 and the Senate on 8 November 2011.

Starting on 1 July 2012, the Australian ETS will start out at a fixed price of \$23 AUD per ton of CO₂e, which will rise by 5% (estimated to be 2.5% in real terms) a year until 2015, at which point the price will be determined by the market.

³⁷ Jones, Twomey, MacGill and Betz 2011.

³⁸ An Overview of the Clean Energy Future Package can be found at: <http://www.cleanenergyfuture.gov.au/wp-content/uploads/2011/11/CEF-overview-20111109.pdf>

The ETS will have a price floor of \$15 AUD and a price ceiling of \$20 AUD above the expected “international price” (international price is not further defined). The price floor will rise by 4% a year (in real terms) and the ceiling by 5% per year (also in real terms). Gases that will be covered include CO₂, CH₄, N₂O, and perfluorocarbons from the aluminum sector. Facilities that have direct GHG emissions of more than 25,000 tons a year will have to comply with the scheme. Covered sectors include the electricity sector, industry, diffuse emissions, and landfills. Sectors that will be covered indirectly through the price on carbon include domestic air travel and cargo, sea and rail traffic.

3.3 AUSTRALIAN OFFSET POLICY

Current Australian offset policy consists of both accepting of international offsets as compliance instruments in the Carbon Pricing Mechanism after 2015 as well as the development of domestic offsets through the Australian Carbon Farming Initiative. Previous to the development of the pricing mechanism, the Australian government had already taken steps to regulate standards for voluntary offsets and participated in international REDD and REDD+ initiatives.

International offsets are however also a point of political division in Australia. The proponents of emissions trading, the Australian Labor Party (ALP) and The Greens, are generally positive toward international offsets, arguing that they are economically efficient, lower costs domestically, and support global action against climate change. Both the ALP and The Greens (more so the latter) want to limit the number of international offsets used so as to support domestic action or increase so-called supplementarity. The Federal Opposition – the largest non-Government party, a coalition of the Liberal Party and National Party – are currently against emissions trading³⁹, and – probably for that reason – against the use of international offsets. They portray international offsets as having low quality, being “shonky”⁴⁰ or “dodgy”, and “sending taxpayers’ money overseas”, for example in an editorial by Greg Hunt, the Opposition’s Shadow Minister for Climate Action, Environment and Heritage.⁴¹ The private sector, however, - in particular liable industries - supports the use of as many international offsets as possible, with as few restrictions as possible.

The Government’s Clean Energy Future (CEF) plan foresees the use of international offsets to meet up to 50% of company’s liability from July 2015 onward, when the ETS moves to a flexible price. These offsets include the CDM’s Certified Emission Reductions (CERs), but also Emission Reduction Units (ERUs), Removal Units (RMUs), and “other units the Government may allow”. This may include certificates generated through REDD/REDD+, which the Government views positively.

During the fixed price period a limit of 5% of emissions can be offset through the Australian domestic offset program, known as the Carbon Farming Initiative (CFI, see below). After the introduction of the flexible price in 2015, there will be no limit on the number of Australian Carbon Credit Units (ACCUs) generated under the CFI that can be used for compliance.

However, the number of credits generated in the first few years of the scheme is likely to be limited. Reporting to the DCCEE is the Domestic Offsets Integrity Committee⁴², which assesses methodologies for the CFI and advises the Ministry for Climate Change and Energy Efficiency.

Key factors affecting the choice of offset procedures will be coordination with schemes Australia wishes to link to – foremost the New Zealand ETS and EU ETS – and concerns about the number/quality of offsets entering the Australian scheme under a particular methodology. To date, the amount of international offsets that can be used under the NZ ETS is unlimited. However, plans exist to restrict this amount in the future, in order to facilitate a linking up to other schemes. The extent to which international offsets compete with ACCUs, which are currently the main driver of agricultural emissions reduction activities, will also be an issue.

50% of obligations may be met using CERs, ERUs, or RMUs, though this is subject to review by the Climate Change Authority (CCA). The CCA will conduct a review of the 50% requirement of liable parties in 2016.

39 Under previous leaders, the Opposition have supported emissions trading (see above).

40 Sheridan 2012.

41 Hunt 2012.

42 The website of the Committee can be found at <http://www.climatechange.gov.au/government/initiatives/carbon-farming-initiative/domestic-offsets.aspx>

Geographic restrictions with regard to where the projects come from specifically (in contrast to the EU's future LDC requirements) do not exist.

The Following eligible international emissions units will be included in the legislation establishing the carbon price (but could be excluded or limited by future regulations):

- **Certified Emission Reductions (CERs)** from Clean Development Mechanism projects under the Kyoto Protocol, other than temporary CERs, long-term CERs, and CERs from nuclear projects, the destruction of trifluoro-methane, the destruction of nitrous oxide from adipic acid plants or from large scale-scale hydro-electric projects not consistent with criteria adopted by the EU (based on the World Commission on Dams guidelines);
- **Emission Reduction Units (ERUs)** from Joint Implementation projects under the Kyoto Protocol, other than ERUs from nuclear projects, the destruction of trifluoromethane, the destruction of nitrous oxide from adipic acid plants or from large scale-scale hydro-electric projects not consistent with criteria adopted by the EU (based on the World Commission on Dams guidelines);
- **Removal units (RMUs)** issued by a Kyoto Protocol country on the basis of land use, land-use change and forestry activities under Article 3.3 or 3.4 of the Kyoto Protocol; and
- Any other international units that the Government may allow by regulation

The Government may add to the types of international emissions units that are recognized for compliance under the carbon price mechanism, where:

- *the addition does not compromise the environmental integrity of the carbon price mechanism;*
- *the addition is consistent with the objective of the carbon price mechanism, including Australia's international objectives; and*
- *there has been consultation by the Climate Change Authority with stakeholders, analysis of the expected impact on the carbon unit price by an independent review, and notification to the market.⁴³*

Prior to the Carbon Pricing Mechanism, Australia already had policy movement with regard to the regulation and development of GHG offsets. The national Carbon Offset Standard Carbon Neutral Program, founded in 2010, is a government owned non-for profit which established guidelines for what standards are acceptable for private sector carbon neutral targets. It is not year exactly what role this program will have to play in the future.

The long-term level of international offsets that will be allowed will depend on both domestic and international policy developments and be part of the discussions under the regular review process of the scheme.

Australia is a strong proponent of REDD/REDD+ and has set up the "International Forest Carbon Initiative"⁴⁴, which is jointly administered by the DCCEE and AusAID and has a budget of \$273 million. The aim of the Initiative is to build capacity in developing countries, including collaborative Forest Carbon Partnerships with Indonesia and Papua New Guinea, and lobbying for a REDD+ financial mechanism under the UNFCCC, by addressing technical and policy hurdles.

In 2011, Australia then developed a domestic offsetting scheme through the government owned non-profit Australian CFI.⁴⁵ The initiative produces credits through storage or reduction of GHG in land use and is voluntary for farmers and landowners. The credits are eligible for compliance for the Australian ETS even before the 2015 flexible price period starts, will therefore have three years to establish itself before CERs are eligible in Australia, and will therefore affect Australian demand for CERs in this period.

43 Multi-Party Climate Change Committee Clean Energy Agreement. http://www.climatechange.gov.au/government/initiatives/mpccc/resources/~media/government/initiatives/mpccc/MPCCC_Clean-energy-agreement-20110710-PDF.pdf

44 <http://www.climatechange.gov.au/en/government/initiatives/international-forest-carbon-initiative.aspx>

45 More information can be found at <http://www.climatechange.gov.au/cfi>.

3.3.1 Additionality in the Carbon Farming Initiative

In order to determine additionally in the CFI, the Australian government has developed a “Positive List” system which builds on the selected standardized approved methodologies and establishes further criteria for a potential project. Projects must be developed according to a standardized process approved by the Ministry of Climate Change and Energy Efficiency and endorsed by the Domestic Offset Integrity Committee. Further details are specified by the “positive list”, must not be otherwise required by law in the jurisdiction, and may not have been previously counted or credited in another crediting system. Projects in compliance with the positive list are automatically considered additional with no project by project evaluation.

In the development of the positive list, financial or investment additionality is not considered, rather, the extent to which a proposed practice goes beyond “common practice”, evaluated according to a “Common Practice Test”. The test examines the practices of similar farmers operating in similar environments, with similar access to information, skills and technologies and makes an assessment as to how prevalent the activity is. The group may be as specific as “beef producers in the north of Australia” or as broadly defined as “beef producers”. The basic threshold for being uncommon is when less than 5% of the comparison group practices the activity. Information for the determination of the 5% threshold will come from the Agricultural Census, Agricultural Resources Management Surveys and other sources deemed credible. Starting in 2013, biennial surveys will be carried out on agricultural land management specifically in order to help with common practice determination in the CFI. In the event that there is not enough survey data or other statistical evidence to determine if an activity is above or below the 5% threshold, an activity can be considered uncommon (additional) if it is “dependent on a new technology (not including minor adjustments to existing technologies” or if there is “one or more significant impediments to adoption for all potential participants”.⁴⁶ Credits can therefore be considered eligible for the scheme even if they would fail a financial additionally test, but go beyond common practice. Examples given include composting for soil carbon and improved animal herd management.

If an activity becomes common practice as a result of being recognised as an approved methodology under the CFI, it may be removed from the eligibility list once it has reaches the “take off point” where the practice becomes widely adopted. Such activities may however remain on the positive list if the activity would otherwise not be feasible without its inclusion in the CFI.

To accompany the “positive list” the government has also developed a “negative list”, which sets out further criteria for potential projects that may otherwise be eligible and additional but may have other adverse effects on communities or the environment. Such negative adverse effects may include contributing to water stress in drought areas, negative effects on biodiversity, employment or the local community. Project categories can be added and removed from the positive list as circumstances change, for example if common practice changes, or other circumstances like drought or the boundaries of water stress regions change.⁴⁷

3.4 ANALYSIS OF ROLE OF CDM IN AUSTRALIA

As CERs will not be eligible as offset credits for Australian compliance buyers until 2015, there are a number of variables that will affect Australian demand for the CDM: the potential extent of offset credit supply through the CFI, other international decisions regarding offsets between now and 2015, and Australian recognition of other international offsets. One factor has already become clear is that Australia intends to introduce a “surrender charge” for international offset units, which will bring the minimum price paid for an offset into line with the price floor established in the Australian ETS.⁴⁸ In addition, the Australian business community calls for the development of bilateral offset credits between Australia and other countries. Further, changes in the political balance in Australia may determine the future of the Australian Carbon Pricing Mechanism as the opposition conservative L/NP party has called for a repeal of the ETS legislation.

46 Australia 2011.

47 More information on positive and negative lists can be found in the Consultation Paper : <http://www.climatechange.gov.au/government/submissions/~ /media/publications/carbon-farming-initiative/cfi-pos-neg-consultation-paper.pdf>

48 Australia 2011a.

The Australian Treasury estimated in 2011 that the CFI would be able to provide 7.1 to 7 Million tCO₂ per year from 2012 through at least 2015.⁴⁹

Given the perceived uncertainty about the future of CDM, investors and some within the Australian business community have called for the development of bilateral offset projects to be carried out with Asian partners.⁵⁰ The government has not yet discussed such eventualities. But they have arrived on the think tank policy debate through such institutions as the Climate Institute.⁵¹

Foreign offsets are seen (e.g. by Treasury) as an important factor keeping downward pressure on the cost of Australian emissions reduction. The Treasury estimates that by 2020, demand for foreign offsets could grow to 97 million tCO₂ per year.⁵² Preference for acceptance and engagement with the international carbon market can also be seen from early on, including in such discussion papers as “Possible Design for a National Greenhouse Gas Emissions Trading Scheme” published by the State and Territory Governments of Australia in August 2006. In it, not only were Kyoto units foreseen for inclusion as offsets, but also that “as a general principle, the rules governing the creation of offsets under the NETS should be consistent with emerging approaches being developed for the Joint Implementation (JI) mechanism under the Kyoto Protocol. It was thought that such an approach would add credibility to the offsets and help an offset scheme benefit from “years of international experience and learning”.⁵³ In its Green Paper in July 2008, the Australian government foresaw acceptance of CERs as offset credits in the emissions trading scheme with the exception of temporary CERs and long-term CERs from forestry-based projects. The White Paper which followed the Green Paper specifically stated:

“The Government considers the CDM to be an important transitional mechanism, and believes that CERs should be recognized for compliance purposes in the Scheme...The international community is considering a range of proposals to reform the CDM in an effort to ensure that it remains an effective mechanism in any future agreement. Rather than limit the use of the CDM in the initial years of the Scheme, the Government will continue to work with the international community on these proposals.”⁵⁴

Though this specific manifestation of the position towards CERs did not end up in the final law, it is indicative of the general position of the Australian government. The exclusion of tCERs and ICERs can also be traced back through the government’s green and white papers for emissions trading. However, the exclusion of credits from the destruction of trifluoromethane, the destruction of nitrous oxide from adipic acid plants, and from large-scale hydroelectric projects were a stipulation that emerged in the Multi-Party Climate Change Committee Clean Energy Agreement⁵⁵. It is not clear from the available meeting minutes when the committee decided to exclude such project credits, but the criteria for hydro-electric projects specifically refers to “criteria adopted by the EU (based on the World Commission on Dams’ guidelines)”. Further, under Agenda Item 4 for the fourth meeting of the committee noted and released a paper entitled “EU Limits on International Linking” which explores EU reasoning and considers its implications for future linking with Australia.⁵⁶

Once the Australian scheme enters the flexible price period (from 2015 onward), a price floor of AU\$15 (rising by 4% annually) will be introduced. The CDM reform is important in that sense that, at their current levels, prices of international credits are below this price floor. Ways in which to implement the price floor when international offsets are allowed is a current point of debate in Australia.

49 http://archive.treasury.gov.au/carbonpricemodelling/content/consultants_reports/DCCEE_Indicative_estimates_of_abatement_from_the_Carbon_Farming_Initiative.pdf

50 PointCarbon. 2011.

51 Mazouz 2012.

52 <http://archive.treasury.gov.au/carbonpricemodelling/content/default.asp>

53 National Emissions Trading Taskforce 2006.

54 Australia 2008.

55 Multi-Party Climate Change Committee 2011.

56 Multi-Party Climate Change Committee 2011a.

In particular, the mechanism to top-up the difference between CER prices and the Australian price floor is under discussion (especially with regard to which CER prices should be used when determining the surcharge: purchase price, price at time of surrender, etc.).⁵⁷

Australia’s submissions under the UNFCCC that have so far been reviewed do not go into details on CDM reform. Instead, they mostly focus on developing new market mechanisms on the basis of NAMAs or sectoral targets. The only specific point that is raised on the CDM is that a broader range of LULUCF activities should be included in the CDM based on modalities and procedures to be developed by the CMP (Australia 2009: 12), which reflects the kinds of projects that Australia has elected to include in its Carbon Farming Initiative. In its consultation paper on positive and negative lists for the Carbon Farming Initiative, the Australian government does however give some implicit criticism of CDM’s approach to project by project additionality evaluation. The document specifically states that the CFI will take “a more efficient and transparent ‘Positive List’ approach to additionality”. It goes on to say that “this means fewer assessments and less subjectivity because all projects of the same type are treated equally. Project-by-project assessment is criticized as being “time consuming”, “expensive to administer”, and having “long delays in approving projects”, and is contrasted with the Australian approach as being “more streamlined and cost effective”. The “common practice” evaluation method for additionality is also upheld for being able to approve projects, such as composting for soil carbon and improved herd management, that offset schemes which rely on financial or investment additionality would exclude.⁵⁸

The conservative L/NP party has vowed to repeal ETS legislation if they come back to power. Elections are scheduled to be held in late 2013. However, even if they were to win a majority in the lower house in 2013, it is likely the balance of power in the senate will not change hands until at least 2015, by which time the ETS will have already been operating for 3 years.

3.5 CONTEMPORARY CDM AND THE AUSTRALIAN APPROACH COMPARED

	CDM	CFI
Legal Character (international/legal institution, voluntary, etc.)	International Law	Australian Domestic Law
Quantitative Limitations (differentiation depending on product type)	Subject to supplementarity rules on international level, Various depending on jurisdiction for compliance in various ETS.	Standardized baselines based on CDM/JI methodologies in farming, land use and agriculture plus emissions from feral wild-life management
Qualitative restrictions (certain kinds of project types) Potential reasons for restrictions: sustainability criteria, environmental integrity, etc.)	Nuclear energy; Various restrictions depending on jurisdiction for compliance in various ETS.	Standardized methodologies approved by Minister of Climate Change and Energy Efficiency, endorsed after review from the Domestic Offsets Integrity Committee
Role of additionality	Determined by CDM EB on a project by project basis	Covered by approved methodology, on the “positive list”, not required by law, abatement not counted in other offset development program

57 Department of Climate Change and Energy Efficiency 2012.

58 Australia 2011b.

59 The audit framework, including the accreditation of auditors was established under the National Greenhouse and Energy Reporting Act of 2007.

	CDM	CFI
Monitoring Reporting and Verification Requirements	Monitoring according to methodologies approved by CDM EB, Verification carried out by DOE	<ul style="list-style-type: none"> Along international standards that will “help Australia reach its Kyoto commitments” Reports must be accompanied by an audit report prepared by a registered greenhouse and energy auditor.⁵⁹

4 CALIFORNIA/WCI

The section on California contains significant contributions from partner expert Jan Mazurek, senior fellow with ICF International in Sacramento, California.

4.1 OVERVIEW OF CALIFORNIA CLIMATE POLICY

The main single piece of legislation that determines Californian climate policy is Assembly Bill 32, the Global Warming Solutions Act. The law directs the California Air Resources Board (ARB) to reduce California emissions to 1990 levels by 2020. 1990 emission levels were 422.1 MtCO₂e.⁶⁰ California further has a longer term target of reducing emissions 80% from 1990 levels by 2050 (84.42 MtCO₂e). In 2007, California had emissions of 473.6 MtCO₂e. California’s projected business as usual (BAU) emissions (if no mitigation measures are implemented) for 2020 are 506.8 MtCO₂e.⁶¹ The details of the reduction efforts are laid out in ARB’s Scoping Plan⁶² which covers about 85% of Californian emissions. One major component of the scoping plan is the California Air Resources Board California Cap-and-Trade Program, Resolution 11-32,⁶³ other regulatory instruments are also used, for in-stance command and control for emissions sources such as methane from landfills. The regulation was unanimously approved by the ARB in October 2011. The cap-and-trade regulation places a fixed, declining cap on the amount of CO₂e that can be emitted by 350 of the state’s largest industrial emitters and power plants referred to as ‘covered entities’.

Gases covered include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro-fluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). The cap will start at 162.8 million allowances in 2013 (equal to expected BAU that year). From 2013-2014, the cap will be reduced approximately 2%. The cap in 2015 will increase to take into account of the expanding scope of the program. From 2015 to 2017, the cap is to be reduced by 3% per year.

The emissions trading system being implemented, with a first compliance period of 2013-2014, will cover entities emitting 25,000 tons of CO₂e or more in the cement, cogeneration, electricity (including imported electricity), glass, hydrogen generation, iron and steel, lime, nitric acid production, petroleum and natural gas systems, petroleum refining, pulp and paper, stationary combustion sectors. In the second and third compliance periods, (2013-2017, 2018-2020) the cap and trade system will cover all electricity importers from specified sources, even under 25,000 tons CO₂e as well as suppliers of liquefied petroleum gas, suppliers of natural gas and industry, and suppliers of Reformulated Blendstock for Oxygenate Blending (gasoline) and distillate fuel oil greater than or equal to 25,000 tons CO₂e a year.

60 <http://cait.wri.org/cait-us.php?page=yearly&mode=view&sort=cou-desc&pHints=shut&url=form&year=1990§or=state&co2=1&ch4=1&n2o=1&fgas=1> (10 February 2012)

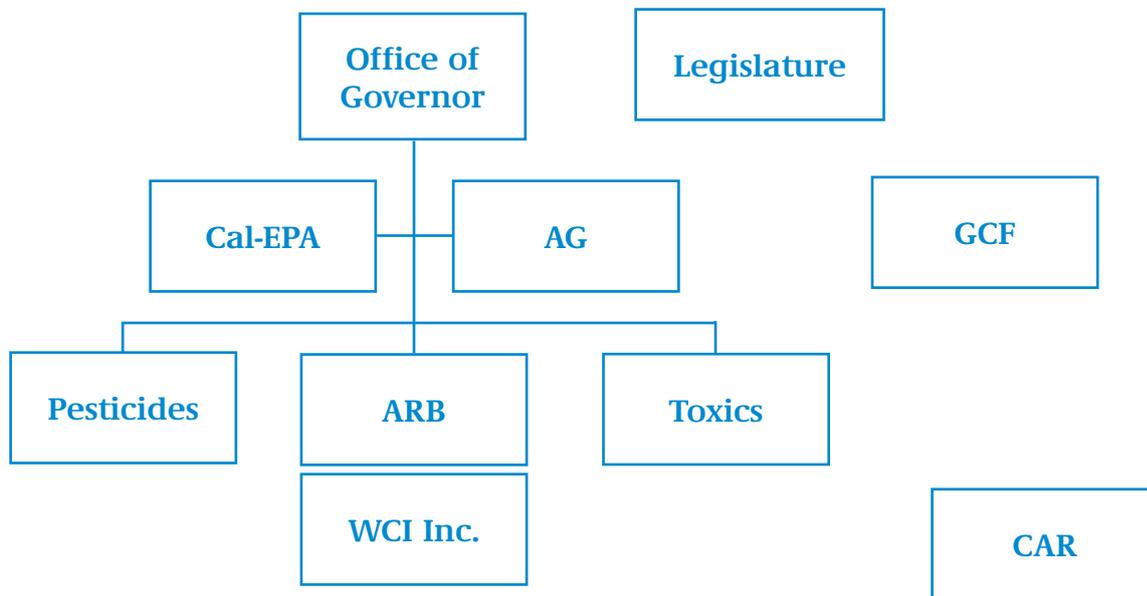
61 http://www.arb.ca.gov/cc/inventory/data/tables/2020_qhg_emissions_forecast_2010-10-28.pdf

62 <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

63 <http://www.arb.ca.gov/regact/2010/capandtrade10/res11-32.pdf> (20 October 2011)

4.2 EXAMINATION OF THE CALIFORNIAN CLIMATE POLICY MAKING PROCESS

The California Environmental Protection Agency (Cal EPA) is the state agency charged with developing, implementing and enforcing the state’s environmental protection laws that ensure clean air, clean water, clean soil, safe pesticides and waste recycling and reduction. Matt Rodriquez was appointed as Cal EPA Secretary in 2011 by Governor Brown. Cal EPA serves as an umbrella agency for various units including the Air Resources Board (ARB), the Department of Pesticide Regulation, the Department of Toxic Substances Control, the Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board.



The California Air Resources Board (CARB or ARB) is one of five entities under the umbrella of Cal EPA. Although the ARB is technically under Cal EPA in the hierarchy, ARB’s Chair-perman, Mary Nichols, is appointed directly by the Governor and the Board exercises a great deal of autonomy and reports directly to the governor and legislature. AB 32 directed the ARB (not the Cal EPA) to develop a scoping plan that led to the development of the California emissions trading system. Within the ARB, the Climate Change Markets Branch is responsible for cap and trade activities, including offset provisions. It is this office, rather than any other unit in any other agency that bears primary responsibility for regulation and approval of offset protocols. The branch has worked closely with the California Attorney General’s office which was led by Edmund G. Brown before he was elected governor.

Mary D. Nichols was reappointed to Chair of the ARB by Governor Brown again in 2011. She had previously served as Chair of the ARB when Governor Brown was governor in the 1970’s, and she kept on as Chair during the Schwarzenegger administration.

The California Climate Action Registry (CCAR) was a non-profit entity created in 2001 by the State of California to help develop voluntary greenhouse reductions and offset protocols. When the Global Warming Solutions Act was passed in 2006, the state “sunsetting” its support for the institution which led CCAR to create a for-profit entity, the Climate Action Reserve (CAR). CAR accordingly does not enjoy an official mandate but continues to develop voluntary offset protocols with some influence. The current four ARB approved offset protocols all started as CAR voluntary offset protocols, which were then subjected to increased scrutiny for approval in the compliance market and were officially approved in the cap-and-trade legislation in 2011. Although they cooperate informally, ARB and CAR have no official relationship. ARB is currently reviewing several other CAR developed offset protocols including emissions reductions in rice cultivation through rice straw methane.⁶⁴

64 ARB 2011b

4.2.1 Other Stakeholders

In practice, many stakeholder groups work to help shape ARB's compliance offsets. They include not only CAR on the domestic front and GCF on REDD (see section 4.4 on Offset Policies), but also leading US environmental organizations such as the Environmental Defense Fund (EDF), key industry stakeholders such as Pacific Gas & Electric (PG&E), and leading academics from marquee California universities such as Stanford University. Crucially, the California offices of the leading national environmental groups – including EDF, the Natural Resources Defense Council (NRDC), and the Union of Concerned Scientists – are relatively autonomous and do not always support the positions of their national counterparts, particularly in the case of offsets. UCS in California has been highly critical of offsets in general. Also very critical of offsets in general – and of CDM in particular – is the California office of International Rivers, which first got involved in the policy area through protesting large scale hydropower projects.

Although market-oriented environmental organizations such as EDF generally support the use of offsets, such groups were more cautious about CDM projects. During California's ETS formative stages, in 2008, EDF was already calling for CDM reform, citing such factors as "slippery" additionality factors, leakage, and other limitations of project-based approaches, such as constrained environmental and economic impact, as compared to broader, sectoral efforts.⁶⁵

4.2.2 Judicial

In comparison to many other jurisdictions, the American justice system has long proved to be a particularly important institution in interpreting environmental laws and practice. Legal decisions have benefitted both environmental NGOs as well as industry seeking to overturn or weaken regulation. California's emissions trading system has already been challenged, and survived, charges brought against it in court several times by both industry and environmental groups for various reasons. Another recent lawsuit⁶⁶, filed on 28 March 2012 by two environmental organizations, Citizen's Climate Lobby and Our Children's Earth Foundation, do not aim at the cap and trade system itself, but rather at the system's provisions allowing installations covered by the system to use offsets at all for compliance. The suit was brought on the grounds that though AB 32 requires that reductions are truly in addition to any GHG reduction that would occur anyway, the established protocols do not assure additionality, attacking specifically the ARB's "Performance Standard" approach. For example, on the theoretical basis that forestry management may improve without funding generated through offset sales. Though the suit will not stop the system itself from moving forward, it could have major effects on the costs of compliance and therefore the ability of the California system to link with others in North America or internationally.

4.3 THE WESTERN CLIMATE INITIATIVE

AB 32 directed the ARB to work with others, including other states and nations "to facilitate the development of integrated and cost-effective regional, national and international green-house gas reduction programs." The ARB under the Brown administration has focused this mandate primarily on advancing the Western Climate Initiative (WCI).⁶⁷

Shortly after AB 32 was passed in California, the WCI was formed by governors from Arizona, California, New Mexico, Oregon, and Washington in 2007. The governors formed WCI to develop a common GHG reduction target, collectively track and manage emissions, and develop a market-based instrument to reach the target. At one point, it had grown to count most of the western United States as its members in addition to several Canadian provinces. In 2012 the only members that remain are California, Quebec, British Columbia, and Ontario. While California and Quebec have made progress in their emissions trading implementation efforts, British Columbia, though a member of the partnership's newly founded administrative institution, the Western Climate Initiative Inc., will likely continue with its carbon tax as its main climate change mitigation strategy and not implement an emissions trading system in the near future.

⁶⁵ EDF 2008.

⁶⁶ Citizens Climate Lobby and Our Children's Future Earth Foundation v. CARB, filed in San Francisco Superior Court (No. CGC-12-5195544).

⁶⁷ Nichols 2012.

Ontario, though still officially a WCI member, interestingly does not have a seat on the WCI Inc. board of directors, and the provincial government has made no movement towards an emissions trading system. Each jurisdiction technically develops its own emissions trading scheme and will then go through the process of linking it with the others. No single ETS is dependent on the development of another.

Though independent jurisdictions, since Quebec's announcement that it will implement an ETS in December 2011, California and Quebec have made great efforts to coordinate their provisions on many issues from auctions to offsets. California is the larger of the two partners, but because of their decision-making procedures within WCI, their recent agreement to recognize each other's offset credits⁶⁸, and their progress towards linking, the two jurisdictions must be considered as a one unit with regard to their demand for GHG offset credits.

ARB expects to develop additional compliance protocols in partnership with Western Climate Initiative Incorporated (WCI Inc.). Created in November 2011, WCI Inc. will administer some aspects of the trading system, including the development of a compliance system that tracks allowances and offsets certificates, and the administration of auctions. The WCI Inc. named Anita M Burke as its first Executive Director in March 2012. Thus, the WCI partners have designed WCI Inc. to be analogous to RGGI Inc., which operates the Regional Greenhouse Gas Initiative in the Northeastern United States. By June 2012, ARB expects to bring amendments to its board that would allow California to link California's cap-and-trade system directly with that of Quebec. To make the systems compatible and thereby promote their direct linkage, the Quebec cap-and-trade regulation, when complete, will contain an allowance reserve and will harmonize reserve tier prices (WCI 2012). As part of this regulation, Quebec has developed and is continuing to develop offset regulations and protocols. ARB does not know what protocols Quebec will establish, with regard to offsets or otherwise, though these will have an effect on the linking process negotiations.

To promote greater uniformity between California's compliance protocols and those developed by WCI Inc., partners such as Quebec and others will follow a new WCI common offset protocol review and approval process.⁶⁹ WCI partners have been developing the common offset protocol approval process for roughly one year. WCI Inc., in February 2012 released its final offset review and recommendations about how WCI partners will go through their protocol review process.⁷⁰

ARB expects that the offsets Canadian jurisdictions create using the 2012 WCI common protocol process and issued by a jurisdiction whose regulations are directly linked to California's will be fully fungible across the WCI and CA systems.⁷¹ Although it remains unclear exactly what protocols Quebec will bring forward, ARB reports that WCI partners that directly link regulations will need to agree to accept each other's protocols. In other words, if CA elects to develop a protocol to reduce methane emissions from rice cultivation, Quebec as a linked partner will also need to accept a rice protocol. ARB reports that WCI Inc. will soon release a list of common WCI protocols, for acceptance across WCI jurisdictions including California and Quebec.⁷²

4.4 CALIFORNIAN OFFSET POLICIES

Regulations require ARB to establish requirements and procedures to issue offset credits according to offset protocols adopted by the board and further establish a mechanism to include international offset programs from an entire sector within a region⁷³ Despite the expectation that the California ETS will be over allocated in the first period, offsets are expected to be central to the cost-effectiveness of California's forthcoming cap-and-trade system, which is set to commence in 2013.⁷⁴ ARB economic modelling in 2010 found that if the supply of offsets were to be halved, emissions trading allowances prices under California's cap would double. Accordingly, a robust supply of compliance-grade offsets is essential to contain the cost of California's system.

68 WCI 2012.

69 WCI 2012b.

70 WCI 2012b.

71 ARB 2012.

72 ARB 2012.

73 ARB 2010.

74 ARB 2010c.

WCI program design had originally recommended that no more than 49% of each partner's total emission reduction obligation come from offsets or other trading system allowances from 2012 to 2020.⁷⁵ This corresponded to an installation limit of 4% of reported emissions, but was later increased to 8% in California. This mirrors supplementarity rules for CDM/JI offsets on the international level.

WCI requires offsets to result in GHG reduction, removal or avoidance that is real, surplus/ additional, verifiable and permanent. The Californian regulation sub-article 13 stipulates "real, additional, quantifiable, permanent, verifiable, and enforceable" with the possibility to retroactively cancel offset credits if a project has been found to not produce the expected offsets or if the reduced emissions are then released into the atmosphere within the next 100 years.⁷⁶ Offset purchasers would then be liable for buying additional compliance instruments if credits they have bought are later invalidated. Further, according to WCI rules, offsets can be from the United States, Canada, and Mexico but not from other developed countries. At present, there are only four offset "protocols" that are approved to supply the California system with offset credits. These protocols only apply to projects in the United States meaning there is currently no option for foreign offset credit project developers to provide credits to the California system.

Four offset protocols have been approved for the Californian system: Livestock projects (methane), Ozone Depleting Substances Projects, Urban Forest Projects, US forest projects. Additionally, to increase the number of trading partners in the system as well as offset supply, ARB in 2012 intends to amend the cap and trade regulation to allow California to link with the allowance and offset market in Quebec⁷⁷. Linking is permitted by a provision in the 2011 cap-and-trade regulation that allows ARB to directly connect California's cap-and-trade system with other jurisdictions such as those that are in the WCI.

After extensive review of existing offset protocols, ARB staff plans to investigate two new offset categories for possible consideration by the Board in winter 2013.⁷⁸ These include coal mine methane and a protocol to reduce methane by the removal of rice straw in flooded fields. ARB has not yet prepared reduction estimates for nitrogen or rice offsets.⁷⁹

There are a number of rules under the broader WCI framework that allow for provisions that have not been approved by California. As linking between California and Quebec progresses, these rules will be subject to intense negotiation between the two jurisdictions to ensure that offsets disallowed in one jurisdiction do not enter through the backdoor of another linked jurisdiction.

4.4.1 Additionality in the California Offset Protocols

The regulation establishing the California cap-and-trade program outlines provisions to govern offsets in Subsection 13. Specifically with regard to additionality, these standards are set out as the following:

- A. The activities that result in GHG reductions and GHG removal enhancements are not required by law, regulation, or any legally binding mandate applicable in the offset project's jurisdiction, and would not otherwise occur in a conservative business-as-usual scenario;
- B. The Offset Project Commencement date occurs after December 31, 2006, unless otherwise specified in the applicable Compliance Offset protocol, except as provided in section 95973⁸⁰;
- C. The GHG reductions and GHG removal enhancements resulting from the offset project exceed the project baseline calculated by the Compliance Offset Protocol⁸¹

Determining what is required by law is to be evaluated according to a legal test developed for each protocol, with specific criteria outlined in the protocol, eliminating the need or even a mechanism for a project by project approval process carried out by the ARB to then issue credits.

75 <http://www.westernclimateinitiative.org/component/remository/general/design-recommendations/Design-Recommendations-Section-1/>

76 California Code 2010.

77 ARB 2012.

78 ARB 2011b.

79 ARB 2011b.

80 A provision rewarding 'early action' either established by Executive Order by the Executive Officer, or which meets a number of other provisions outlined in Subsection 13.

81 California Code 2010.

4.4.2 REDD and sectoral credits

Also under Governor Schwarzenegger's administration, a Memorandum of Understanding was signed with Chiapas, Mexico, and Acre, Brazil, to explore REDD offset opportunities. This was part of a wider framework of the "Governor's Climate and Forest Task Force" (GCF), which brought 16 states and provinces from the United States, Brazil, Indonesia, Mexico, Nigeria, and Peru together to work on principles and regulatory architectures to support subnational REDD+ programs and their integration into emerging GHG compliance regimes. Under Governor Brown's administration, this has taken on less of a priority and its future timeline is unclear. An indication of the lesser priority of progress on in this area for offsets in the California system, Governor Brown, though he took office in January 2011, has still not (as of April 2012) appointed a new Cal EPA representative to the GCF. Former Representative, Anthony Eggert, has moved on to become the Executive Director of the University of California at Davis Environment Policy Center.

4.4.3 California Climate Action Reserve

Offset policy for California ETS based on "performance standard" methodology, draws on Climate Action Reserve (CAR), a public non-profit organization developed originally for voluntary action. ARB strengthened CAR's voluntary protocols for a compliance market through the use of a four-step process: First, ARB subjects protocols developed by voluntary organizations such as CAR to a rigorous technical analysis to ensure they are real, additional, and verifiable.⁸² Second, ARB seeks public input on the potential value and environmental impacts of the proposed compliance protocol to an environmental review to minimize unanticipated ancillary environmental effects (e.g. does the forestry protocol encourage clear-cutting?). Finally, ARB takes the protocol to its Board for review and regulatory approval.

4.5 ANALYSIS OF THE POTENTIAL ROLE OF CDM IN CALIFORNIA

The Carbon Market Institute expects the California ETS to be worth more than \$50 billion per year, even without the Quebec ETS link, the trading system will hence be the second largest after the EU ETS. Its demand for offsets will be correspondingly large, exactly how large depends on a number of factors: limits imposed on compliance entities in each WCI jurisdiction, potential supply of offsets within the United States and Canada, and tiers of offset in the case that offsets from some methodologies are later disqualified ex-post in the event that they did not in fact sequester the estimated amount of carbon. This is more of an issue with forestry and land use project type offsets, which account for a significant amount of expected potential supply.

Offsets can be used for a maximum of 8% of an entity's compliance and environmental groups are seeking to prohibit Investor Owned Utilities (IOUs) from procuring offsets. Quebec is still in the process of deciding on an offset limit for compliance entities. Provisions for international offsets are still being considered, but there is no timeline to decide on the admittance of international offsets into the system.

Former Governor Schwarzenegger strongly encouraged either direct linkage to the European Union Emissions Trading System (EU-ETS) or indirect linkage through the recognition of credits from the CDM. This desire found its way into the WCI rulemaking, which allows, but does not require WCI jurisdictions to accept offset credits from developing countries through CDM.⁸³ The Administration of Governor Jerry Brown (3 January 2011 – present) however has been more conservative with its approach to offsets and the final ARB cap regulation which was published under in December 2011 and makes no specific reference to linkage to the UN CDM program. Even during the Schwarzenegger Administration, the ARB had intended to take a "wait and see" policy with regards to CDM reforms⁸⁴ but experts see the step to be unlikely. Dr. Mazurek cites several major reasons: First, at least in the early days of the program, offset supply is expected to be sufficient to meet demand without CDM.

⁸² All emission reductions under the market-based program must be real, permanent, quantifiable, verifiable, enforceable, and additional. California Health & Safety Code § 385562(d)(1)-(2).

⁸³ ARB 2008 (pg 249).

⁸⁴ ARB 2009, 10.

This is somewhat disputed by some covered entities and other stakeholders in the offsets community who forecast shortages due in part to unique offset features in the ARB's regulation that make offset buyers liable for future project failures, such as reversal.

Second, if California seeks to bring international offsets into its cap through the use of indirect measures such as memoranda of understanding (MoU), ARB's policy favors sectoral approaches, where emission reductions count against an entire country sector baseline over CDM's current project-based focus, where reductions count against each project's baseline.⁸⁵ Sectoral approaches are generally favoured to project approaches to address concerns about baseline accuracy and intra-sectoral leakage.

The proposed regulation released on 28 October 2010 notes that:

“While the CDM has created a vibrant market for international offsets, its project-based approach has not fostered significant policy changes in developing countries. Further, some questions have been raised about the sustainability and additionality of certain projects and project types.” (CARB 2010: D-510)

The document further notes that the international community is therefore discussing the development of sector-based crediting mechanisms to replace or reform the CDM. The document considers that sectoral approaches would allow for scaling up emission reductions, reduce concerns about competitiveness and would have greater environmental integrity.

“By focusing at the sectoral-level, rather than on individual projects, these mechanisms also will better ensure additionality and reduce emissions leakage between facilities in a way that the CDM cannot... Given these advantages, California would like to utilize a sector-based crediting mechanism for international offsets, and move beyond project-based systems like the CDM.” (CARB 2010: D-510)

The document further notes that the introduction of sectoral mechanisms may take substantial time and therefore “early supply” from other sources may be needed. The CARB was therefore considering allowing the use of limited amounts of CERs (or other project-based credits from other systems) for a limited period of time. The CARB was also considering other limitations, for example regarding project types or geographic areas, “to ensure that these offsets meet additionality requirements and provide sustainable development benefits. For example, offset projects in least developed countries, which are likely to be both additional and sustainability enhancing, should be encouraged.” (CARB 2010: D-511)

In the end, however, the CARB decided not to allow any use of the CDM. The “Final Statement of Reasons”, which lists all public comments that had been submitted on the draft regulation as well as the CARB's responses, indicates a substantial amount of scepticism towards the CDM. In responding to one comment about the risks of offsetting, “ARB recognizes that some CDM credits created during this period may have been non-additional. ARB does not currently plan to accept CDM credits until these issues in that system are resolved.” (CARB 2011: 221f)

The statement of reasons also notes that California's offset rules have been designed explicitly to avoid the problems encountered under the CDM. “Our offsets program is designed very differently than the CDM by relying on standardized assessments of additionality established by ARB through a public process and not relying on project-specific assessments done by the project developers themselves.” (CARB 2011: 824)

In further contrast to the CDM, the CARB may also invalidate an offset if it is later found to not meet the requirements of the regulation, or environmental, and health and safety laws. Moreover, if at any point a stakeholder is concerned about a particular project, the stakeholder may notify the CARB (CARB 2011: 1712).

Finally, interest group politics in California are very active in California in a distinct fashion that compares with the US national level, the EU, or the international level. Some California environmental groups are very suspicious of offsets in general and have influence on policy decisions.

85 Sahota 2012.

To illustrate, consider that a 2011 lawsuit filed against ARB was motivated in large part by fears that covered entities would use offset credits instead of direct emissions reductions and thereby fail to make improvements in local air pollution.⁸⁶ Such suspicions tend to lead groups to exert influence against adoption of international offsets and especially CDM in its present-project based form.

4.6 CONTEMPORARY CDM AND CALIFORNIAN OFFSET PROTOCOLS COMPARED

	CDM	Offset Protocols
Legal Character (international/legal institution, voluntary, etc.)	International Law	California Regulation
Quantitative Limitations (differentiation depending on product type)	Subject to complementarity rules on international level, Various depending on jurisdiction for compliance in various ETS.	Maximum number of offsets that can be used for a covered entities compliance is 8%
Qualitative restrictions (certain kinds of project types) Potential reasons for restrictions: sustainability criteria, environmental integrity, etc.)	Exclusion of nuclear energy; Various restrictions depending on jurisdiction for compliance in various ETS.	Protocols evaluated by the California Air Resources Board through project types, currently: <ul style="list-style-type: none"> ▪ ozone depleting substances, ▪ livestock, ▪ urban forest projects, and ▪ U.S. forest projects
Role of additionality	Evaluated by CDM EB on an individual project basis, no standardized baseline	Methodology evaluated by the California Air Resources Board, to form standardized “performance standard” <ul style="list-style-type: none"> ▪ not otherwise required by law; ▪ occurs after December 31, 2006; ▪ exceeds project baseline calculated by the relevant protocol
Monitoring, Reporting, Verification Requirements	Monitoring according to methodologies approved by the CDM EB, Verification carried out by DOE	Explicit monitoring and reporting guidelines outlined in each individual protocol. Verification carried out by ARB-accredited verification body

5 SOUTH KOREA

The section on South Korea contains significant contributions from partner expert Yong Gun Kim, Director of the Climate Economics Division of the Korea Environment Institute in Seoul, South Korea

5.1 DEVELOPMENT BACKGROUND: A NON-ANNEX 1 COUNTRY IN THE OECD

Emerging from Japanese colonization after World War II and the subsequent division of North and South in 1948, the Republic of Korea (South) started on a rapid path of industrialization. In 1980, South Korea’s per capita GDP (by purchasing power parity) was a fourth of that of Japan’s, but the Korean economy grew rapidly, so much so that the country was admitted to the OECD in 1996. In 2001, Korea had a higher per capita GDP than the EU average and the IMF now expects it to overtake Japan in the next five years. Greenhouse gas emissions have followed the development trajectory. In 1990, South Korea had 246 million metric tonnes of CO₂e; by 2008 emissions had grown 114.6 per cent to 528.1 million metric tonnes of CO₂e, higher than the United Kingdom.

⁸⁶ *Association of Irrigated Residents, et al v. California Air Resources Board, et al*, Superior Court of California, San Francisco County, no CPF-09-509562 (order dated 03/18/11) (unpublished).

Current estimates from the International Energy Agency for 2009 show further growth of up to 640 million mtCO₂e making South Korea the fastest growing emitter among industrialized democracies. More recently, climate and the environment have become a larger issue on the Korean political agenda and in August 2008, President Lee Myung-bak announced a new economic national development strategy based on Low-Carbon Green Growth.

5.2 SOUTH KOREAN CLIMATE POLICY

South Korea ratified the UN Framework Convention on Climate Change in December 1993, and though as a non-Annex 1 country, joined the Kyoto Protocol in November 2002.

South Korea has pledged to reduce emissions 30% from a Business as Usual (BAU) projection by 2020. Korea estimates its baseline emissions at 813 million tonnes of CO₂-eq. in 2020, so a total cut of 244 million tonnes of CO₂-eq. will be necessary to reach the 30% target.

The Presidential Committee on Green Growth (PCGG) was established in February 2009 to help develop and coordinate policy among various ministries. Members include 14 ministers and 36 other members appointed from the private sector. The committee is co-chaired by the prime minister and an appointed chairman. It is assumed that environmental regulations such as the details to be filled in to the Korean ETS will be debated and coordinated through the PCGG.

Two Korean ministries have large roles in climate policy, the Ministry of Knowledge Economy (MKE) and the Ministry of the Environment (MOE (K)). The main government agency directly responsible for implementing climate change policy is the Korea Energy Management Corporation (KEMCO). The Korea Emission Reduction Registry Center (KERRC) was established in July 2005 to help monitor progress towards climate, energy efficiency, and renewable energy targets. The Korea Environment Institute (KEI) is a research institute primarily funded by the Prime Ministerial Office that has played an important role in advising on government climate policy including the reduction target from BAU to 2020.

The Global Green Growth Institute was founded in 2010 as a public-private, non-profit institution working to support sustainable growth.

In October 2011, Korea established a Target Management System (TMS), which set emission reduction targets for its 458 largest polluters which took effect in 2012. The lead ministry for the TMS is the MOE (K), though the MKE is also heavily involved, along with other ministries according to the sector of the economy implicated. The threshold to have a target was 25,000 tonnes of CO₂ a year and many aspects of the TMS have been adopted into the outline for Korea's future ETS. It is still unclear if the MOE or MKE will be the lead ministry responsible for the Korean⁸⁷ ETS.

5.3 EMISSIONS TRADING IN SOUTH KOREA

Legislation for a cap-and-trade scheme to be introduced by 2015 was passed on May 2, 2012 with a 148 supporting the legislation, 0 opposing, and 3 abstaining, though the Parliament has 300 members, many were not present for the vote. The 98 per cent majority voting for the bill consisted of both ruling party and the opposition. A draft proposal for an ETS was drawn up by the PCGG, the Prime Minister's office announced notice on the proposal on 17 November 2010. Having completed ministerial review and after approval by the cabinet in April 2011, the draft bill was sent to the National Assembly. Just before the vote on the cap-and-trade bill, the future linking of the Korean ETS was already a matter of discussion during high level meetings between Australian Minister for Climate Change and Energy Efficiency, Greg Combet, and Korea's Environment Minister Yoo Young Sok in April 2012.

Facilities across all sectors emitting over 25,000 tons of CO₂e, of which there are over 450, will be covered by the scheme. Together, these account for ca. 60% of Korea's total greenhouse gas emissions of about 600 million tonnes per year. Companies that need to comply with the ETS will be allowed to trade from the beginning, while other intermediaries are to be given access to the market gradually, with rules to be established by presidential decree. The scheme will be divided into phases with the first to be from 2015-2017, the second from 2018 – 2020, and the third from 2021-2026.

⁸⁷ O'Donnell 2012.

Demand for offsets from the Korean ETS is unclear, primarily because of the number of details still to be released. PointCarbon estimates the overall goal of a 30% reduction from the business as usual case by 2020 to translate to a reduction goal of 4% from 2005 by 2020 or cap of approximately 450 Mt in 2015.⁸⁸ Free allocation provisions for industries, especially in the first phase of the ETS, are expected to cover 95% of allowances. Exact allocation details for the first and future trading periods will be decided on by an Allocation Committee, which will develop a National Allowances Allocation Plan. The Committee will be chaired by the Ministry of Finance. There is however already an offset reserve registry foreseen as are the admittance of foreign credits, though rules and timeline for these issues and many other details of the ETS are not currently clear and are to be determined later by presidential decree, scheduled to be made in mid-November 2012.

The Korean government is currently going through a consultation process with regard to the detailed rules and regulations concerning the future ETS. The process is being led by the PCGG, with input from KEI. The next Korean presidential elections will be held shortly after the issuance of the presidential decree on 19 December. However, no radical change of political positioning with regard to emissions trading is expected: The frontrunner is expected to be Park Geun-hye of the Grand National Party (renamed from the New Frontier Party in February 2012), who was defeated by the current President Lee Myung-bak in a tight primary battle in run up to the last election. They both are from the same political party and, in addition, legislative session is continued.

5.4 SOUTH KOREAN OFFSET POLICY

Korea has a developed voluntary offset scheme known as the Korea Verified Emissions Reduction Program (K-VER). The scheme is run by the Korean Ministry of Knowledge Economy (MKE) and the Korea Energy Management Corporation (KEMCO), both government agencies. Government started buying credits in 2007, now amounting to 7.4 MtCO₂e. The scheme was originally established in order to incentivize voluntary domestic reductions, not to meet a GHG mitigation target.⁸⁹ ISO series 14064 and 14065, and CDM methodologies are used for the scheme in the domestic market. The name of the units produced by the K-VER is “KCER” for Korea Certified Emission Reduction.

According to the ETS legislation passed by the National Assembly, produced by the Presidential Committee on Green Growth (PCGG), facilities can request the conversion of internationally recognized emissions reductions to Korean credits. Subsequently, PointCarbon reported that the PCGG, speaking through Kwang-Hee Nam, had decided against accepting international offset credits, including CERs, in the first two trading periods 2015-2017 and 2018-2020 of the Korean ETS. Though the decision is not enshrined in law, and the law will not be amended by presidential decree officially until November 15, 2012, it is likely that the exclusion of international offsets through 2020 will stand. After 2020, limitation on the use of offsets and the term of validity of offsets is currently unclear, but may also be determined by the presidential decree.

Based on a previous analysis of the 30% reduction goal of BAU by 2020, PointCarbon estimated that a possible cap may constitute a 4% reduction over 2005 levels by 2020, or 450 Mt.⁹⁰ Based on that information, Point Carbon thought that demand for international offsets could have been within the range of 30 and 225 Mt CO₂e annually from 2015-2017.⁹¹

5.5 SOUTH KOREA'S POSITION TOWARDS THE CDM

As a non-Annex 1 country of the Kyoto Protocol, South Korea has no obligations under the current commitment period. The passage of the recent ETS law will coincide with negotiations for the post-Kyoto period. Korea had generally been favourable towards the CDM especially having originally been a host country producing CER's rather than as a source of demand. The basic plan for the ETS includes provisions regarding how the Korean system could potentially link to the international carbon market.

88 Simjanovic 2012.

89 Peters-Stanley 2012.

90 Simjanovic 2012.

91 Ibid.

Demand for CERs has now been put into question after the announcement of Kwang-Hee Nam. Another complication had been that according to the Marrakesh Accords CERs may only be transferred to Annex I Parties that have a commitment in Annex B of the Kyoto Protocol. This raises the question how CERs could have been used by regulated sources to comply with their ETS obligations. Bloomberg New Energy Finance had previously assumed that “approximately 20 per cent of abatement” through 2020 could be met through CERs.⁹²

Despite the current uncertainty of Korea’s acceptance of CERs in its ETS, the South Korea’s position towards the CDM internationally, and specifically in the UNFCCC negotiations is generally positive. Some issues are criticised, such as the unequal geographical and sectoral distribution, but overall South Korea considers the CDM to be a successful instrument. South Korea’s main point of criticism appears to be its scale. South Korea stipulates that “the CDM in its current form of project-specific nature is not able to generate financial flows needed under a ‘global deal.’” Based on analysis by Nicholas Stern, South Korea considers that climate stabilisation would require 20-75 billion USD by 2020 and up to 100 billion USD by 2030, whereas the capacity of the current CDM is about 400 project registrations per year and 6 billion USD at current carbon prices (Republic of Korea 2008: 3).

South Korea is therefore strongly in favour of NAMA crediting, but a submission from 2009 also considered the CDM as one possible basis for scaling up mitigation action through NAMAs. The submission notes that “Carbon credit for NAMAs could be established either under the UNFCCC as one of the means of financing and technology transfer mechanism for the implementation of paragraph 1(b)(ii) of the Bali Action Plan or as an enhancement of the current CDM under the Kyoto Protocol as part of CDM reform package... To credit NAMAs could enhance the current project-based CDM towards program- and policy-based crediting mechanism. Sectoral targets or cap-and-trade schemes, which are not eligible for credit under the current CDM, could be the NAMAs that would be eligible for credit.” (Submission 20.02.2009 p. 78) South Korea also suggested that the standards for NAMA crediting should be based on CDM methodologies (Republic of Korea 2009: 43).

6 PROSPECTS FOR THE DEVELOPMENT OF CDM AS A CONTINUING INTERNATIONAL OFFSET STANDARD

The following findings are based on the preliminary scoping, with regard to the four jurisdictions’ positions on the strengths and weaknesses of the CDM and their suggestions for reform.

6.1 CDM: STANDARD OR NON-STANDARD?

The criticisms by California and Japan are rather elaborated whereas Australia and South Korea generally consider the CDM a successful instrument and mostly focus on how mitigation action can be scaled up through either the CDM or new mechanisms. In developing its own domestic offset mechanism however, Australia has shown some criticism of the CDM approval approach and instead aligned itself with the Californian and Japanese perspective of standardized baselines to measure additionality. California and Japan are both strongly in favour of abandoning project-by-project additionality testing in favour of standardised top-down approaches. Japan is taking a strong position that the CDM’s additionality rules are counterproductive and should be radically reformed to better promote clean investments. They consider that the largest barrier in the CDM is the many uncertainties about whether a project will be registered and whether as many CERs as expected will be issued.

In the opinion of Japan, the main reason for this uncertainty is the judgment that DOEs and the EB need to exercise when assessing projects. They suggest that to remove this problem the counterfactual project-by-project approach to additionality should be replaced by a top-down approach based on clear eligibility criteria and quantitative parameters, as is already employed for micro-scale projects. In particular, the EB should establish a positive list of specific project types of a specific size which would be deemed automatically additional.

92 Han 2012.

For those project types where this is not feasible, the EB should set default parameters, in particular for the parameters that are needed for the investment analysis. In the same vein, standardised baselines should include criteria for automatic additionality. At the same time, Japanese representatives acknowledge that the ideas they propose are not radically new and that the EB has already taken some steps toward further standardisation. However, they feel that the EB is moving too slowly and that decentralised approaches would be better suited to taking local circumstances into account.

The Californian regulators also distance themselves from the CDM, highlighting in particular concerns about the CDM's environmental integrity. They claim that their offset rules have been designed explicitly to avoid the problems encountered under the CDM. The approach taken by California is similar to what is suggested by Japan, relying on standardised assessments of additionality developed by the ARB rather than project-specific assessments done by the project developers themselves.

Despite these perspectives of some of the jurisdictions vis-à-vis the CDM one has also to consider the influential role the CDM process is playing in the design and implementation of the other offset approaches analysed in this paper. Elements such as MRV requirements or eligible projects methodologies to be applied in the respective approaches indicate that CDM has served, at least to a certain degree, as a reference standard and is likely to do so also during the on-going CDM reform process. This is illustrated by the Japanese Guidelines for Measurement, Reporting and Verification of GHG Emission published in April 2012 by the Japan Bank of International Cooperation. According to JBIC, these guidelines should be “based on JBIC's operational experience and with reference to the existing international practices for quantification, such as the Kyoto Mechanisms and ISO (International Organization for Standardization) standards” (JBIC 2012: 2). In other words, the procedures for MRV structures are likely to be inspired by insights already gained under CDM implementation although decisions on MRV requirements such as reporting guidelines or the accreditation of verifiers are likely to happen first and foremost at the bilateral level.

As for Australia, the country's position is open enough to international offsets so as to allow for CERs, ERUs, and RMUs in the Australian Carbon Pricing Mechanism with similar qualitative restrictions to the EU (though no geographic restrictions). The Australian approach to its domestic offset mechanism, the CFI, is still in development, but uses available CDM/JI methodologies as starting point. However Australia has decided to explicitly do away with a project by project approval process. The CFI also allows for new methodologies for the emissions from feral wildlife management and other “non-Kyoto” methodologies. After several calls for submission of methodologies, the first approval of a methodology is still pending. Accordingly, the concrete influence of past CDM activities still remains to be seen. The units produced by approved projects will be known as Australian Carbon Credit Units (ACCUS) and be divided into Kyoto ACCUs and non-Kyoto ACCUs. The offset provisions provide for the opportunity, depending on price trends, to develop offsets for international markets in Australia and export them as ERUs. This demonstrates the tacit acceptance of the international standard regime not only in accepting foreign credits, but also in the methodology of developing domestic credits. However, the core principles of methodology development also point in the direction favoured by California and Japan, being based on a top-down approach based on positive and negative lists rather than project-by-project additionality testing.

6.2 OUTLOOK FOR CDM REFORM

The on-going debate on the CDM reform has gained some dynamic when the CDM Executive Board decided on its sixty-third meeting, to launch a policy dialogue to review past CDM experience and help ensure the readiness and positioning of the mechanism to meet the challenges of the post-2012 period. The High-Level Panel had its constituting meeting on 14-15 February 2012, at which it inter alia established a research agenda for itself. The research is to focus on three main areas:

- Impact assessment
- Operation and governance
- Context

The “context” research area is to focus on the evolving context of the CDM, in particular in relation to new and emerging offset mechanisms and carbon markets. This work is to encompass local, national and regional trading mechanisms, the new market mechanism that was defined in Durban, NAMAs, and related financing instruments such as the Green Climate Fund. The final report of the panel is due in September 2012 and may offer some further insights how the CDM reform process and select offset activities can inspire each other to ensure the establishment of a strong global carbon market. Whereas the further development of projects methodologies as well as guidelines for MRV structures seem to offer some prospects for a more intensive coordination, the overall discussions to agree on find common criteria for additionality tests is more than challenging.

6.3 CDM IN THE POST-2012 WORLD

Independent of the CDM reform process and the possible development of other multilateral new market mechanisms, the EU ETS, Japan, and to a lesser extent New Zealand, will remain the main sources of potential demand for CERs for the period 2012-2015. Potential demand from the EU is however relatively limited, and will be greatly influenced by possible political decisions with regard to set-aside, backloading, and perhaps a more ambitious climate reduction target. Under current conditions, cdc climate has estimated the maximum amount of credits that could be used in the EU ETS cumulatively over the period 2008-2020 under current conditions at about 1.6 billion. They also estimate that CDM/JI will deliver that amount of credits by 2013-14, at which point CER and ERU prices may in their view drop close to zero.⁹³ There are already signs of decoupling, CER prices are currently more than 50% lower than EUA prices.⁹⁴

Japanese policy considerations with regard to the post-2012 period remain to be determined, with a major variable being the possible revision of the 25% reduction goal for 2020. Demand for CERs may also be reduced by the extent to which the BOCM will be recognised as contributing to the Japanese reduction target.

Starting in 2015, it is reasonable to expect some additional demand from Australia though the Australian minimum surrender charge will, at least partially limit overall demand from these its ETS. It is unclear if one can really completely exclude South Korea from demand calculations after 2015, given the announcement of the PCGG, it is more likely to expect South Korean demand for international offsets starting in 2020.

The Californian approach remains focused on developing and expanding offsets accountable to the Californian Air Resources Board and mutual recognition of possible offset credits developed through its WCI partners. Despite motions undertaken under the administration of former Governor Schwarzenegger to move towards more international engagement and sectoral crediting in the forestry sector outside of the United States and Canada, it is unlikely that California or the WCI will emerge as a participant or source of demand in the Kyoto instrument market anytime in the foreseeable future.

93 Bellassen et al. 2012.

94 Reuters 2012.

BIBLIOGRAPHY

AB 32. The Global Warming Solutions Act of 2006 (California Health and Safety Code) §38570 (b).

ARB (Air Resources Board). 2009. International offsets in a California cap-and-trade program. July 30. <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>

ARB 2008. Climate Change Proposed Scoping Plan Appendices. Volume I: Supporting Documents and Measure Detail, a framework for change. October 2008. <http://www.arb.ca.gov/cc/scopingplan/document/appendix1.pdf>

ARB 2010. Proposed Regulation to Implement the California Cap-and-Trade Program, Volume II Appendix D. California Environmental Protection Agency Air Resources Board.

ARB. 2010a. Sectoral-based crediting and sub-national REDD. July 30. <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>

ARB. 2010b. Update on offsets and linkage in a California cap-and-trade program, June 22. http://www.arb.ca.gov/cc/capandtrade/meetings/062210/0622_Offsets_and_Linkage_presentation.pdf

ARB. 2010c. Updated economic analysis of California's climate change scoping plan. Staff report to the Air Resources Board. March 24. <http://arb.ca.gov/cc/scopingplan/economics-sp/economics-sp.htm>

ARB 2010d. Resolution 10-42. <http://www.arb.ca.gov/reqact/2010/capandtrade10/res1042.pdf>

ARB. 2011a. Final rulemaking approval California cap on greenhouse gas emissions and market-based compliance mechanisms. December 22. <http://www.arb.ca.gov/reqact/2010/capandtrade10/capandtrade10.htm>

ARB. 2011b. Board meeting minutes. August 24. <http://www.arb.ca.gov/board/meetings.htm#2011>

ARB 2012. Cap-and-Trade workshop: Regulation for linking California and Quebec's cap-and-trade program. Slide presentation. February 3, 2012. <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>

Arimura, T. H., Maeda, S., Wada, J., and Urashima, K. (2011) "Promotion of Carbon Capture and Storage Technology Using Carbon Emissions Trading Systems," Science & Technology Trends, 40, 44-57. <http://www.nistep.go.jp/achiev/ftx/eng/stfc/stt040e/qr40pdf/STTqr4004.pdf>

Australia 2008. Carbon Pollution Reduction Scheme. Green Paper. July 2008

Australia 2008. Carbon Pollution Reduction Scheme, Australia's Low Pollution Future, White Paper. Volume 1. December 2008.

Australia 2009. Legal matters arising from the mandate of the AWG-KP, Submission to the AWG-KP, April 2009, FCCC/AWG/2009/MISC.8, 6 May 2009.

Australian 2011. Carbon Farming Initiative, Positive List guidelines, Common Practice. Department of Climate Change and Energy Efficiency. October 2011. <http://www.climatechange.gov.au/en/government/initiatives/carbon-farming-initiative/activities-eligible-excluded/additional-activities-positive-list/~media/government/initiatives/cfi/activities-eligible-excluded/CFI-Positive-List-guide-20111024-PDF.pdf>

Australia 2011a. SLI 2011 No. 266 Regulations as made. Australian National Registry of Emissions Units Regulations 2011. <http://www.comlaw.gov.au/Details/F2011L02585>

Australia 2011b. Consultation Paper: Positive and Negative Lists for the Carbon Farming Initiative. <http://www.climatechange.gov.au/government/submissions/closed-consultations/~ /media/publications/carbon-farming-initiative/cfi-pos-neg-consultation-paper.pdf>

Australia 2011a. Price floor for Australia's carbon pricing mechanism: Implementing a surrender charge for international units. Australian Government. December 2011. <http://www.climatechange.gov.au/government/submissions/closed-consultations/~ /media/government/submissions/iusc/DiscussionPaper-InternationalUnitSurrenderCharge-20111222-PDF.pdf>

Barclays Capital, Commodities Research (BCCR). 2011. "I wish they all could be California", February 2, 2011, p. 11, Figure 13. <http://barcap.com/about+barclays+capital>

Bellassen, Valentin, Nicolas Stephan and Benoit Leguet. 2012. Will there still be a market price for CERs and ERUs in two years time? Climate Brief n° 13. http://www.cdclimat.com/IMG/pdf/12-05_climate_brief_no13_-_supply_demand_for_cer_eru_in_the_ets.pdf

BP (British Petroleum), EDF (Environmental Defense Fund), PG&E (Pacific Gas & Electric), the Nature Conservancy. 2009. Statement of recognition regarding the benefits of high quality offsets within California cap-and-trade program. August 4. Written testimony to ARB August 4. <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>

California Code. 2010. 10 Climate Change, Article 5, Sections 95800 to 96023, Title 17, California Code of Regulations <http://www.arb.ca.gov/regact/2010/capandtrade10/finalfro.pdf#page=152>

Castro, Paula, Daisuke Hayashi, Martin Stadelmann, Axel Michaelowa, Cartin Cames and Sean Healy. 2011. Solving the MRV challenge for new market-based mechanisms: What can past experience teach us? Öko-Institut e.V., Perspectives GmbH, and Institut für Politik-wissenschaft (IPZ), Universität Zurich. Project for the German Environment Agency (UBA). November 2011.

Certification Center on Climate Change, Japan (4CJ). Information sheet on Japan Carbon Offset Forum [J-COF].

Combet, Greg, office of. 2012. Australia and Republic of Korea Increase Cooperation Towards a Low Carbon Future: Media Release. 27. April 2012.

Commission Regulation (EU) No 550/2011 of 7 June 2011 on determining, pursuant to Directive 2003/87/EC, certain restrictions applicable to the use of international credits from projects involving industrial gases.

Department of Climate Change and Energy Efficiency. 2012. Price floor for Australia's Carbon Pricing Mechanism. Discussion Paper. Government of Australia. <http://www.climatechange.gov.au/government/submissions/closed-consultations/price-floor-carbon-pricing.aspx>

Directive 2009/29/EC, Article 11(1)5 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0063:0087:en:PDF>

Directive 2009/29/EC, Article 24(a) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0063:0087:en:PDF>

EDF (Environmental Defense Fund) 2008. Reforming the CDM: the need for new ways to welcome developing countries into a global carbon market. August 20.

EPRI (Electric Power Research Institute). 2011. Overview of the California greenhouse gas offsets program: Background paper for the EPRI greenhouse gas emissions offset policy dialogue workshop #10. April. http://globalclimate.epri.com/doc/EPRI_Offsets_W10_Background%20Paper_CA%20Offsets_040711_Final2.pdf

Elsworth, Rob and Bryony Worthington 2010. International Offsets and the EU 2009. An update on the usage of compliance offsets in the EU Emissions Trading Scheme. Sandbag.

Garnaut 2008. The Garnaut climate change review. Commonwealth of Australia. 2008. [http://www.garnautreview.org.au/CA25734E0016A131/WebObj/GarnautClimateChangeReview-FinalReport-30September2008\(Fullversion\)/%24File/Garnaut%20Climate%20Change%20Review%20-%20Final%20Report%20-%2030%20September%202008%20\(Full%20version\).pdf](http://www.garnautreview.org.au/CA25734E0016A131/WebObj/GarnautClimateChangeReview-FinalReport-30September2008(Fullversion)/%24File/Garnaut%20Climate%20Change%20Review%20-%20Final%20Report%20-%2030%20September%202008%20(Full%20version).pdf)

Hamanaka, Hironori 2008. Japan's Efforts to Achieve Kyoto Protocol Goals. Institute for Global Environmental Strategies. February 14 2008. http://www.iges.or.jp/en/be/pdf/activity10/Hamanaka_E.pdf

Han, Sangim. 2012. South Korean Parliament Approves Carbon Trading System. Bloomberg. May 2, 2012. <http://www.bloomberg.com/news/2012-05-02/south-korean-parliament-approves-carbon-trading-system.html>

Hunt, Greg 2012. Gillard's polluter handout. The Australian. April 09, 2012. <http://www.theaustralian.com.au/national-affairs/opinion/gillards-polluter-handout/story-e6frgd0x-1226321647433>

IEEJ 2004. Purpose of IEEJ/Our Vision. <http://eneken.ieej.or.jp/en/about/purpose.html>

IETA 2011. Asia and Beyond: the Roadmap to Global Carbon & Energy Markets. Greenhouse Market Report 2011. <http://www.ieta.org/assets/Reports/ieta%202011%20qhq%20market%20report%20final.pdf>

Japan 2008. In pursuit of "Japan as a Low-carbon Society", Speech by H.E. Mr. Yasuo Fukuda, Prime Minister at the Japan Press Club. 9. June 2008. http://www.kantei.go.jp/foreign/hukudaspeech/2008/06/09speech_e.html

Japan 2008. Information, views and proposals on paragraph 1 of Bali Action Plan (For AWG-LCA2), FCCC/AWGLCA/2008/MISC.2, 14 August 2008 (pp. 23–39). <http://unfccc.int/resource/docs/2008/awglca3/eng/misc02.pdf>

Japan 2008. The Global Warming Prevention Headquarters. Kyoto Protocol Target Achievement Plan. Tokyo, Japan. UNT Digital Library. <http://digital.library.unt.edu/ark:/67531/metadc29339/>

Japan 2009. Japan's submission for the AWG-KP, Emissions trading and the project-based mechanism, FCC/KP/AWG/2009/MISC.3, 10 March 2009 (pp. 60–66). <http://unfccc.int/resource/docs/2009/awg7/eng/misc03.pdf>

Japan 2009. Support for developing countries under the "Hatoyama Initiative". Press Release. Office of the Prime Minister. 16 December 2009. http://www.kantei.go.jp/foreign/topics/2009/1216initiative_e.pdf

Japan 2009b. Statement by Prime Minister Yukio Hatoyama at the United Nations Summit on Climate Change. 22 September 2009. Office of the Prime Minister. http://www.kantei.go.jp/foreign/hatoyama/statement/200909/ehat_0922_e.html

Japanese Ministry of Environment 2011. A MOEJ Initiatives on Bilateral Mechanisms For Mitigating Climate Change, Office of Market Mechanisms. Climate Change Policy Division. http://www.env.go.jp/en/earth/ets/mkt_mech/bilateral_moej110223.pdf

Japan Bank of International Cooperation 2012: Guidelines for Measurement, Reporting and Verification of GHG Emission. Published in April 2012 by the JBIC.

Jones, Twomey, MacGil and Betz 2011. Australia – Finally a Carbon Pricing Scheme? in Greenhouse Gas Market 2011. Asia and Beyond: the Roadmap to Global Carbon and Energy Markets. IETA. 2011. <http://www.ieta.org/assets/Reports/ieta%202011%20qhq%20market%20report%20final.pdf>

Kameyama 2010. Japan in the Midst of Multilateral Negotiations on the Future Framework for Climate Change. Chapter in The Elusive Balance Regional Powers and the Search for Sustainable Development. Hokkaido University. <http://src-h.slav.hokudai.ac.jp/rp/publications/no02/contents.html>

Koakutsu, Kazuhisa, Nozomi Okubo, Kentaro Takahashi, Naoki Torii, Akiko Fukui 2011. CDM Reform 2011: Verification of the progress and the way forward (IGES Policy Report No. 2011-01). Institute for Global Environmental Strategies (IGES). Available at: <http://enviroscope.iges.or.jp/modules/envirolib/upload/3327/attach/cdmreform2011.pdf>

Kiko Network. 2007. Fact Sheet of the Keidanren Voluntary Action Plan. May 2007. <http://www.kiconet.org/english/publication/archive/keidanren-vap.pdf>

Kind, Christian, Sebastian Duwe, Dennis Tänzler, and Lena Reuster, Max Kleemann, Jan-Marten Krebs. 2010. Analysis of the German market for voluntary carbon offsetting. Summary. Umweltbundesamt. 10/2010.

Le, Hanh and Anaïs Delbosc. 2012. Japan's Bilateral Offset Crediting Mechanism: A Bilateral Solution to a Global Issue?. Climate Brief: Focus on the economics of climate change. No. 11 January 2012. CDC Climat research.

Masaki, Hisane. 2012. Japan's TEPCO pulls out of carbon market. PointCarbon. 4 June 2012.

S. Mazouz and E. Jackson 2012. Emissions Trading Coalitions – Leveraging Emissions Trading to Achieve Greater Levels of Global Mitigation Ambition, Discussion paper, The Climate Institute, Sydney.

Mazurek, Jan 2012. California Climate Action. Chapter in Environmental Leadership: A Reference Handbook. Edited by Gallagher, D.r.; N. Christensen, R.N.L. Andrews. SAGE.

Mazurek 2012a. Examination of the Role of CDM in ARB's Compliance Offsets Program. Map of Agencies, Actors, References. March 2012.

Ministry of Economy, Trade and Industry 2010. Overview, Emissions Trading Scheme. July 2010. http://www.meti.go.jp/english/policy/energy_environment/global_warming/pdf/emission_scheme.pdf

Ministry of Economy, Trade and Industry 2012. Result of the 23rd Meeting of the Domestic Credit Certification Committee. http://www.meti.go.jp/english/press/2012/0221_01.html

Ministry of the Environment, Japan 2010. Suggestions for a New Flexible Mechanism September 2010. Office of Market Mechanisms. http://www.env.go.jp/en/earth/ets/mkt_mech/new_flexible_mechanism100901.pdf

Ministry of the Environment, Japan 2011. Japan's National Greenhouse Gas Emissions in Fiscal Year 2010 (Preliminary Figures). December 13, 2011. <http://www.env.go.jp/en/headline/headline.php?serial=1703>

Mizuno, Yuji, Kazuhisa Koakutsu, Keisuke Iyadomi, Nozomi Okubo, Chisako Urayama, Kentaro Takahashi 2010. Towards CDM Reform: Report of the IGES CDM Capacity Building Kyoto General Meeting. Institute for Global Environmental Strategies (IGES). Available at: <http://enviroscope.iges.or.jp/modules/envirolib/upload/3327/attach/cdmreform2011.pdf>

Multi-Party Climate Change Committee 2011. Multi-Party Climate Change Committee Clean Energy Agreement. Australian Government. 10 July 2011. <http://www.climatechange.gov.au/media/whats-new/mpccc-cleanenergy-agreement.aspx>

Multi-Party Climate Change Committee 2011a. Meeting 4 – 18 February 2011. Minutes of the meeting. <http://www.climatechange.gov.au/en/government/initiatives/mpccc/meetings/fourth-meeting/~media/publications/mpccc/meeting-minutes-110218.pdf>

National Emissions Trading Taskforce, 2006. Possible Design for a National Greenhouse Gas Emissions Trading Scheme. State and Territory Governments of Australia.

NEDO 2011. Report of the Outcome of the 2010 Kyoto Mechanism Credit Acquisition Project. (in Japanese).

NEDO 2012. Results of the Kyoto Mechanism Credit Acquisition Project. Press Release. April 2, 2012. http://www.nedo.go.jp/news/press/AA5_100112.html

Nichols. 2012. Testimony of Mary D. Nichols, Chairman California Air Resources Board to the Senate Select Committee on Environment, Economy & Climate Change. March 27, 2012. <http://www.arb.ca.gov/cc/capandtrade/nicholstestimony.pdf>

O'Donnell, Jill Kosch 2012. Three Hurdles for Emissions Trading Scheme. ROK Green Growth Quarterly Update I-2012. Council on Foreign Relations June 2012.

Ogawa, Junko 2008. Revised Kyoto Protocol Target Achievement Plan – Overview and History of Revision -. IEEJ. July 2008. <http://eneken.iej.or.jp/en/data/pdf/443.pdf>

PointCarbon 2011. Australia should sign deals to secure offset supply: analysts. 8 November 2011.

Point Carbon 2011a. Japan slashes 2012 bilateral CO2 deal budget by 30 pct. 28. December 2011.

Peters-Stanley, Molly 2012. Bringing it Home: Taking Stock of Government Engagement with the Voluntary Carbon Market. March 2012. Forest Trends, Ecosystem Marketplace.

PointCarbon 2012. China ETS to use credits from unapproved CDM Schemes. 21 Feb 2012.

Republic of Korea 2008. Market-based Post-2012 Climate Regime: Carbon Credit for NA-MAs. http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/market_based_climate_regime-korea.pdf

Republic of Korea 2009. Proposal of Draft Text by the Republic of Korea, FCCC/KP/AWG/2009/MISC.9, 8 May 2009 (pp. 42–44). <http://unfccc.int/resource/docs/2009/awq8/enq/misc09.pdf>.

Reuters 2012. EU carbon rescue plan may not help U.N. offset slump. <http://www.reuters.com/article/2012/07/17/us-offsets-un-eu-idUSBRE86GOLA20120717>

Rudolph, Sven and Seung-Joon Park 2010. Where Did All the Climate Markets Go? Paper Presented at the 11th Biennial Conference of the International Society for Ecological Economics (ISEE), August 22-25, 2010, Oldenburg/Bremen, Germany.

Sahota 2012. An Overview of the final cap-and-trade regulation and what it means for offsets markets. Presentation to the Climate Action Reserve (CAR). Jan 20. <http://www.climateactionreserve.org/resources/presentations>

Sheridan, Greg 2012. High cost and nil effect: that's our carbon tax. The Australian. July 07, 2012. <http://www.theaustralian.com.au/national-affairs/opinion/high-cost-and-nil-effect-thats-our-carbon-tax/story-e6frqd0x-1226419362001>

Simjanoic, Jelena 2012. Korea's carbon emissions cap estimated at 450 Mt in 2015. Point Carbon. 14 May 2012. <http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.1889619>

Tokyo Metropolitan Government 2010. Toyko Cap-and-Trade Program: Japan's first mandatory emissions trading scheme. March 2010. Bureau of the Environment.

UNFCCC 2011. THE FEDERATION OF ELECTRIC POWER COMPANIES OF JAPAN Submission to Paragraphs 82, 86 and 87 of the Outcome of the work of the Ad Hoc

Working Group on long-term Cooperative Action under the Convention <http://unfccc.int/resource/docs/2011/smsn/nqo/226.pdf>

UNFCCC2011a. Letter from Chisako Urayama, IGES to Chairman and Members of the CDM Executive Board. 18 March 2011. http://cdm.unfccc.int/public_inputs/2011/poa/cfi/SCM7DN54Y479SXX4X46V6X43XIDKLI

UNFCCC 2012. Submission by Japan, Clarification of Quantified Economy-Wide Emission Reduction Targets. Additional information relating to the quantified economy-wide emission reduction targets contained in document FCCC/SB/2011/INF.1/Rev.1. 24 April 2012. <http://unfccc.int/resource/docs/2012/awqlca15/eng/misc01.pdf>

UNFCCC 2012a. Response from Kazuhisa Koakutsu, Senior Researcher, IGES, Re: Call for Inputs on CDM Policy Dialogue. 16. January 2012. http://cdm.unfccc.int/public_inputs/2011/eb64_02/cfi/W88DO4NL6UDUULKY2J7V6YP6VO1GIQ

UNFCCC 2012b. Japan: Clarification of Quantified Economy-Wide Emission Reduction Targets. Submissions from Parties to the AWG_LCA in 2012. 5 March 2012. <http://unfccc.int/bodies/awg-lca/items/4578.php>

Vivid Economics 2011. Protecting Prosperity – lessons from leading low carbon economies. May 2011. <http://www.vivideconomics.com/index.php/publications/protecting-prosperity—lessons-from-leading-low-carbon-economies>

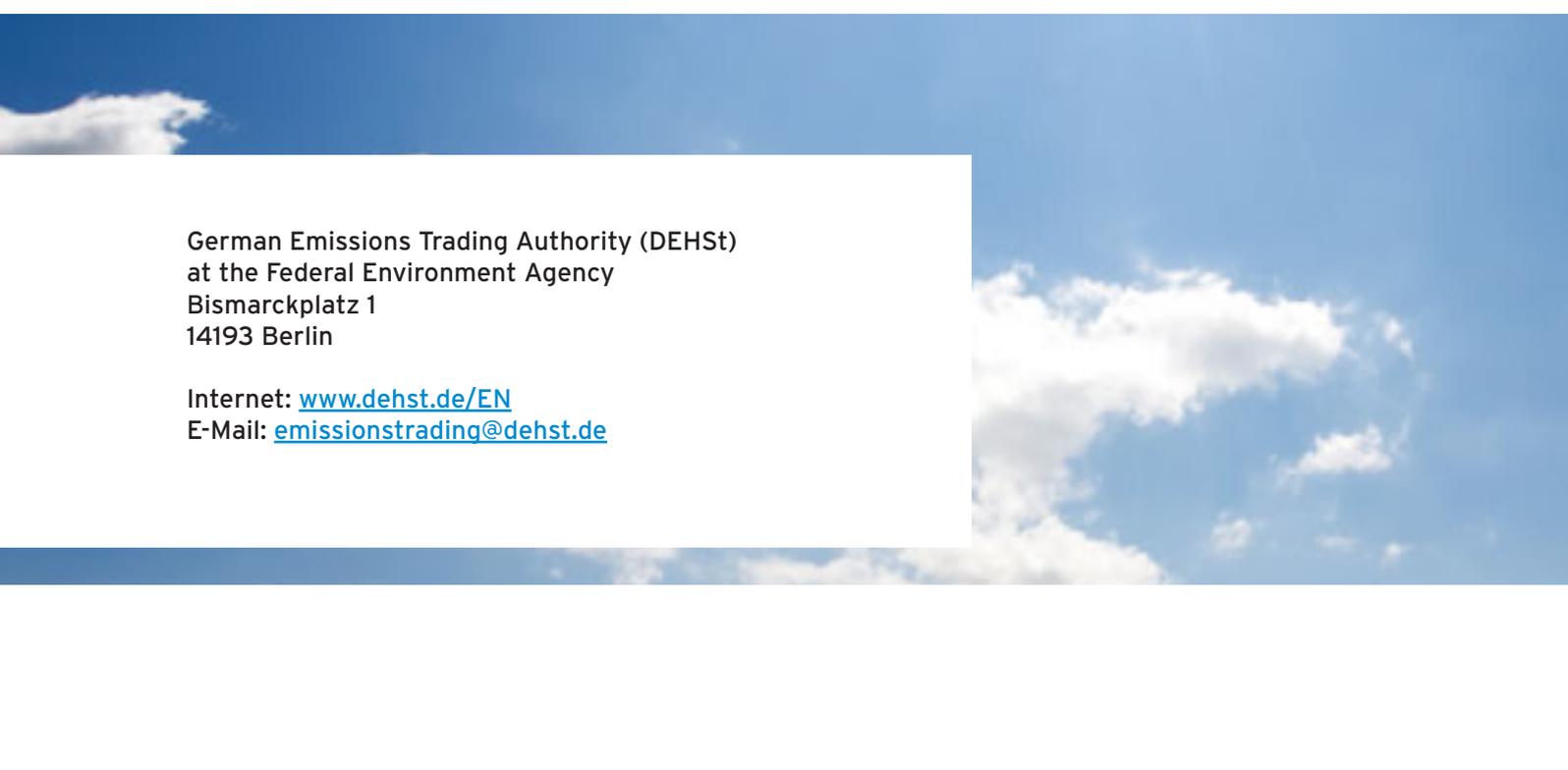
WCI 2012. Final Recommendations Offset System Process (Offset Committee Task 1.3). February 22, 2012. <http://www.westernclimateinitiative.org/document-archives/Offsets-Committee-Documents/Offset-System-Process-Final-Recommendations/>

Whitley, Shelgah. 2012. Japan's private climate finance support: mobilizing private sector engagement in low carbon development. Overseas Development Institute. Background Note February 2012. <http://www.odi.org.uk/resources/docs/7589.pdf>

World Bank, 2010. State and Trends of the Carbon Market 2010. Washington, DC http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/State_and_Trends_of_the_Carbon_Market_2010_low_res.pdf

World Bank. 2011. State and Trends of the Carbon Market 2011. Washington DC. http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/StateAndTrend_LowRes.pdf

World Bank. 2012. State and Trends of the Carbon Market 2012. Washington DC. http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/State_and_Trends_2012_Web_Optimized_19035_Cvr&Txt_LR.pdf



German Emissions Trading Authority (DEHSt)
at the Federal Environment Agency
Bismarckplatz 1
14193 Berlin

Internet: www.dehst.de/EN
E-Mail: emissionstrading@dehst.de