GLOBE INTERNATIONAL

Grantham Research Institute on Climate Change and the Environment

GLOBE Climate Legislation Study

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About GLOBE:

GLOBE International is the 'Global Legislators Organisation for a Balanced Environment', founded in 1989. GLOBE's vision is to create a critical mass of legislators that can agree common legislative responses to the major global environmental challenges. To achieve this GLOBE works across the major economies to support the advancement of complementary legislation and policies on climate change, natural capital, forestry and fisheries.

About LSE:

The Grantham Research Institute on Climate Change and the Environment is a research centre at the London School of Economics and Political Science. Its mission is to generate world-class, policy-relevant research on climate change and the environment for academics, policy-makers, businesses, non-governmental organisations, the media and the public. Established in May 2008, the Institute is supported by the Grantham Foundation for the Protection of the Environment, as well as the Centre for Climate Change Economics and Policy, which is funded by the UK Economic and Social Research Council and Munich Re.

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Foreword by the President of GLOBE International

It is my view that an effective post-2012 climate change agreement will only be possible when countries are already taking the necessary domestic action, firmly rooted in their own national interest. In other words, an international agreement will only reflect the political realities in the major economies, not define them.

Whilst the UN process is a critical component in the fight against dangerous climate change and it has rightly been the major international focus, we must accept that it is not sufficient on its own to deliver the reductions in greenhouse gas emissions the world so desperately needs.

It is necessary to put more effort into creating the underlying political conditions, and that means progressive countries must demonstrate that it is possible to de-link economic growth with greenhouse gas emissions. The EU and others must show how moving to a low carbon economy can create jobs, improve efficiency, competitiveness and public health and strengthen energy security.

The challenge of climate change is on an unprecedented scale and level of complexity and, with valid concerns about equity and short-term costs, including the impact on economic growth, development and energy prices, the case is particularly difficult for governments to present to its citizens and win. That is why I believe that legislators have a fundamentally important role and one that has, until now, not been fully recognised. Legislators are the link between citizens and governments: we can help make the case, win the political arguments against the opponents of climate action, drive political bargains and, most importantly, we can shape and advance national legislation that will help governments to go further in the international negotiations.

GLOBE members have recognised this. In October 2009, GLOBE International secured agreement on a set of 'legislative principles on climate change' at the Copenhagen Legislators' Forum in the Danish parliament. These principles were drafted by US Congressman Ed Markey in coordination with Chinese Congressman Wang Guangtao (the 'Wang-Markey' principles) and, after consultation with legislators from the major economies, were endorsed by over 100 senior legislators from Brazil, Canada, China, Denmark, the European Union, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, South Africa, South Korea, the UK and the US.

The principles were inspired by research showing that around 80% of the emissions reduction required by 2020 can be achieved in the following five areas, all of which can be advanced through legislation, even in the absence of an international agreement:

- Building and appliance standards;
- Low carbon energy production;
- Industrial energy efficiency;
- Vehicle fuel and efficiency standards; and
- Land use and forestry.

By demonstrating that these emissions reductions are possible, and cost-effective, leaders will have the confidence to take on more ambitious commitments and actions in the international negotiations.

Agreement on GLOBE's legislative principles demonstrated not only that it was possible to secure a political agreement between developed and developing countries, often so difficult in the atmosphere of mistrust in the formal UN negotiations, but also that legislators were determined to take responsibility.

Of course, agreeing a set of legislative principles is just the first step and GLOBE's priority now is to support its members to turn these principles into nationally appropriate legislation and the GLOBE Secretariat is already working with its members to develop climate change legislation. This report underpins that effort. It identifies the existing climate change-related legislation in the major economies, a fundamental resource for legislators, and will provide the foundation for the continuing discussions at GLOBE's legislators' forums meeting in Cape Town in December and Rio de Janeiro in May 2012.

During our contact with legislators in the preparation of this report, it is clear that there is a consensus on the need for the international climate change architecture formally to recognise relevant domestic legislation and GLOBE is working to identify ways that this could be achieved under a post-2012 framework. This is important for two reasons. First, an international commitment backed up by domestic legislation is more credible than one without legislative support. Second, the role of legislators in domestic monitoring, reporting and verification (MRV) could help inform and support an international MRV mechanism, one of the key difficulties in the current negotiations.

I am confident that the information contained in this report will be a catalyst for legislators to share experiences, highlight best practice, identify gaps and, most importantly of all, to advance GLOBE's 'legislative principles on climate change' in a way that will add new momentum to the international negotiations.

There is no other forum for legislators that facilitates such broad and deep engagement on climate change and I am honoured to be able to present this report on behalf of the cross-party GLOBE members from the major economies.

The Rt Hon. John Gummer, Lord Deben
President
GLOBE International

1 Introduction

The Global Legislators Organisation, known as GLOBE International, has been running a climate change dialogue for cross-party legislators from the major economies since 2005. This has provided a forum for legislators to be briefed by some of the world's leading experts on the latest science and economics, share experiences and best practice, help to break down partisan divides and identify common ground. Legislators from 16 countries are involved in the process, which together account for about three-quarters of global greenhouse gas (GHG) emissions. They are Brazil, Canada, China, the European Union (EU), France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, South Africa, South Korea, the United Kingdom (UK) and the United States of America (USA).

The process has resulted in some significant outcomes, providing political insights to help inform the official UN process. Specific outcomes include agreement on a post-2012 framework paper [1], a set of 'legislative principles on climate change' [2] and, most recently, agreement on a politically acceptable legal form for a post-2012 agreement.

It is clear that national legislation is a critical element of the response to climate change. Advancing ambitious laws not only helps to reduce harmful emissions and prepare for the impacts of climate change now, even in the absence of an international agreement, but also helps to advance national positions, giving leaders the confidence to go further in the formal United Nations (UN) negotiations. And by moving together, and in a consistent fashion, legislators can ensure that the benefits of moving to a low carbon economy are magnified.

Following the agreement on the 'legislative principles on climate change', GLOBE members felt that it would be helpful to map the existing climate change and energy legislation in the major economies to identify gaps and best practice, helping to establish what has worked well and could be replicated elsewhere.

As a result, GLOBE International partnered with the Grantham Research Institute on Climate Change at the London School of Economics to produce this study, which will form the basis of the next phase of GLOBE's work in working with national GLOBE chapters to advance domestic climate change legislation and supporting the role of legislators in holding their governments to account.

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1 Jay, Lord Michael, 2008. Combating climate change: A post-2012 framework. Poilcy paper, Global Legislators Organisation (GLOBE International). [URL: http://unfccc.int/resource//docs/2008/smsn/ngo/008.pdf].

2 Markey, E., Guangtao, W., 2009. Legislative principles on climate change. Report to the GLOBE International legislators forum, October 2009, Copenhagen. [URL: http://www.globeinternational.info/wp-content/uploads/2010/09/globe_legislative_principles_on_climate_change_final1.pdf].

2 Climate Change Laws, Patterns and Trends

2.1 What is a Climate Change Law?

For the purposes of this project we defined climate change law as:

> *"Legislation, or regulations, policies and decrees with a comparable status, that refer specifically to climate change or that relate to reducing energy demand, promoting low carbon energy supply, tackling deforestation, promoting sustainable land use, sustainable transport, or adaptation to climate impacts."*

This definition is fairly arbitrary and the authors have applied it with flexibility on a country-by-country basis to ensure the best reflection of the overall legislative, regulatory and policy response to climate change in the 16 study countries. As a result, this paper does not offer an exhaustive list of all climate-relevant legislation.

The authors were also strict about including laws under consideration. The detailed country annexes only include laws, regulations, policies and decrees that have been passed and that have come into effect. However, significant current legislative efforts that have not yet passed, or recently failed, have been referenced in the country summaries. For example, there are several current proposals in Mexico that are referred to in the summary. And in the USA, the most prominent recent unsuccessful attempts to pass a comprehensive climate change bill are analysed in the USA section.

Our focus on legislation at the federal level also excludes significant action at regional and local levels of government. This is particularly significant in countries with federal structures (e.g. Brazil, India and South Africa) and, within this category, in countries where federal legislation has been slow when compared with activity at the sub-national level (e.g. USA and Canada).

For EU Member States covered by this study (France, Germany, Italy and the UK), we have not replicated EU Directives listed under the EU section in each of the individual Member States' profiles, unless that country has implemented legislation that goes significantly beyond the scope of the Directive. For example, the French *Farming Policy Framework* goes beyond the EU *Biofuels Directive*.

2.2 Climate Change Legislation in Numbers

Our study covered 155 existing climate change-related laws in the 16 study countries. This is not an exhaustive list, as has been explained above, given that climate change legislation is difficult to define, but the country annexes demonstrate that climate change is featuring prominently on the legislative agenda across the 16 major economies. As of April 2011, the UK had the most climate change related laws with 22, and South Africa had the fewest with just 3. However, the number of laws relating to climate change is not a reliable indicator of the comprehensive nature of a given country's legislative response. Some laws are integrative whilst others are very narrow in scope.

2.2.1 Timing

In the countries covered by this study, the first law referring specifically to climate change was passed in 1998 by Japan (the *Law Concerning the Promotion of Countermeasures to Cope with Global Warming*) but the vast majority of legislation relating to climate change, particularly the 'flagship' laws outlined in Table 1 below, have been introduced since 2008. It is likely that many of these later laws were motivated by the need to present a positive national narrative at the United Nations Framework Convention on Climate Change (UNFCCC) negotiations in Copenhagen in December 2009, the scheduled end point for post-2012 negotiations under the Bali Roadmap (see section 2.3 below on motivations). In addition, as of April 2011, there is much legislation under preparation, for example the Chinese government is drafting a comprehensive climate change law to support the goals in the newly-published 12th Five Year Plan, Mexico's *General Law on Adaptation and Mitigation* and *General Law on Climate Change* are being debated in the Mexican Congress and the South African government is expected to publish a White Paper ahead of hosting the UN climate change negotiations in Durban in December. This activity suggests that the difficult talks in Copenhagen, and the subsequent slow progress in the formal negotiations, has not diminished countries' appetite for developing climate change legislation, perhaps recognising that many of the actions required to reduce emissions and to adapt to a changing climate, are directly in the national interest.

2.2.2 Flagship Legislation

In the majority of countries it is possible to identify 'flagship' legislation: a key piece of legislation through which lawmakers have attempted to put their stamp on climate change policy (Table 1). These are often integrative laws that bring together the various strands of pre-existing and new climate change regulation under one legislative umbrella, such as has occurred in Brazil, France, South Korea and the UK. In China and India, the five-year plans serve a similar purpose.

Table 1: Flagship Legislation

Country	Name of law	Main Purpose	Date Passed
Brazil	*National Policy on Climate Change* (NPCC)	The *NPCC* is based on Brazil's international commitment with the UNFCCC and incorporates all previous related government instruments (i.e. the National Plan on Climate Change, the National Fund on Climate Change and others).	2009
Canada	*Kyoto Protocol Implementation Act*	The purpose of the Act is to ensure that Canada takes effective and timely action to meet its obligations under the Kyoto Protocol.	2007
China	*National Climate Change Programme 2007*	This programme focuses on five key areas: i) greenhouse gas mitigation; ii) adaptation; iii) science and technology; iv) public awareness; and v) institutions and mechanisms. Measures include strengthening the existing energy legal system, improving the national energy programme, implementing *the Renewable Energy Law*, promoting favourable conditions for renewable energy development and GHG mitigation, stimulating energy price reform, optimising the energy mix, and promoting innovation and efficiency improvements in various power generating technologies (renewable and non-renewable), including nuclear power.	2007 (revised in 2008 and 2009)
European Union	*Climate and Energy Package* (CARE)	The core of the package comprises four pieces of complementary legislation: i) revision and strengthening of the EU Emissions Trading Scheme (ETS); ii) effort sharing: reducing GHG emissions fairly, taking into account the relative wealth of the EU Member States; iii) a common framework for the production and promotion of energy from renewable sources; and iv) a legal framework for the environmentally safe geological storage of CO_2.	2008

Country	Name of law	Main Purpose	Date Passed
France	*Grenelle I* and *II*	Grenelle laws include comprehensive policies on emissions targets, renewable energy, energy efficiency and research and development.	2009 and 2010
Germany	*Integrated Climate and Energy Programme*	This programme aims to cut greenhouse gas emissions by 40% from 1990 levels by 2020. The package focuses strongly on the building sector. The German Government approved a new climate package of measures in June 2008 that focuses on the transport and construction sectors.	2007 (updated 2008)
India	*National Action Plan on Climate Change* (NAPCC)	India's *NAPCC* outlines existing and future policies and programmes directed at climate change mitigation and adaptation. The plan sets out eight 'national missions' running up to 2017.	2008
Indonesia	*Presidential Regulation on the National Council for Climate Change* (NCCC)	The council coordinates climate change policy-making. It is composed of 17 Ministers and chaired by the President. The *NCCC* is assisted by the following working units: adaptation; mitigation; transfer-of-technology; funding; post-2012; and forestry and land use conversion.	2008
Italy	*Climate Change Action Plan* (CCAP)	Italy's *CCAP* is a comprehensive action plan to help Italy comply with GHG reduction targets under the Kyoto Protocol.	2007
Japan	*Law Concerning the Promotion of Measures to Cope with Global Warming*	This law establishes the Council of Ministers for Global Environmental Conservation; develops the Kyoto Achievement Plan; and stipulates the establishment and implementation of countermeasures by local governments.	1998 (amended 2005)
Mexico	Inter-Secretariat Commission on Climate Change; *Law for the Use of Renewable Energies and for the Finance of the Energy Transition (LUREFET)*	The commission is responsible for coordinating national policies for climate change mitigation and adaptation. *LUREFET* seeks to reduce Mexico's dependence on hydrocarbons by promoting renewable energy sources and clean technology for electricity generation. It also establishes the National Strategy for the Energy Transition and Sustainable Energy Use and the Energy Transition Fund.	2005 and 2008

Country	Name of law	Main Purpose	Date Passed
Russia	*Climate Doctrine*	The doctrine sets strategic guidelines for the development and implementation of future climate policy, covering issues related to climate change and its impacts. It focuses on the following areas: improving research to better understand the climate system and assess future impacts and risks; developing and implementing short- and long-term measures for mitigation and adaptation; and engagement with the international community.	2009
South Africa	*Vision, Strategic Direction and Framework for Climate Policy*	The policy is the basis of the draft *'Zero' Climate Change Policy*, to be converted into law by 2012. The document results from a public consultation process with civil society and business and is based on the findings of the Long-Term Mitigation Scenario Process (LTMS) on Climate Change. The policy proposes action in the following areas: (i) GHG emission reductions; (ii) Intensification of current initiatives; (iii) 'Business Unusual' call for action; (iv) Preparing for the future; (v) Vulnerability and adaptation; (vi) Alignment, coordination and cooperation among stakeholders.	2008
South Korea	*Framework Act on Low Carbon Green Growth*	This law creates the legislative framework for mid and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labelling, carbon disclosure, and the expansion of new and renewable energy.	2009
United Kingdom	*Climate Change Act*	The *Climate Change Act* provides a long-term framework for improving carbon management, promoting the transition to a low carbon economy, and encourages investment in low carbon goods. It includes specific emissions reduction targets (at least 80 per cent reduction from 1990 levels by 2050) and creates five-yearly carbon budgets.	2008

Country	Name of law	Main Purpose	Date Passed
United States of America	No integrative federal climate change legislation. Most meaningful measures so far: *Executive Order 13514: Federal Leadership in Environmental, Energy and Economic Performance*; *American Recovery and Reinvestment Act.*	*Executive Order 13514* makes GHG emission management a priority for federal agencies and establishes reporting requirements with detailed targets and deadlines. The focus is on transportation, overall energy use and procurement policies. All federal agencies are required to develop, implement, and annually update a 'Strategic Sustainability Performance Plan' that prioritises agency actions based on life-cycle return on investment. The *American Recovery and Reinvestment Act* authorises a stimulus package that supports new and existing renewable energy and energy efficiency programmes to the value of USD 18.6 billion.	2009

2.3 Motivations

Countries had different points of entry into climate change legislation, and different reasons to embark on legislative action. From discussions with legislators involved in passing climate change laws, three main motivations have been identified: economic factors, pursuit of international leadership and a sense of vulnerability to climate change.

2.3.1 Economic

The primary motivation for climate change legislation was often **economic**. For example, South Korea's *Green Growth Law*, which includes targets for emissions reduction and creates the legislative platform for the move to a low carbon economy, was at least partly driven by the concern to protect Korea's **competitiveness** against the backdrop of the likely imposition of carbon tariffs in Korea's main export markets (all the draft bills in the US have included carbon tariffs, to be imposed on imports from countries which, in the view of the US Congress, are not taking comparable action to reduce emissions). At the same time, South Korea saw the opportunity to kick start the economy through 'green' fiscal stimulus, investing in low carbon infrastructure and improving competitiveness by reducing energy costs.

Elsewhere, **climate finance** opportunities relating to the Kyoto mechanisms mattered for Russia, which has a large surplus of credits following its industrial collapse after the 1990 Kyoto baseline date for emissions. Finance was also important, at least to some extent, in Indonesia, where forestry legislation has been facilitated by a USD 1billion

Norwegian grant.[3]

Activity in the USA has been primarily about **energy security**. One of the biggest political issues in the USA is how to reduce reliance on foreign oil. Thus many of the proposed legislative measures have included support for domestic sources of energy (offshore drilling for oil and gas, support for nuclear energy, renewable energy, and energy efficiency).

Employment and the need to create jobs sometimes featured in climate change legislation, but this tended to be packaging designed to win support, rather than a primary motivation. The desire to make climate change a story of employment and growth is real and credible [4], but few laws contain many direct employment measures. Two examples are: i) the US *American Recovery and Reinvestment Act*, which allocates USD 500 million to a grant programme supporting clean energy workforce training managed by the Department of Labor and USD 100 million for workforce training managed by the Department of Energy's Office of Electricity Delivery and Energy Reliability; and ii) South Korea's *Green Growth Law* includes measures designed to gain a competitive advantage in low carbon industries, with a focus on business development and job creation.

2.3.2 Pursuit of International Leadership

The passage of climate change legislation has often been linked to a major international event in the country, which put countries into a position of **international leadership**. For example, Japan passed its first climate-related law with the help of momentum generated by its hosting of the UN climate negotiations in Kyoto, and Indonesia launched its *National Action Plan - Addressing Climate Change* when it hosted the 13th Conference of the Parties (COP13) to the UNFCCC in Bali in 2007. Mexico is currently working to pass comprehensive national and regional climate change legislation, initially driven by its hosting of COP16 in Cancún in late 2010 and South Africa is debating a Green Paper on climate change ahead of its presidency of the UNFCCC. In the UK, the 2005 Gleneagles G8 Summit, when the former UK Prime Minister Tony Blair put climate change on the agenda of G8 leaders for the first time, is often cited as a major influence on the UK's 2008 *Climate Change Act.*

The causality here is not clear. Perhaps a desire to advance the climate change agenda results simultaneously in domestic action and a willingness to provide international leadership. Or, more likely, the prestige that comes with hosting the UN negotiations or major international event, and the desire to demonstrate credible leadership by 'walking the walk', has encouraged and helped facilitate domestic action. A notable

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3 Norway and Indonesia signed a USD 1 billion project agreement in May 2010, under which the first phase is to develop a national REDD strategy, including strengthened domestic action and MRV.

4 See Organisation for Economic Cooperation and Development (OECD), 2010). Interim report of the Green Growth Strategy: Implementing our commitment for a sustainable future. Meeting of the OECD Council at Ministerial level, 27-28 May 2010. OECD, Paris. [URL: http://www.oecd.org/dataoecd/42/46/45312720.pdf].

exception is Canada, which hosted the UN climate negotiations in Montreal in 2005. A lack of legislative activity on climate change in Canada associated with this event may be explained by the fact that preparations for a federal election were underway at the time.

The EU is an interesting variation on this theme. Here the clear desire to show leadership was primarily inward-looking with the motivation, at least in part, to use climate change as a way to advance 'project Europe', giving the EU a new, environmental purpose and vision for the 21st century. However, the EU's internal ambition also carried over into the international stage, with a clear desire to position the EU as a climate change leader.

2.3.3 Vulnerability

Recognition of a country's **vulnerability** to climate change has resulted in laws with a heavy emphasis on adaptation. This is particularly the case in developing countries. For example South Africa's *Vision, Strategic Direction and Framework for Climate Policy* mandates government departments to include adaptation strategies as key performance indicators, and to include better early warning and disaster risk reduction systems. India's *National Action Plan on Climate Change* includes a National Mission for Sustaining the Himalayan Ecosystem to protect India's water supply alongside a *National Mission for Sustainable Agriculture*. Similar observations can be made about most other developing countries.

Among developed countries, the UK's *Climate Change Act* includes detailed provisions on adaptation and measures to understand climate change risks. However, this was not the primary motivation for the legislation, and many adaptation provisions were added fairly late in the legislative process.

2.3.4 Pressure of the UN Process

Although the UN negotiations are often criticised as slow and unwieldy, it is likely that the much-hyped UN negotiations in Copenhagen in December 2009 (UNFCCC COP15) were a major incentive for countries to pass domestic legislation. The climate change conference in the Danish capital was scheduled to be the conclusion of the post-2012 negotiations under the Bali Roadmap, and there was immense public and diplomatic pressure on countries to make ambitious commitments. It is probably no coincidence that the vast majority of 'flagship' climate legislation was passed in advance of Copenhagen during 2008 and 2009.

2.4 The Role of Parliamentary Committees

The lead parliamentary committee through which legislation was processed often reflected the primary motivation for the legislation. In oil- and gas-rich Russia, for example, the responsibility for climate legislation was combined with that for natural resource management. In South Africa, where the adverse impacts of climate change are a key concern, parliamentary oversight rests with the Committee on Water and Environmental Affairs. The UK combined energy and environmental interests by

creating a new government department, with its own select committee: the Department of Energy and Climate Change.

Elsewhere, responsibility was spread across committees and, in some cases, interest groups to accommodate the broad scope of climate change legislation. In Brazil, the lead committee was a specially formed Mixed Committee on Climate Change, whilst in the USA the Committee on Energy and Commerce was the lead in the House of Representatives, with six committees sharing jurisdiction in the Senate (Energy and Natural Resources; Environment and Public Works; Foreign Affairs; Finance; Agriculture; and Commerce). The French 'Comité National du Développement Durable et du Grenelle de l'Environnement' is composed of the Ministry of Environment, the inter-ministerial delegate for sustainable development and several groups comprising the private sector, non-government organisations (NGOs) and union representatives.

In most countries, however, the lead was taken by committees with an environmental remit. This is the case for example in Canada (Environment Committee), China (National Peoples Congress Committee on Environment Protection and Resources Conservation), the EU (Committee on Environment and Public Health), Italy (Senate Environment Committee) and South Korea (Standing Committee on the Environment).

The role of legislators, including parliamentary committees, in overseeing the implementation of climate-related legislation and low carbon policies will be the focus of a supplementary GLOBE project in 2011 and 2012.

2.5 Approaches

The international climate change architecture - including the United Nations Framework on Climate Change (UNFCCC) and its Kyoto Protocol - is heavily science-based. The ultimate goal of UNFCCC is to "prevent dangerous anthropogenic interference with the climate system". Defining 'dangerous' warming is very much a political decision, but emission targets are based on the scientific evidence, collated and reported by the Intergovernmental Panel on Climate Change (IPCC). Scientific evidence provides 'best estimates' of the level of warming associated with various concentrations of GHGs, together with scenarios for reducing anthropogenic emissions that offer various probabilities of achieving a specific temperature goal or atmospheric concentration of GHGs.

Much of the current discussion on post-2012 action revolves around a broad political agreement that the international community should attempt to limit global average temperature rise to 2^{o}C above pre-industrial levels (see the Copenhagen Accord [5] and subsequent Cancún Agreements [6]). The science prescribes that global emissions must

[5] See the Copenhagen Accord in: UNFCCC, 2010. Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7-19 December 2009. Addendum. Part Two: Action taken by the Conference of the Parties at its fifteenth session. Decision 2/CP.15: Copenhagen Accord. 30 March 2010. [URL: http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf].

[6] See the Cancún Agreements on the UNFCCC website. [URL: http://cancun.unfccc.int/].

be reduced by at least 50% from 1990 levels by 2050 to have about a 50% probability of reaching the 2^{o}C goal.

The way in which the global abatement burden is allocated among countries is also a political decision. There is a recognition - reflected in most of the commitments and actions put forward in Copenhagen - that for developed countries an aggregate emission cut of at least 80% from 1990 levels is required by 2050, with developing countries reducing their emissions by around 15-30% relative to a 'business as usual' (BAU) scenario.

This approach is, by and large, reflected in national legislation. The flagship laws, in particular, tend to be centred on medium- or long-term emissions reduction targets. In the case of industrialised countries they are often binding absolute emission reduction targets. For example, the UK has a binding absolute emissions reduction target of at least 34% below 1990 levels by 2020 and at least 80% below 1990 levels by 2050.

Particularly in developing countries, the emissions objectives are generally more aspirational and often relate to intensity or efficiency (e.g. the carbon and energy intensity targets in China and India), reflecting the principle of "common but differentiated responsibility" enshrined in the UNFCCC. Others focus on emissions pathways relative to BAU, for example Mexico's commitment to reduce its emissions by 30% below BAU by 2020 and South Africa's target to reduce emissions by 34% below BAU by 2020 and by 42% below BAU by 2025 (both conditional on receiving financial and technical support from industrialised countries).

However, some countries have taken a different approach. For example the USA, and to some extent Germany, have focused on a technology-based approach, which includes incentives for the promotion of new renewable and low carbon energy technologies. Germany's feed-in tariff for renewable energy has resulted in a massive increase in renewable capacity in the country, complemented by an overarching and (in the case of installations covered by the EU Emissions Trading Scheme) binding emission reduction target. In the USA, the USD 16.8 billion allocation towards renewable energy and energy efficiency has similar technology objectives, but there are no accompanying targets for emissions reduction in the *American Recovery and Reinvestment Act*.

2.6 Areas of Priority

Sector priorities tended to differ between countries, and they often reflected the main emissions sources in the country (e.g deforestation in Brazil and Indonesia; energy generation elsewhere). Energy efficiency and renewable energy featured prominently and are covered in legislation, to varying degrees, in all 16 countries. In contrast, the relationship between land use and land use change was an area with relatively little legislation. Adaptation featured in most countries, but in most cases not as prominently as mitigation. Table 2 below summarises the coverage of legislation in the study countries, including identifying the main focus.

Table 2: Coverage of Legislation

Key

'M' = Main Focus

'X' = Detailed Coverage

'O' = Some Coverage

Country	Pricing carbon	Energy Efficiency	Renewable Energy	Forestry	Other Land Use	Transport	Adaptation
Brazil	X	X	X	M	X	X	O
Canada		M	O	X	X	X	
China		M	X	X	X	X	X
EU	M	X	X	O	O	X	O
France	X	M	X		O	X	X
Germany	X	M	X			X	
India		M	X	X	X	X	X
Indonesia	X	X	X	M	X	X	X
Italy	X	M	X	O		X	
Japan	X	M	X	X	X	X	X
Mexico	X	X	M	X	X	O	O
Russia		M	O	O			X
South Africa	X	X	M			X	X
South Korea	M	X	X	X	X	X	X
UK	M	X	X			X	O
US		X	M	O	O	X	

2.7 Policy Instruments

It has become customary to classify carbon management policies into three broad areas: (i) measures to put a price on carbon; (ii) measures to overcome energy efficiency barriers; and (iii) measures that promote technological change [7]. The three approaches are incorporated to varying degrees in legislation.

There is widespread endorsement of **market instruments** to put a price on carbon. 'Cap-and-trade' is the core mechanism for achieving emissions reduction in the EU and

[7] Stern, N., 2006. The Stern Review on the economics of climate change. Cambridge University Press, Cambridge. [URL: http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/stern_review_report.htm].

it has featured strongly in laws in Brazil and South Korea, as well as draft legislation in Japan, Mexico and the USA. China is also planning to pilot emissions trading to help deliver its carbon intensity target under the 12th Five-Year Plan.

While most countries have provisions on **renewable energy**, their approaches differ from feed-in tariffs (for example, in Germany) to renewable energy standards (for example, in the UK), subsidies and tax credits.

All 16 study countries have included **energy efficiency** in their climate legislation or regulation. This reflects the fact that, whatever the motivation for implementing climate-related laws and the angle of any political opposition to regulating carbon, saving energy enjoys broad support: it reduces costs, increases competitiveness, reduces the demand for energy, thus increasing energy security and reduces greenhouse gas emissions at the same time. Japan has a history of strong energy efficiency legislation, with its first energy efficiency law (the *Law Concerning the Rational Use of Energy*) passed in 1979. This law has been amended and updated and remains central to Japan's energy legislation today. India introduced Energy Conservation Awards in 1993 to encourage and recognise industrial energy efficiency. China passed its *Energy Conservation Law* in 1997, and in the 11th Five-Year Plan, it set a target to reduce the energy intensity of its gross domestic product (GDP) by 20% from 2005 levels by 2010. The 12th Five-Year Plan, published in March 2011, includes a further target to reduce the energy intensity of GDP by 16 per cent by 2015.

Education features in legislation and policy in Brazil, China, France, Indonesia, the UK and elsewhere, recognising the importance of a well-informed public to maximise buy-in to the policies and measures needed to reduce emissions and adapt to the impacts of climate change.

Many countries have set up **new institutions** or **cross-governmental committees** to oversee climate policy. For example, Brazil has passed *Decree No. 6263/2007* which creates an Inter-ministerial Committee on Climate Change; in 2007, China established the National Coordination Committee on Climate Change, chaired by Premier Wen Jiabao and involving 20 ministries and government sectors; India has a Council on Climate Change, chaired by the Prime Minister; Indonesia has created a National Council for Climate Change involving 17 ministers and chaired by the President; Mexico, under a Presidential decree, created an Inter-Secretariat Commission on Climate Change in 2005; and South Korea recently formed a Presidential Committee on Green Growth. All of these initiatives demonstrate the seriousness with which climate change is being taken and recognise the necessity to coordinate climate change policy across the full range of ministerial portfolios, as well as the need for the Prime Minister or President to take difficult decisions when faced with competing priorities.

2.8 Partisanship

Climate change legislation tends to be bipartisan. In the UK, EU, Brazil and South Korea, flagship legislation was passed with support from the majority of the major political parties, including in many cases, those not in government.

Even where legislation has stalled, as in the USA, opposition has come from across the political spectrum (for example from 'rust belt' Democrats and Republicans with links to the oil industry and other high carbon industries).

3 Summary

As can be seen in sections 1 and 2 above, climate change is being addressed through legislation, to varying extents, in all of the major economies covered by this study. Although the approach differs, according to national priorities and circumstances, the overall aims – to reduce GHG emissions and prepare the country for the impacts of climate change – are consistent. Given the projected increase in the global population, it is very encouraging that much of the legislative activity is taking place in developing countries that, together, will represent 8 billion of the projected 9 billion global citizens in 2050.

The next section provides more detail about each country, including its most recent official emissions figures, its relative importance as an emitter, a summary of its legislative process and detail about each relevant piece of legislation.

4 Climate Change Legislation in 16 Countries

4.1 Brazil

4.1.1 Fact Box

Greenhouse Gas emissions incl. LULUCF [8] ($MtCO_2e$)[9] excl. LULUCF ($MtCO_2e$) Change from base year	 1,481 663 n/a
Latest reporting year	1994
Importance as an emitter	top 5
Copenhagen Accord pledge (for 2020)	Voluntary measures, including on deforestation, anticipated to lead to expected emission reductions of 36.1 to 38.9% by 2020, relative to business as usual
Flagship legislation	*National Policy on Climate Change* (2009)

4.1.2 Legislative Process

Brazil's legislative power is represented by a bicameral parliament formed by the Chamber of Deputies and the Senate. The lawmaking process encompasses not only parliamentarians but also the President, the Supreme Court, the Higher Courts, and the Attorney General. Decrees are administrative acts passed by the President, laws are established by legislators, and codes amount to a group of laws. Brazil tends to favour the legislative route in the adoption of environmental regulations, guidelines and policies. The country has a conservationist legal tradition and environmental legislation tends to be thorough and stringent. As a result, the key issue regarding environmental problems in Brazil is one of law enforcement as opposed to the lack of

[8] LULUCF stands for land use, land use change and forestry, and refers to an official greenhouse gas inventory sector under UNFCCC.

[9] Mt stands for megatonne (i.e., one million metric tonnes). Equivalent CO_2 (CO_2e) is the concentration of CO_2 that would cause the same level of radiative forcing as a given type and concentration of greenhouse gas. Examples of such greenhouse gases are methane, hydrofluorocarbons (HFCs) and nitrous oxide. CO_2e is expressed as parts per million by volume (ppmv).

legal principles and instruments. This dynamic reflects a recurrent conflict between conservation and development objectives.

4.1.3 Climate Change Legislation and Regulation

Climate Change

Brazil has shown a strong willingness to adopt climate change legislation. The country has passed legislation supporting its Copenhagen commitments; its *National Policy on Climate Change (Law No. 12187)* was passed in 29 December 2009. This law established the country's voluntary emission reduction target of 36.1% to 38.9% by 2020 with the year 2000 as a baseline. The policy presents ambitious emission reduction targets for its four designated strategic areas: deforestation (24.7%), agriculture and livestock (4.9% to 6.1%), energy (6.1% to 7.7%), and the steel sector (0.3% to 0.4%). Moreover, while the policy is rather broad, leaving specific implementation measures to be either established by decree or determined by the 'Second Brazilian Inventory on GHG Emissions and Reductions' (Second Inventory), it also incorporates all laws, measures and policies pertaining to climate change (i.e. the National Plan on Climate Change, the National Climate Change Fund, the plans for conservation of the country's national biomes and others). The policy further foresees the creation of a cap-and-trade system; however, details of how this would be rendered operational are left for future appreciation. Still, discussions on the possible implementation of such a mechanism are under way at state level in Sao Paulo.

In view of this situation, there is much expectation and pressure for the conclusion of the Second Inventory from civil society organisations. The rules that will define the implementation of the Second Inventory will only be established through various decrees that will not necessarily be adopted at the same time. In addition, environmental organisations also point to a conflict between Brazil's emission reduction targets, and developments such as the government's pursuit of large infrastructure projects and the current Law Project to revise the Forest Code, which favours more flexible measures concerning, among other things, land tenure, protected areas and conservation.

Although the *National Policy on Climate Change* is the overarching legal instrument in this area, the National Plan on Climate Change, created in December 2008 in response to a 2007 decree, provides a comprehensive framework of 25 actions. As 75% of Brazil's GHG emissions result from emissions from deforestation, the framework primarily focuses on reducing deforestation by 80% by 2020. Additionally, the plan includes provisions on energy efficiency and renewable energy. In contrast, the Ministry of Mines and Energy's Energy Expansion Plan for the period 2008-2017 (*Plano Decenal de Expansão da Energia*) launched days before the National Plan on Climate Change, foresees the expansion of fossil fuel based thermal power stations. It therefore establishes a potential conflict with the efforts to reduce GHG emissions and promote renewable energy.

Deforestation and land use change

A great part of Brazil's commitment to climate change involves measures to tackle

deforestation. Alongside provisions established by the *National Policy on Climate Change* and the National Plan on Climate Change, Brazil's commitment to its Copenhagen pledges is further illustrated by the national REDD+[10] Bill, which was initially proposed in July 2009. Apart from REDD+, the Law Project also involves services such as recovery, reforestation, maintenance, and improvement of ecosystems (including tourism, water, and biodiversity). Despite its commitment to addressing a wide range of environmental services, there are some key points which remain under debate and unclear; namely, whether REDD+ should be treated as a Nationally Appropriate Mitigation Action (NAMA), allocation of financing, and eligibility to participate in the programme. The bill was discussed by the Chamber of Deputies' Environment and Sustainable Development Commission in December 2009, which was followed by a series of public hearings and consultations with the private sector, social movements, civil society organisations and local and state governments in June 2010.

This legislation clarifies which types of activities are eligible for REDD+, creates a committee to oversee REDD+ implementation, and creates different types of REDD+ credits for fund and market based REDD+ systems. Other important issues that the legislation covers are:

- Ownership of the tradable REDD+ credits would likely follow the ownership of the land and forest.
- The Bill explicitly mentions some participatory rights and benefit-sharing rules to protect the rights of indigenous peoples, traditional communities and small rural producers, including the observation of the principle of prior and informed consent.
- The Bill announces the creation of a dedicated dispute settlement procedure for REDD+ activities, which re-affirms traditional communities' rights to participation in accordance with international agreements ratified by Brazil.

Following the elections in 2010, the same REDD+ Bill was re-introduced to Congress in early 2011 and the Federal Government is now more closely involved in the process. Considering the extensive debate about this bill prior to the elections and that the Environment and Sustainable Development Commission overcame many of the critical issues, it is expected that a quick decision will be made on this piece of legislation. In addition, there seems to be good cross-government support for the passing of his bill.

The opposite appears to be the case for discussions over the Brazilian Forest Code (1965) that at the time of writing is dominating Congress (April 2011). The Forest Code's requirement that a rural landowner in the Amazon maintain 80 percent of the native forest as a legal reserve has produced a heated dispute between the agriculture and environmental communities. Environmentalists see it as a potentially powerful tool to prevent deforestation, and the agriculture sector views it as economically ruinous for millions of ranchers and farmers. As a practical matter, that legal reserve

[10] 'REDD+' refers to: **r**educing **e**missions from **d**eforestation and **d**egradation; increasing removals from enhancement of forest carbon stocks; forest conservation; and sustainable management of forests.

requirement has never been effectively implemented, and President Luiz Inacio Lula da Silva decided to postpone implementation till June 2011.

The current debate primarily focuses on whether to reduce the legal reserve requirement from 80 percent and whether amnesty will be granted to all illegal deforestation activities practiced before July 2008 (after which date, those who deforested illegally would no longer be granted any legal permits). The environmental caucus believes that the Forest Code should remain untouched and that the reform represents a major setback for all climate change policies and that amnesty for illegal occupation of forest land amounts to an incentive to deforestation. Conversely, the rural caucus argues that the Forest Code dates back to the military regime and that it hampers Brazilian development since its agriculture trade competitors do not face such stringent legislation.

Since the new administration has come into office in 2011, the political debate around the Forest Code has continued with a new sense of urgency. In April a working group was established to discuss critical points, but there is still not a consensus about when the final vote will take place.

Renewable Energy

Renewable energy is a key driver of new climate change-related legislation in Brazil. This reality is clearly reflected in Brazil's prominent role in the development of biofuels. In addition, the country's focus on renewables is also to a large extent based on the promotion of hydropower. Hydropower is the main factor in the country's clean energy matrix. In this sense, the *National Plan on Climate Change* determines that Brazil should continue to generate more than 80% of its power from renewable energy sources through to 2030, and establishes a series of renewable energy and biofuels requirements. The plan brings forward the 5% biodiesel blending requirement of *Law Number 11097/2005* from 2013 to 2010, and promotes solar and wind energy. In addition, the Federal Programme of Incentives for Alternative Electricity Sources (PROINFA) created by *Law Number 10438/2002*, establishes comprehensive renewable measures that seek to increase Brazil's electricity generation from non-hydropower renewable energy sources.

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measures that seek to increase Brazil's electricity generation from non-hydropower renewable energy sources.

Brazil: Flagship Legislation

Name of Flagship Legislation	***Law No. 12187/ 2009 - National Policy on Climate Change (NPCC)***
Date of entry into force	December 29, 2009
Summary of bill	Creates the *NPCC* with the following key areas of concern: combining climate protection with socio-economic development; reducing anthropogenic GHG emissions from all its sources and strengthening GHG sinks; adaptation; preservation, conservation and recuperation of national biomes; land use and reforestation measures; and the development of a national cap-and-trade mechanism. The *NPCC* is based on Brazil's international commitment with the UNFCCC and incorporates all previous government instruments related to its key areas (i.e.: the National Plan on Climate Change, the National Fund on Climate Change and others).
Driver for implementation	Climate change, air pollution, deforestation and land use.
Putting a price on carbon	Foresees the establishment of the Brazilian Emissions Reduction Market (MBRE).
Emission reduction targets	Establishes voluntary carbon emission reduction targets of 36.1% to 38.9% of projected emissions by 2020 (in line with Brazil's position at COP15 in December 2009). Determines that projected emission reductions should be established by decree and based on the second Brazilian Inventory of Anthropogenic GHG Emissions and Reductions not Controlled by the Montreal Protocol, concluded in 2010. The Inventory has thus far identified four strategic sectors: 1) reduced emissions from deforestation of 24.7% in both scenarios (20.9% through action in the Amazon and 3.9% in the Cerrado); 2) reduced emissions from agriculture and livestock 4.9 to 6.1% (through innovative land-management practices, more efficient fertiliser use and increased pasture yields); 3) reduced energy emissions from 6.1 to 7.7% (through efficiency savings, biofuels use, hydropower and other renewables); 4) reduced use of forested charcoal in the steel sector from 0.3 to 0.4%.

Name of Flagship Legislation	***Law No. 12187/ 2009 - National Policy on Climate Change (NPCC)***
REDD^{+}/land use policies	Incorporates the National Plans for Prevention and Control of Deforestation in national biomes.
Research and development	Foresees the promotion and development of scientific and technological research concerned with mitigation and strengthening of carbon sinks; reduction of uncertainty in national and regional climate projections; and adaptation measures.

Brazil: Other Relevant Legislation

Name of Legislation	***Law No. 12305/2010 - National Policy on Solid Residues***
Date of entry into force	August 2, 2010
Summary of bill	This bill forms the *National Policy on Solid Residues* which promotes strategies to minimise the generation of solid residues, domestic sewerage, and industrial effluents, and to incentivise the selective collection, recycling and reuse of rubbish for the preservation of sanitary conditions and reduction of greenhouse gas emissions. Some of the policy's guiding principles are; prevention and precaution, the 'polluter pays' and the 'protector receives', sustainable development, and shared responsibility for product life cycle. The policy also seeks to promote, among other things, continued capacity building on solid residues; public-private technical and financial cooperation for the integrated management of solid residues; sustainable public procurement; and environmental labelling and consumption. It establishes measures to be implemented at the federal, state and municipal levels of government.
Driver for implementation	Waste Management and Climate Change
Research and development	The policy seeks to promote the adoption, development and improvement of clean technologies as a means of minimising the environmental impact of solid residues.

Name of Legislation	***Law No. 12144/ 2009 – National Fund on Climate Change (NFCC)***
Date of entry into force	December 9, 2009
Summary of bill	This bill creates the NFCC managed by the Ministry of Environment with the purpose of securing resources for projects, studies, and ventures that promote climate change mitigation and adaptation. It includes activities on climate change education and capacity building; climate science, impact assessment and vulnerability; sustainable supply chains; and payments for environmental services. The fund's financial agent is the Brazilian Development Bank. The bill alters *Law Number 9478-1997* on the National Energy Policy by channelling 60% of resources previously granted by the latter to the Ministry of Environment. In addition, the NFCC resources are to be derived from federal, state, and municipal administrations; grants from public and private, national and international entities; loans from national and international financial institutions; and interest and debt redemption on acquired financing.
Driver for implementation	Climate Change
Emission reduction targets	NFCC resources may be destined to emission reduction programmes.
REDD$^+$/land use policies	NFCC resources may be directed to REDD$^+$ projects, with priority being given to natural areas under threat as well as relevant biodiversity conservation strategies.
Research and development	The NFCC may fund activities related to the development and diffusion of technologies for the mitigation of greenhouse gas emissions. It may also fund research, the creation of project and inventory systems, methodologies that contribute to the reduction of liquid GHG emissions, and the reduction of emissions from deforestation and land use change.
Adaptation	NFCC resources may be channelled to society and ecosystem adaption to climate change

Name of Legislation	***Decree No. 6263/2007* - Inter-ministerial Committee on Climate Change (ICCC) and National Plan on Climate Change.**
Date of entry into force	*Federal Decree 6263*: November 21, 2007; National Plan on Climate Change: December 1, 2008
Summary of bill	*Federal Decree 6263/2007* creates the permanent ICCC charged with the development of the National Plan on Climate Change. This plan was officially launched at the COP14 in Poland; it focuses primarily on reducing emissions from deforestation and includes provisions on energy efficiency and on renewables. The plan is set to deal with: 1) mitigation; 2) vulnerability, impact and adaptation; 3) research and development; and 4) capacity building and promotion. *Law 12187/2009* integrated the plan into the National Policy on Climate Change.
Driver for implementation	Climate Change, Renewable Energy, Energy Efficiency
Monitoring arrangements	*Federal Decree 6263-2007* creates an Executive Group on Climate Change within the ICCC charged with the creating, monitoring, and evaluating the National Plan.
Energy - supply-side policies	More than 80% of the power base to be derived from renewable sources by 2030. It aims to: increase the share of electricity derived from wind and sugarcane bagasse plants; add a number of hydroelectric projects to the electricity network; expand the solar photovoltaic industry; promote the use of solar water heaters in the residential sector; as well as establish research on energy production from solid waste. The plan further encourages industrial users to increase their average consumption of ethanol by 11% in the next 10 years; brings forward the 5% biodiesel blending requirement from 2013 to 2010; and supports the creation of an international biofuels market.
Energy - demand-side policies	The Plan on Climate Change determines that a National Energy Efficiency Action Plan should be created to reduce electricity consumption by 10% by 2030 and to establish other measures such as incentives to replace old electric equipment with modern equipment, and create improvements in industry energy efficiency, transport and buildings.

Name of Legislation	***Decree No. 6263/2007* - Inter-ministerial Committee on Climate Change (ICCC) and National Plan on Climate Change.**
REDD/Land Use policies	Establishes that actions should be taken to eliminate total national forest cover loss by 2015. The plan sets targets for a consistent cut on deforestation to be accomplished in subsequent four-year periods. The goal is to reduce deforestation by 40% in the 2006-2009 period in relation to the Amazon Fund's 10 years reference period (1996-2005). This is followed by an additional 30% reduction in the 2010-2013 and 2014-2017 periods in relation to the previous 4-year period. These targets are to be accomplished through the provision of new and additional funding from national and international sources, including the Amazon Fund.
Transport policies	Promotes a sustainable increase in the use of biofuels in the national transportation network.
Adaptation	The National Plan establishes measures on adaptation to climate change.

Name of Legislation	***Federal Law No. 11097/2005*** **(amended in 2009 and 2010) – Mandatory Biodiesel Requirement**
Date of entry into force	January 13, 2005
Summary of bill	Establishes a series of biodiesel requirements with the purpose of stimulating the market for clean burning fuel. Biodiesel is a mixture of vegetable oil and sugarcane based ethanol.
Driver for implementation	Renewable Energy
Energy - supply-side policies	The 2005 revision of the law a mandates that by 2008 2% of diesel sold to consumers is biodiesel (B2 biodiesel), and that by 2013 5% is B2 biodiesel. The law was altered so that as of July 2008 all diesel had to contain 3% of biodiesel (B3). In July 2009, the mandatory blending was increased to 5% (B5) 3 years ahead of the original schedule.

Name of Legislation	***Law 10438/2002 – Programme of Incentives for Alternative Electricity Sources (PROINFA)***
Date of entry into force	April 26, 2002
Summary of bill	Creates PROINFA, the largest national plan to promote the use of alternative energy sources, as well as other programmes.
Driver for implementation	Renewable Energy
Energy - supply-side policies	PROINFA's implementation is coordinated by Eletrobras (a publicly traded company controlled by the Brazilian government) and divided into two consecutive stages. The first stage sets a target power production value of 3,300 MW from renewable energy including wind, biomass, and small hydroelectric sources. This target is to be reached by the end of 2007 through a system of subsidies and incentives drawn from an Energy Development Account. This is to be funded by end-use consumers through an increase in energy bills (with the exemption of low-income sectors) as well as by financing programmes available for renewable energy projects from the Brazilian National Development Bank (BNDES). The second stage establishes a target of increasing the electricity generated by these three renewable sources to 10% of annual consumption within 20 years. In addition, Renewable Energy Certificates that are proportional to the amount of clean energy produced by each plant should be issued in this second stage.

Name of Legislation	***Federal Law No.10294/2001 – National Conservation and Rational Energy Use Policy***
Date of entry into force	October 17, 2001
Summary of bill	Creates the National Conservation and Rational Energy Use Policy charged with ensuring the efficient allocation of energy resources and protecting the environment.
Driver for implementation	Energy Efficiency, Conservation
Monitoring arrangements	Determines that one year after the Executive Power publishes the required levels of energy consumption and efficiency, a Targets Programme should be established to monitor the progressive evolution of these levels.
Energy - demand-side policies	Charges the Executive Power with establishing maximum levels of energy consumption and minimum levels of energy efficiency for machines and energy consuming apparatus produced or traded in the country. It also obliges the producers and importers of these items to observe these requirements at the risk of being fined. Further charges the Executive Power with developing mechanisms to promote energy efficiency in buildings constructed after the commencement of the law.

Name of Legislation	***Federal Law No. 9985/2000/, Federal Decree No. 4340/2001 – National System of Conservation Units***
Date of entry into force	*Federal Law No. 9985*: July 18, 2000, *Federal Decree No. 4340*: August 22, 2002
Summary of bill	*Federal Law 9985/2000* regulates Article 25, Paragraph 1, of the Federal Constitution and creates the National System of Nature Conservation Units. It thereby establishes norms and criteria for the creation, implementation and management of conservation units. *Federal Decree 4340/2002* regulates several articles of the associated Federal Law and establishes provisions for its implementation.
Driver for implementation	Deforestation and Land Use
REDD/Land Use policies	Establishes the use, types and restrictions that apply to each category of conservation unit. Divides conservation units into two broad groups: Integral Protection Units intended to protect nature, permits the indirect use of natural resources (except for cases provided for in this Law); and Sustainable Use Units intended to reconcile the conservation of nature with the sustainable use of a portion of its natural resources. Integral Protection Units constitute the following conservation units: 1) Ecological Station, 2) Biological Reserve, 3) National Park, 4) Natural Monument and 5) Wild Life Refuge. Sustainable Use Units comprise of: 1) Area of Environmental Protection, 2) Area of Significant Ecological, 3) National Forest, 4) Extractive Reserve, 5) Fauna Reserve, 6) Sustainable Development Reserve, and 7) Reserve Particular to the Natural Heritage. The implementation of economic activities in these areas will depend on the conservation unit category in question as well as the respective uses permitted by law and by the unit's managing plan. It is also necessary to obtain a specific authorisation from the authority in charge of the protection unit.

4.2 Canada

4.2.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 722 734 +33.6%
Latest reporting year	2008
Importance as an emitter	top 10
Copenhagen Accord pledge (for 2020)	Reduction of 17% from 2005 levels by 2020.
Flagship legislation	Kyoto Protocol Implementation Act (2007)

4.2.2 Legislative Process

The Parliament of Canada is the federal legislative branch of Canada. It consists of the Senate and the House of Commons. In the Parliament of Canada, as in all legislative assemblies based on the British model, there is a clearly defined method for enacting legislation.

The lawmaking process starts with a bill, which can be introduced in the House of Commons (C-bills) or the Senate (S-bills). Most public bills which concern matters of public policy such as taxes and the environment begin in the Commons. A bill goes through certain formal stages in each house. The stages include a series of three 'readings' during which parliamentarians debate the bill. Prior to the third and final reading, each house also sends the bill to a committee where members examine the finer points of the legislation. Committee members listen to witnesses who give their opinions on the bill, and then subject it to a clause-by-clause study based on the testimony. All laws of Canada are formally enacted by the Sovereign, 'by and with the advice and consent' of the Senate and House of Commons. Once both houses have approved a bill, it is presented for Royal Assent and becomes law.

The constitution divides the legislative abilities of Canada between the federal and provincial governments. Provincial legislatures may pass laws relating to topics explicitly reserved for them by the constitution.

4.2.3 Climate Legislation and Regulation

Climate Change

Canada has no recent comprehensive federal climate change legislation. The closest they have is an act to implement Canada's targets under the Kyoto Protocol during the first commitment period of 2008-2012. There have been attempts to pass more comprehensive and longer-term climate change legislation, the most significant being the *Climate Change Accountability Act* (Bill C-311), which passed the House of Commons in May 2010 but did not pass the Senate. This bill would have required the federal government to set regulations to attain a medium-term target to bring GHG emissions 25% below 1990 levels by 2020, and a long-term target to bring emissions 80% below 1990 levels by 2050. The bill would also have allowed the government to establish regulations to meet these targets and set penalties for those that violate the regulations (for example, the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations published in October 2010).

The reduction targets in the Bill were proposed by 'Turning the Corner: Action Plan to Reduce Greenhouse Gases and Air Pollution', the Conservative Party's climate change plan announced in April 2007. Indeed, 'Turning the Corner' provided the ground work for Canada's approach to tackling climate change. Canada's priority is to realign its policies and regulations in order to maintain economic prosperity while protecting the environment and harmonising its regulatory framework with the United States, its largest trading partner. According to the action plan, the regulations will require intensity-based targets for a variety of industrial sectors of 6% each year between 2007 and 2010, with a further 2% intensity-reduction each year to 2015.

Despite the lack of comprehensive federal legislation in Canada, Canadian provinces have been very active in passing their own climate legislation. For instance, Ontario released its climate change plan in August 2007 (Ontario, Ministry of Environment, Go Green: Ontario's Action Plan on Climate Change). This plan includes targets for reducing GHG emissions below 1990 levels by 2014, a major investment in public transit, job creation in clean technology sector, public investments in development of renewable energy and tree planting initiatives. Alberta's climate change plan also relies upon intensity-based targets, with a commitment to reducing GHG emissions intensity by 50% by 2050 (Alberta, Ministry of Environment, Alberta's 2008 Climate Change Strategy: Responsibility, Leadership, Action). It relies on energy efficiency, carbon capture and storage, and renewable energy production.

Energy

Canada has implemented minimum energy performance standards for a number of products since the approval of the *Energy Efficiency Act* in 1992. The most recent amendments modernise the act by increasing its scope and effectiveness. The amendments also require Canada's Minister of Natural Resources to submit an energy efficiency progress report to Parliament every three years. This report will compare the stringency of energy-efficiency standards in Canada with those in other North American jurisdictions.

Canada: Flagship Legislation

Name of Legislation	***Kyoto Protocol Implementation Act***
Date of entry into force	June 22, 2007
Summary of bill	The purpose of this Act is to ensure that Canada takes effective and timely action to meet its obligations under the Kyoto Protocol and help address the problem of global climate change.
Driver for implementation	Climate Change
Monitoring arrangements	By 31 May each year, until 2013, the Minister for the Environment must prepare a climate change plan that includes the measures to be taken, a projection of Canada's emissions for each year from 2008-2012, taking into account the measures to be taken. The Minister must also prepare a statement indicating whether each measure proposed in the Climate Change Plan for the previous calendar year has been implemented by the date projected in the Plan and, if not, an explanation of the reason why the measure was not implemented and how that failure has been or will be redressed.

Canada: Other Relevant Legislation

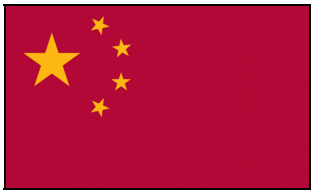
Name of Legislation	***Biofuel Bill C-33: An Act to amend the Canadian Environmental Protection Act***
Date of entry into force	26 June 2008
Summary of bill	The bill seeks to amend the *Canadian Environmental Protection Act 1999* with respect to provisions for the regulation of fuels. The bill is designed to establish a framework within which the Government can regulate biofuels content. This would include the tracking of exports to make accurate calculations of the volume of renewable fuels as a percentage of the total fuel used in Canada, and the lifting of administrative burdens that would be placed on small producers and importers as with the new regulation.
Driver for implementation	Renewable Energy
Emission reduction targets	It allows the federal government to implement regulations requiring 5% average renewable content in gasoline by 2010. Subsequent regulations will also require 2% average renewable content in diesel and heating oil by 2012 on successful demonstration of renewable diesel fuel use under the range of Canadian environmental conditions.

Name of Legislation	***Greenhouse Gas Technology Investment Fund Act***
Date of entry into force	Enacted in 2005, c. 30, s. 96, not in force
Summary of bill	An Act to establish the Greenhouse Gas Technology Investment Fund for the reduction of greenhouse gas emissions and the removal of greenhouse gases from the atmosphere.
Driver for implementation	Climate Change

Name of Legislation	***Canada Foundation for Sustainable Development Technology Act***
Date of entry into force	June 14, 2001
Summary of bill	This Act establishes a not-for-profit foundation that finances and supports the development and demonstration of clean technologies which provide solutions to issues of climate change, clean air, water and soil quality, and which deliver economic, environmental and health benefits to Canadians.
Driver for implementation	Research and development on solutions to issues which include climate change
Monitoring arrangements	The foundation shall, within five months after the end of each fiscal year, prepare an annual report in English and French of its activities during the preceding fiscal year. The report is to include: (a) the foundation's financial statements for the year as approved by the board and the report of the auditor respecting those statements; (b) a detailed statement of its investment activities during the year, its investment portfolio as at the end of the year and its investment policies, standards and procedures; (c) a detailed statement of its funding activities; (d) a statement of its plans for fulfilling its objects and purposes for the next year; and (e) an evaluation of the overall results achieved by the funding of eligible projects by the foundation during the year in review, and since the inception of the foundation.

Name of Legislation	***Energy Efficiency Act***
Date of entry into force	1992; regulations made under the Act have been amended a number of times, most recently in 2008, to expand the list of products covered by the Act and enhance standards for some products already in place.
Summary of bill	The Act aims to establish minimum energy efficiency standards for a broad range of products and equipment in order to decrease overall Canadian energy consumption. It gives the Government of Canada the authority to make and enforce standards for the performance of energy using products that are imported into Canada, or that are manufactured in Canada and shipped across provincial or territorial borders. The act also gives the federal government the authority to set labelling requirements for these products so consumers can compare the energy efficiency of various models of the same product.
Driver for implementation	Energy Efficiency
Monitoring arrangements	1. A database would be used to identify the amount of energy that could be saved for specific products. It would also help in compiling statistics on energy consumption as well as develop alternative energy sources 2. The standard penalty for importing into Canada, or trading between provinces, products that do not meet such energy efficiency standards, or tapering with an energy efficiency label, is a criminal offence. 3. Failure to comply with regulations will result in the possibility of prosecution, fines and secondary offences.

4.3 China



4.3.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 3,650 4,057 n/a
Latest reporting year	1994
Importance as an emitter	top 3
Copenhagen Accord pledge (for 2020)	Lower CO_2 emissions per unit of GDP by 40-45 by 2020 compared to the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020 and increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels
Flagship legislation	**National Climate Change Programme 2007**

4.3.2 Legislative Process

China's legal system is largely a civil law system. The national legislative power is exercised by the National People's Congress (NPC) and the Standing Committee of the National People's Congress. The NPC is in responsible for criminal law, civil law, state organ law and other basic laws. While the NPC is not in session, the Standing Committee of the NPC is responsible for supplementing and amending parts of the laws promulgated by the NPC, provided they do not contradict with the basic principles of these laws. There is not a division of legislative power between the central government and the provincial governments in China.

4.3.3 Climate Legislation and Regulation

China's stance in combating climate change is in its early stages, and currently focuses mainly around energy-related laws. Climate change was first officially referred to in legislation or regulations by the Chinese government in China's National Climate Change Programme of 2007, and repeated in China's Policies and Actions for Addressing Climate Change 2008. In 2009, the National Peoples Congress passed a comprehensive Climate Change Resolution. All of these are not strictly laws but policy

documents guiding legislation.

Although there is not yet a comprehensive Climate Change Bill in China, Congressman Wang Guangtao (Chair of the Environment Protection and Resources Conservation Committee of the National Peoples Congress) made the announcement, on 7 November 2010 at the GLOBE International legislators forum in Tianjin, that China would begin work on a comprehensive climate change law. It is expected that the law will take 1-2 years to develop. In the meantime, China's domestic climate-related laws are dominated by a focus on energy saving, reflecting the need for the country to improve energy efficiency to enable it to keep pace with energy demand as the economy grows strongly.

In that context, China has already passed the *Energy Conservation Law of the People's Republic of China* (*Energy Conservation Law*), and the 2005 *Renewable Energy Law of the People's Republic of China* (*Renewable Energy Law*) and is planning a new *Energy Law of the People's Republic of China.* The draft *Energy Law* contains provisions on the promotion of clean energy and energy efficiency. The goals are relatively vague with clearer targets expected to be set by ministries, including the National Development and Reform Commission (NDRC), Ministry of Construction, Ministry of Agriculture, Ministry of Transportation, the Bureau for Tax and others.

Most recently, March 2011 saw the publication of China's 12th Five-Year Plan. The Plan includes a target to reduce the carbon intensity of its GDP by 40-45% from 2005 levels by 2020, increases the number of pollutants included in the 'total emissions control' system and sets new targets for the energy intensity of GDP (a reduction of 16 per cent by 2015), the percentage of non-fossil fuel energy (to increase to 11.4 per cent by 2015 from 8 per cent in 2011) and an increase in forest coverage of 21.6 per cent. The specific policies and mechanisms required to implement these targets will be developed by ministries and provinces.

China: Flagship Legislation

Name of Flagship Legislation	**National Climate Change Programme**
Date of entry into force	04/06/2007 issued by the National Development and Reform Commission
Summary of bill	This is a policy document and the government's position was repeated in two other policy papers 'China's Policies and Actions for Addressing Climate Change 2008' and 'National Peoples Congress Climate Change Resolution 2009'. The document indicated that the Chinese government acknowledged the importance of addressing climate change and the need to adopt measures. The document covered five issues: GHG mitigation; adaptation; climate change science and technology; public awareness on climate change; and institutions and mechanisms. Concerning mitigation, the focus is on energy production and transformation, energy efficiency improvement and energy conservation, industrial processes, agriculture, and forestry and municipal waste. Regarding energy production and transformation, measures aim to strengthen the existing energy legal system, improve the national energy programme, implement the Renewable Energy Law, promote favourable conditions for renewable energy development and GHG mitigation, stimulate energy price reform, optimise the energy mix, and promote innovation and efficiency improvements in various power generating technologies, both renewable and non-renewable, including nuclear power. All these policies are expected to have a major influence on the energy and utilities sectors. Chinese leaders essentially equate climate change with energy conservation.
Driver for implementation	Energy Conservation
Monitoring arrangements	China promoted a number of policies and measures to adjust the economic structure, change the development patterns, save energy and improve energy efficiency, optimise energy mix and promote afforestation.

Name of Flagship Legislation	**National Climate Change Programme**
Emission reduction targets	The government plan to cut energy waste by 20% between 2006 and 2010. It also set an ambitious goal for using renewable energy, a 10% raise in the proportion of renewable energy in primary energy supply by 2010. It also aims to; stabilise the 2005 nitrous oxide emission level, increase the 2001 forest coverage rate by 20%, and increase the carbon sink by 50 Mt over the 2005 level by 2010.

China: Other Relevant Legislation

Name of Legislation	***Renewable Energy Act***
Date of entry into force	Promulgated by the Standing Committee of the National People's Congress, February 28, 2005, effective January 1, 2006, amended December 26, 2009.
Summary of bill	This Act described duties of the government, business and other users in renewable energy development and utilisation. It also included a series of measures and goals, relating to mandatory grid connection, price management regulation, differentiated pricing, special funds and tax reliefs, and it set the goal to realise 15% of China's energy from renewable sources by 2020.
Driver for implementation	Renewable Energy
Monitoring arrangements	Article 6 requires that energy authorities of the State Council are responsible for organising and coordinating national surveys and management of renewable energy resources, and work with related departments to establish technical regulations for resource surveys. Relevant departments of the State Council, within their respective authorities, are responsible for related renewable energy resource surveys. The survey results will be summarised by the energy authority in the State Council.
Emission reduction targets	Article 7 requires that energy authorities of the State Council sets middle and long-term target of the total volume for the development and utilisation of renewable energy at the national level, which shall be implemented and released to the pubic after being approved by the State Council.
Energy - supply-side policies	The Act requires the government to encourage and support the application of renewable energy in various areas.
Research and development	Article 24 requires the Government budget establishes renewable energy development fund

Name of Legislation	***Energy Conservation Law***
Date of entry into force	November 1, 1997 adopted; 28 October, 2007 first amended; 2008 amended
Summary of bill	The Act aims to strengthen energy conservation, particularly for key energy-using entities, promote rational utilisation of energy and advancement of energy conservation technology.
Driver for implementation	Energy Conservation; Energy Efficiency
Monitoring arrangements	National Peoples Congress
Emission reduction targets	Article 6 requires the state to implement a system of accountability for energy conservation targets and a system for energy evaluation whereby the fulfilment of energy conservation targets is taken as one part of the evaluation of local people's governments and their responsible persons.
Energy - demand-side policies	Article 4 states that Energy Conservation is a basic policy of China. The State implements an energy strategy of promoting conservation and development concurrently while assigning the highest priority to conservation.

Name of Legislation	**The 12th Five-Year Plan for the Development of National Economy and Society (2011-2015)**
Date of entry into force	Promulgated by the National People's Congress, 12 March 2011
Summary of bill	The Five-Year Plan for National Economic and Social Development, or the Five-Year Plan, aims to create more socially inclusive and environmentally sustainable growth and boost domestic consumption that will begin to re-orientate the Chinese economy away from heavy industry and resource-intensive production towards a more consumption-based and resource-efficient economy.
Driver for implementation	Economic and Social Development
Monitoring arrangements	National Peoples Congress
Emission reduction targets	Targets to decrease the carbon intensity of GDP by 17 per cent by 2015; to decrease the energy intensity of GDP by 16 per cent; to increase the share of non-fossil fuel primary energy consumption to 11.4 per cent; and to increase forest coverage by 21.6 per cent.

4.4 European Union

4.4.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 4,530 4,940 -13.3%
Latest reporting year	2008
Importance as an emitter	top 3
Copenhagen Accord pledge (for 2020)	20% from 1990 unilaterally; move to 30% as part of a global and comprehensive agreement for the period beyond 2012 and provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities
Flagship legislation	Climate and Energy Package (CARE) (2008)

4.4.2 Legislative Process

Decision-making at the European Union (EU) level involves mainly the European Commission (independent from national governments), the European Parliament (elected by EU citizens) and the Council of the European Union (main decision making body, represents member states). Most often, the European Commission proposes new legislation, but it is the Council and Parliament that pass the laws.

The main forms of EU laws are directives and regulations. Adopted by the Council in conjunction with the European Parliament or by the Commission alone, a 'regulation' is a general measure that is binding in all its parts, is directly applicable in the member states and is addressed to everyone. Adopted by the Council in conjunction with the European Parliament or by the Commission alone, a 'directive' is addressed to the Member States. Its main purpose is to align national legislation. It is binding as to the result to be achieved but leaves states the choice of the form and method they adopt to achieve it. The commission is required to verify that member states transpose correctly and in due time the different directives that have been adopted and can sanction them. Other instruments include decisions, recommendations, opinions, and

joint actions.

The commission can also publish 'Action plans', 'white papers' and 'green papers'. A White Paper sets out the Commission's policy programme in a specific area. Before a White Paper is written, a Green Paper is published, which is a consultative document including suggestions and options for new policy. However, each single proposal for legislation announced in a White Paper or deriving from a policy initiative announced in it will be subject to one or more rounds of open consultation and impact assessment. They can thus be useful to identify future Commission's proposals.

4.4.3 Climate change Legislation and Regulation

EU legislation on climate change has been characterised by a strategy of cooperation with the international community, compliance with the Kyoto Protocol and a will to maintain leadership in terms of ambitious targets and emission reduction mechanisms. This 'international dimension' is illustrated by the decision to adopt a 30% emission reduction target below the 1990 level (instead of 20% reduction target that is currently in place) provided that other industrialised nations commit themselves to comparable emission reductions and that 'advanced developing countries' (i.e. China and India) also contribute under the framework of a post-2012 agreement.

These targets are to be achieved through several pieces of legislation promoting more 'energy efficient' products and uses**.** They include the directive on Energy performance of buildings (2002/91/EC) which has recently been extended, the legislation on the Eco-design requirements for energy-using products (2005/32/EC) and the Biofuel directive (2003/30/EC) which sets targets to member states. The transportation sector is also a key area where EU legislation attempts to reduce emissions and achieve energy efficiency. It has recently set emission performance standards for new passenger cars (Regulation (EC) No 443/2009) and supports the research and development of clean vehicles (Directive 2009/33/EC).

The EU has also put in place European certification schemes, subsidies and other incentive mechanisms at the community level to support the use of renewable energy (Directive 2001/77/EC; Directive 2009/28/EC).

A key component of EU climate legislation is the 'Emission Trading System' (ETS) that entered into force in 2005 (Directive 2003/87/EC) in order to help reach the targets agreed at Kyoto. This mechanism has been amended several times to extend it to new sectors (for example, aviation: Directive 2008/101/EC) or to new GHGs (petrochemicals, ammonia and aluminium, nitrous oxide and perfluorocarbons: Directive 2009/29/EC). In parallel, the EU has set up a Mechanism for monitoring greenhouse gas emissions (Decision 280/2004/EC) to enable more accurate and regular evaluation of the emissions reduction progress.

Most recently, the EU has adopted the 'Climate and Energy Package (CARE package)' that entered into force in June 2009. The package illustrates the integrated approach of the EU and proposes binding legislation to implement the 20-20-20 targets: 20%

emission reduction; 20% EU energy consumption from renewable energies; and 20% reduction in primary energy use compare with projected level through energy efficiency improvement. This ambitious package is based on an extension and revision of the ETS (Directive 2009/29/EC), an Effort-sharing Decision (Decision 406/2009/EC) between member states taking into account respective capacities, national targets for renewable energy (Directive 2009/28/EC) as well as the promotion of Carbon Capture and Storage (Directive 2009/31/EC).

EU: Flagship Legislation

Name of Legislation	**The EU climate and energy package (CARE) (contains 3 directives and 1 decision; see below)**
Date of entry into force	2009
Summary of bill	In March 2007 the EU's leaders endorsed an integrated approach to climate and energy policy that aims to combat climate change and increase the EU's energy security while strengthening its competitiveness. In January 2008 the European Commission proposed binding legislation to implement the 20-20-20 targets. This 'climate and energy package' was agreed by the European Parliament and Council in December 2008 and became law in June 2009. The core of the package comprises four pieces of complementary legislation.
Driver for implementation	Climate Change
Emission reduction targets	The 20-20-20 targets: a reduction in EU greenhouse gas emissions of at least 20% below 1990 levels; 20% of EU energy consumption to come from renewable resources; and a 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency. The EU leaders also offered to increase the EU's emissions reduction to 30%, on condition that other major emitting countries in the developed and developing worlds commit to do their fair share under a global climate agreement. Member States shall limit their greenhouse gas emissions between 2013 and 2020 according to a linear trajectory with binding annual targets. This will ensure a gradual move towards the 2020 targets in sectors where changes take time to implement, such as buildings, infrastructure and transport. To increase the cost-effectiveness of policies and measures, Member States are allowed to deviate from the linear trajectory to a certain degree.

Name of Legislation	**Improve and extend the greenhouse gas emission allowance trading scheme** (Directive 2009/29/EC) (amending Directive 2003/87/) **-- CARE 1**
Date of entry into force	2009
Summary of bill	A revision and strengthening of the Emissions Trading System (EU ETS).
Driver for implementation	Climate Change
Putting a price on carbon	A single EU-wide cap on emission allowances will apply from 2013 and will be cut annually, reducing the number of allowances available to businesses to 21% below the 2005 level in 2020. The free allocation of allowances will be progressively replaced by auctioning. From 1 January 2013 (phase III of EU ETS, 2013-2020), the revised ETS will incorporate new sectors; petrochemicals, ammonia and aluminium, nitrous oxide and perfluorocarbons. Smaller emitters (<25,000 tCO_2/year) may opt out of the EU ETS. One of the measures requires that by 31 December 2009 the Commission determines the sectors or sub-sectors deemed to be exposed to a significant risk of carbon leakage. According to the Directive, production from sectors deemed to be exposed to a significant risk of carbon leakage will receive relatively more free allowances than other sectors. In 2008 and 2009, the Commission held five stakeholder meetings on the subject of carbon leakage. The revised Directive also recognises that the competitive situation, and thus the risk of carbon leakage, may change in case there is an international climate change agreement. The Commission first consulted the stakeholders on the analytical report and its preliminary conclusions at an ad-hoc meeting of the European Climate Change Programme (ECCP) working group on emissions trading on 17 March 2010. The consultation continues.

Name of Legislation	**An 'Effort Sharing Decision'** (**Decision No 406/2009/EC) – CARE 2**
Date of entry into force	2009
Summary of bill	It aims to reduce greenhouse gas emissions from sectors not included in the EU Emission Trading System (EU ETS) such as transport, buildings, agriculture and waste.
Driver for implementation	Climate Change
Emission reduction targets	The overall goal is 10% reduction of emissions from the non-ETS sectors in 2020 compared with 2005 levels. Under the Decision each Member State has agreed to a binding national emissions limitation target for 2020 that reflects its relative wealth. The targets range from an emissions reduction of 20% by the richest Member States, to an increase in emissions of 20% by the poorest. These national targets will cut the EU's overall emissions from the non-ETS sectors by 10% by 2020 compared with 2005 levels. Member States may transfer unused emission allocations to the following year or to other Member States and purchase a proportion of credits from third countries.

Name of Legislation	**Promotion of the use of energy from renewable sources** -- **CARE 3** (Directive 2009/28/EC)
Date of entry into force	2009
Summary of bill	Establishes a common framework for the production and promotion of energy from renewable sources.
Driver for implementation	Renewable Energy/Climate Change
Monitoring arrangements	The directive requires Commission reporting from 2012 with an impact and implementation review in 2014.
Energy - supply-side policies	Binding national targets for renewable energy that collectively will lift the average renewable share across the EU to 20% by 2020. Each Member State has a mandatory national target for the overall share of renewable energy in gross final consumption of energy for 2020, divided across Member States based on existing scale of effort and GDP. The national targets range from a share of 10% in Malta to 49% in Sweden. There are rules for determining the trading or offsetting of target requirements both within Europe and with third countries. Member States can 'exchange' an amount of energy from renewable sources using a statistical transfer, and set up joint projects. Under certain conditions it is also possible to establish cooperation with third countries The Directive takes into account energy from biofuels and bio-liquids. The latter should contribute to a reduction of at least 35% of greenhouse gas emissions in order to be recognised. From 1 January 2017, their share in emissions savings should be increased to 50 %.
REDD/Land Use policies	Commission to assess the inclusion of emissions and removals related to land use, land use change and forestry (LULUCF) – anticipated to follow up on any international agreement on forestry and deforestation.
Transport polices	Member States should build the necessary infrastructure for energy from renewable sources in the transport sector. The share of energy from renewable sources in the transport sector must amount to at least 10% of final energy consumption in the sector by 2020.

Name of Legislation	**Promotion of the use of energy from renewable sources** -- **CARE 3** (Directive 2009/28/EC)
Mainstreaming climate change	The Member States are required to establish national action plans which set the share of energy from renewable sources consumed in transport, as well as in the production of electricity and heating, for 2020. These action plans must take into account the effects of other energy efficiency measures on final energy consumption (the higher the reduction in energy consumption, the less energy from renewable sources will be required to meet the target). These plans will also establish procedures for the reform of planning and pricing schemes and access to electricity networks, thereby promoting energy from renewable sources.

Name of Legislation	**Geological storage of carbon dioxide – CARE 4** (Directive 2009/31/EC)
Date of entry into force	2009
Summary of bill	The Directive establishes a legal framework for the environmentally safe geological storage of CO_2. It covers all CO_2 storage in geological formations in the EU, and lays down requirements covering the entire lifetime of a storage site. It implements a permit regime for exploration and storage, and selection criteria for storage sites
Driver for implementation	Climate Change
Monitoring arrangements	There are monitoring and reporting obligations, inspections, measures in case of irregularities and/or leakage and provision of financial security. Site selection is the crucial stage for ensuring the integrity of a project and the Directive lays down extensive requirements. A site can only be selected for use if a prior analysis shows that, under the proposed conditions of use, there is no significant risk of leakage or damage to human health or the environment. The operation of the site must be closely monitored and corrective measures taken in the case that leakage does occur. In addition, the Directive contains provisions on closure and post-closure obligations, and sets out criteria for the transfer of responsibility from the operator to the Member State.
Putting a price on carbon	Key relationship between carbon, capture and storage (CCS) and the EU ETS in terms of finance and also that CO_2 captured and stored will be considered as 'not emitted'.
Research and development	Key debate will be linked to finance of CCS both in terms of support from EU and national funds and recycling of revenues from the EU ETS. Money has been set aside to fund up to twelve CCS demonstration projects and innovative renewable energy technologies demonstration projects. In addition, the European Economic Recovery Programme allocated around €1 billion to fund six CCS demonstration projects.

EU: Other Relevant Legislation

Name of Legislation	**White paper – Adapting to climate change: towards a European framework for action** (Communication COM/2009/0147)
Date of entry into force	Published 2009
Summary of bill	The European Commission presented a White Paper on adapting to climate change that presents the framework for adaptation measures and policies to reduce the European Union's vulnerability to the impacts of climate change. As a next step, the Commission will present a 'Blueprint to Safeguard European Waters' by 2012, which together with the analysis of all plans for 110 river basin districts, will perform a review of the Strategy for Water Scarcity and Droughts and of the vulnerability of water and environmental resources to climate change and man-made pressures.
Driver for implementation	Adaptation
Mainstreaming climate change	Successful adaptation to the impacts of climate change on water depends not just on effective national and European water regulations, but also on the extent to which water management can be integrated into other sectoral policies such as agriculture, energy, cohesion and health.
Adaptation	The White Paper highlights the need "to promote strategies which increase the resilience to climate change of health, property and the productive functions of land, inter alia by improving the management of water resources and ecosystems.". As part of the actions included in the White Paper, in December 2009 Water Directors of EU Member States adopted a Guidance document on adaptation to climate change in water management to ensure that the River Basin Management Plans (RBMP) are climate-proofed.

Name of Legislation	**Emission performance standards for new passenger cars** (Regulation (EC) No 443/2009)
Date of entry into force	2009
Summary of bill	This legislation sets emission performance standards for new passenger cars
Driver for implementation	Transport / emissions
Monitoring arrangements	Commission to report on implementation by 2010 and to publish performance indicators for each manufacturer, highlighting success or failure to comply (by 31 October each year, beginning in 2011). Until 2018 the manufacturer has to pay an excess emissions premium for each car registered if the average CO_2 emissions of a manufacturer's fleet exceed its limit value in any year from 2012..
Emission reduction targets	Car manufacturers must ensure their average annual CO_2 emissions do not exceed 130g CO_2/km. A target of 95g/km is specified for the year 2020. The modalities for reaching this target and the aspects of its implementation including the excess emissions premium will have to be defined in a review to be completed no later than the beginning of 2013.
Transport polices	In 2012, 65% of each manufacturer's newly registered cars must comply on average with the limit value curve set by the legislation. This will rise to 75% in 2013, 80% in 2014, and 100% from 2015 onwards.

Name of Legislation	**Clean and energy-efficient road transport vehicles** (Directive 2009/33/EC)
Date of entry into force	2009
Summary of bill	This Directive contributes to the European targets for energy efficiency and the reduction of pollutant emissions in the transport sector. It establishes a framework to foster the promotion and development of a market for clean vehicles.
Driver for implementation	Transport/ Energy Efficiency
Transport polices	Member States shall ensure that contracting authorities, contracting entities and operators under a public service contract, take into account the operational lifetime energy and environmental impacts when purchasing road transport vehicles.

Name of Legislation	**Clean Sky JTI** (Council Regulation (EC) (No 71/2008)
Date of entry into force	2008
Summary of bill	The 'Clean Sky' Joint Technology Initiative (JTI) is aiming to unite the public and private driving forces (human and financial) in European aviation and to develop the technologies necessary for a clean, innovative and competitive system of air transport, through research
Driver for implementation	Economy/transports
Emission reduction targets	, 'Clean Sky' aims to reduce CO_2 emissions by 50% and NOx by 80%

Name of Legislation	**Seventh Framework Programme** (2007 to 2013)(Decision No 1982/2006/EC)
Date of entry into force	2007
Summary of bill	The 7th Framework Programme is adapted to the EU's needs in terms of growth and employment. After wide-ranging public consultation, four main objectives have been identified which correspond to the four specific programmes around which the European research effort is to be structured. Environment, including climate change and energy, is identified as key research areas.
Driver for implementation	Economy
Research and development	Environment including climate change and energy are identified as key research areas.

Name of Legislation	**Reduction in fluorinated greenhouse gases** (Regulation (EC) No 842/2006)
Date of entry into force	2006
Summary of bill	The Regulation is aimed at reducing emissions of certain fluorinated gases (HFCs, PFCs and sulphur hexafluorides), to improve containment and monitoring of these gases and restrict their marketing and use.
Driver for implementation	Climate Change
Monitoring arrangements	Commission to report on application of this Regulation by 4 July 2011. By 31 March 2008, and every year thereafter, anyone producing, importing or exporting more than one tonne of any of fluorinated greenhouse gases must communicate the imported or exported amount produced, , the applications in which they will be used including the expected emissions, and the amounts recycled, reclaimed or destroyed.
Emission reduction targets	The Regulation should lead to a reduction in emissions of 23 million tonnes of carbon dioxide equivalent by 2010, and an even greater reduction thereafter.

Name of Legislation	**Action Plan for Energy Efficiency (2007-12)** (Action Plan for Energy Efficiency: Realising the Potential [COM(2006)) 545
Date of entry into force	2006
Summary of bill	This plan replaces the Action plan for energy efficiency 2000-2006. The Commission has adopted an Action Plan aimed at achieving a 20% reduction in energy consumption by 2020. The Action Plan includes measures to: improve the energy performance of products, buildings and services; improve the yield of energy production and distribution; reduce the impact of transport on energy consumption; facilitate financing and investments in the sector; encourage and consolidate rational energy consumption behaviour; and increase international action on energy efficiency.
Driver for implementation	Energy efficiency
Monitoring arrangements	In 2012, the European Commission will assess the progress achieved by the Community and Member States with regard to the implementation of the Action Plan for Energy Efficiency that lays down the first objectives for emission reductions by 2020. Following this assessment, the Commission will propose strengthened or new measures.

Name of Legislation	**Competitiveness and Innovation Framework Programme** (CIP) (2007-2013)
Date of entry into force	2006
Summary of bill	The programme supports measures to strengthen competitiveness and innovation capacity in the European Union. Particularly, it encourages the use of information technologies, environmental technologies and renewable energy sources.
Driver for implementation	Economic/Research and development
Energy - supply-side policies	The Intelligent Energy – Europe Programme helps speed up efforts to achieve the objectives in the field of sustainable energy. It supports improvements in energy efficiency, the adoption of new and renewable energy sources, greater market penetration for these energy sources, energy and fuel diversification, and an increase in the share of renewable energy.

Name of Legislation	**Energy end-use efficiency and energy services**. Directive 2006/32/EC (repealing Council Directive 93/76/EEC)
Date of entry into force	2006
Summary of bill	The purpose of the Directive is to make the end use of energy more economic and efficient by: Establishing indicative targets, incentives and the institutional, financial and legal frameworks needed to eliminate market barriers and imperfections which prevent efficient end use of energy; Creating the conditions for the development and promotion of a market for energy services and for the delivery of energy-saving programmes and other measures aimed at improving end-use energy efficiency. The Directive applies to the distribution and retail sale of energy and the delivery of measures to improve end-use energy efficiency. Activities included in the greenhouse gas emissions trading scheme and certain aspects of the armed forces are excepted.
Driver for implementation	Energy efficiency
Mainstreaming climate change	Member States must adopt and achieve an indicative energy saving target of 9% by 2016 in the framework of a national energy efficiency action plan (NEEAP). Member States must also set themselves an intermediate national indicative target to be achieved by 2009. Member States must ensure that the public sector adopts measures to improve energy efficiency, inform the public and businesses of the measures adopted and promote the exchange of good practice. Member States must appoint one or more new or existing organisations to carry out administrative, management and implementation duties in order to meet their obligations. MS required to develop a series of National Energy Efficiency Action Plans. The first action plan is due on the 30th of June 2007; the second action plan is due on the 30th of June 2011; while the third action plan is due

Name of Legislation	**Energy end-use efficiency and energy services**. Directive 2006/32/EC (repealing Council Directive 93/76/EEC) on the 30th of June 2014.

Name of Legislation	**Eco-design requirements for energy-using products** (Directive 2005/32/EC) (Recast Proposal COM((2008)399)
Date of entry into force	2005
Summary of bill	The directive 2005/32/EC aims to establish a coherent framework for eco-design requirements applied to energy-using products. Mandatory minimum requirements are set for products taking account of life cycle costs. The extension expanded the directive's scope to encompass all energy related products.
Driver for implementation	Energy efficiency
Energy - demand-side policies	The agreed directive defines the conditions, criteria and methodology for the Commission to adopt eco-design requirements for specific products using the fast-track comitology procedure. In addition, the directive will apply to any product using energy, except motor vehicles; however, it does not create legal obligations for manufacturers, unless implementing measures are adopted.

Name of Legislation	**Mechanism for monitoring greenhouse gas emissions** (Decision 280/2004/EC)
Date of entry into force	2004
Summary of bill	The European Union has established a new mechanism for monitoring and reporting greenhouse gas emissions to evaluate more accurately and more regularly the progress made in reducing emissions
Driver for implementation	Climate
Monitoring arrangements	The Decision establishes a mechanism designed to: Monitor, in the Member States, all anthropogenic greenhouse gas emissions (including their removal by sinks) not controlled by the Montreal Protocol on substances that deplete the ozone layer; evaluate progress made in this field to ensure compliance with the Community's commitments concerning emissions and their removal; and to ensure that information reported by the Community to the UNFCCC Secretariat is complete, accurate, consistent, transparent and comparable.
Mainstreaming climate change	The Member States and the Community must devise, publish and implement national programmes and a Community programme to limit or reduce anthropogenic emissions by sources, and enhance the removal by sinks, of all greenhouse gases not controlled by the Montreal Protocol. The national programmes must include information on: the effect of national policies and measures on emissions and removals, broken down by gas and by sector; national projections for emissions and removal of CO_2 and other greenhouse gases for 2005, 2010, 2015 and 2020; measures being taken or planned to implement relevant Community policies; and to comply with commitments under the Kyoto Protocol.

Name of Legislation	**Cogeneration.** Directive 2004/8/EC (amending Directive 92/42/EEC.)
Date of entry into force	2004
Summary of bill	The purpose of this Directive is to facilitate the installation and operation of electrical cogeneration plants (a technology allowing the production of heat and electricity in one process) in order to save energy and thereby combat climate change.
Driver for implementation	Energy efficiency
Monitoring arrangements	Following a request by the Commission at least six months before the due date, Member States must evaluate progress towards increasing the share of high-efficiency cogeneration for the first time by the 21st of February 2007 at the latest and thereafter every four years.
Energy - supply-side policies	In the short term, the Directive should make it possible to consolidate existing cogeneration installations and promote new plants. In the medium to long term, the Directive should serve as a means to create the necessary framework for high efficiency cogeneration, aimed at reducing emissions of CO_2.

Name of Legislation	**Greenhouse gas emission allowance trading scheme** (Emission Trading Scheme- ETS) (Directive 2003/87/EC)
Date of entry into force	2003
Summary of bill	This Directive establishes a Community greenhouse gas emissions trading scheme from 1 January 2005. In this context, 'allowance' means the entitlement to emit a tonne of carbon dioxide (or an amount of any other greenhouse gas with an equivalent global warming potential) during a specified period. This scheme should enable the Community and the Member States to meet the commitments to reduce greenhouse gas emissions made in the context of the Kyoto Protocol. Directive 2004/101/EC reinforces the link between the EU's emission allowance trading scheme and the Kyoto Protocol by making the latter's 'project-based' mechanisms (Joint Implementation and the Clean Development Mechanism) compatible with the scheme.
Driver for implementation	Climate Change
Monitoring arrangements	At the end of the year, the operator must submit a report to the appropriate authority detailing the greenhouse gas emissions produced by the installation during that year. Any operator failing to surrender, by the 30th of April t, the quantity of allowances commensurate with the emissions from his installation during the previous year will be required to pay an excess emissions penalty. The penalty is EUR 100 for each tonne of carbon dioxide equivalent (EUR 40 during the three-year period starting on 1 January 2005) and will not release the operator from the obligation to surrender an amount of allowances equal to the excess emissions.
Putting a price on carbon	With effect from the 1st of January 2005, all installations carrying out any of the activities listed in Annex I to this Directive (activities in the energy sector, iron and steel production and processing, the mineral industry, and the wood pulp, paper and board industry) and emitting the specific greenhouse gases associated with that activity, must be in possession of a permit issued by the appropriate authorities.

Name of Legislation	**Greenhouse gas emission allowance trading scheme** (Emission Trading Scheme- ETS) (Directive 2003/87/EC)
Mainstreaming climate change	Each Member State must draw up a national plan complying with the criteria set out in Annex III to this Directive, indicating the allowances it intends to allocate for the relevant period and how it proposes to allocate them to each installation.
Transport polices	Including aviation activities in the emissions trading scheme within the Community (Directive 2008/101/EC): This bill includes aviation within the EU Emissions Trading Scheme (ETS). All flights that arrive or depart from a Member State's territory shall be subject to the EU ETS (by the 1st of January 2012).

Name of Legislation	**Community framework for the taxation of energy products and electricity** (Council Directive 2003/96/EC)
Date of entry into force	2003
Summary of bill	The European Union establishes generalised arrangements for the taxation of energy products and electricity. The Community system of minimum rates (previously confined to mineral oils) is extended to coal, natural gas and electricity. Energy products and electricity are only taxed when they are used as motor or heating fuel.
Driver for implementation	Energy efficiency
Energy - demand-side policies	In line with the Community's objectives and the Kyoto Protocol, the framework encourages more efficient use of energy so as to reduce dependence on imported energy products and limit greenhouse gas emissions. Also, in the interests of protecting the environment, it authorises Member States to grant tax advantages to businesses that take specific measures to reduce their emissions. Member States can apply exemption for biofuels or energy which is derived from solar, wind, tidal, geothermal, biomass, or waste origin.

Name of Legislation	**Use of biofuel** (Directive 2003/30/EC)
Date of entry into force	2003
Summary of bill	The Directive requires that the Member States introduce legislation and take the necessary measures to ensure that as of 2005, biofuels account for a minimum proportion of the fuel sold on their territory. Biofuels are defined as liquid or gaseous fuels which are used for transport and which are produced from biomass. Biomass is biodegradable waste obtained for example from agriculture and forestry.
Driver for implementation	Biofuels
Monitoring arrangements	The Commission will present a report to the European Parliament and to the Council before the 31st of December 2006 on the progress achieved in the use of biofuels in the Member States, and then decide whether any new legislative proposals will be necessary.
Energy - supply-side policies	The Member States must ensure that the minimum share of biofuels sold on their markets is 2% by the 31st of December 2005, and 5.75% by December 2010. Any Member State setting lower objectives will have to justify this on the basis of objective criteria.
Transport polices	The Directive sets a minimum percentage of biofuels to replace diesel or petrol for transport purposes in each Member State.

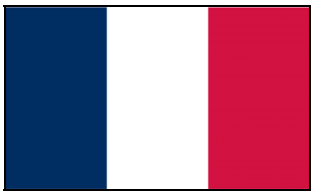
Name of Legislation	**Energy performance of buildings**. Directive 2002/91/EC (also Recast adopted by parliament in 2010)
Date of entry into force	2002
Summary of bill	The Member States must apply minimum energy performance requirements of new and existing buildings, ensure the certification of their energy performance, and require the regular inspection of boilers and air conditioning systems in buildings. The Directive concerns the residential sector and the tertiary sector (including offices, public buildings). The Directive forms part of the Community initiatives on climate change (commitments under the Kyoto Protocol) and security of supply (the Green Paper on security of supply). The recast adopted by parliament in 2010 intends to clarify, strengthen, and extend the scope of the existing Directive.
Driver for implementation	Buildings/energy efficiency
Emission reduction targets	In the 2010 recast, the EU executive expects the overhaul to bring its energy consumption down by 5-6%, consequently slashing CO_2 emissions by 5% by 2020.
Energy - demand-side policies	The directive requires a common methodology for calculating the integrated energy performance of buildings. This includes: minimum standards on the energy performance of new buildings, and existing buildings that are subject to major renovation. It also includes systems for the energy certification of new and existing buildings and, the prominent display of this certification and other relevant information for public buildings. Certificates must be less than five years old. Regular inspection of boilers and central air-conditioning systems in buildings and an assessment of heating installations in which the boilers are more than 15 years old must be conducted. In the recast, the goal is that at the end of 2018, public buildings will have nearly zero-energy standards and by 2020, all new buildings are to be nearly zero-energy. Extending of the scope of the directive by eliminating the current 1,000m² threshold, would mean that all

Name of Legislation	**Energy performance of buildings**. Directive 2002/91/EC (also Recast adopted by parliament in 2010) existing buildings undergoing major renovations would have to meet minimum efficiency levels.
Mainstreaming climate change	The EU member states are responsible for drawing up the minimum standards. They will also ensure that the certification and inspection of buildings are carried out by qualified and independent personnel.

Name of Legislation	**Promotion of electricity from renewable energy sources** (Directive 2001/77/EC)
Date of entry into force	2001
Summary of bill	The European Union is creating a framework for promoting renewable energy sources for electricity production. It is setting an objective for renewables of a 21% contribution to electricity production and is laying down specific measures relating to the evaluation of the origin of the electricity, connection to the grid, and administrative measures. This framework been repealed by Directive 2009/28/EC (cf CARE).
Driver for implementation	Renewable energy
Energy - supply-side policies	12% renewable contribution to electricity production by 2010.

Name of Legislation	**Information on the fuel consumption and CO_2 emissions of new cars** (Directive 1999/94/EC). Amended by Directive 2003/73/EC and Regulation (EC) No 1882/2003
Date of entry into force	2000
Summary of bill	To help consumers choose vehicles with low fuel consumption, the European Union requires dealers of new passenger cars to provide potential buyers with useful information on these vehicles' fuel consumption and CO_2 emissions.
Driver for implementation	Transport/ emissions
Transport polices	The purpose of the Directive is to ensure that information relating to the fuel economy and CO_2 emissions of new passenger cars offered for sale or lease in the Community is made available to consumers. This consumer information system is to be set up using the following four methods: attaching a fuel consumption and CO_2 emissions label to the vehicle; producing a fuel consumption and CO_2 emissions guide; displaying posters in car showrooms; and including fuel consumption and CO_2 emissions data in promotional material.

4.5 France



4.5.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 465 532 -12.6%
Latest reporting year	2008
Importance as an emitter	top 20
Copenhagen Accord pledge (for 2020)	20% reduction from 1990 levels by 2020 rising to 30% under an international agreement, per the EU position. Domestically, the Grenelle envisages a 75% (factor 4) cut by 2050, annual reductions of 3% and annual emissions of less than 140 $MtCO_2e$.
Flagship legislation	Grenelle I and Grenelle II (2009 and 2010)

4.5.2 Legislative Process

In France, there is a bicameral parliamentary system where legislative power belongs to the 'Assemblée Nationale' and the 'Sénat'. Statute legislation may be proposed by the government (council of ministers), or by members of Parliament. The government has a strong influence in shaping the agenda of Parliament and only 10% of existing laws were proposed by members of parliament.

There is a strict separation between what belongs to 'law' and what belongs to 'regulation'. Laws determine general principles and rules in domains explicitly quoted in the constitution such as civil rights, nationality, and crime. Laws must be voted on by the parliament and can be blocked by the 'Conseil Constitutionnel' if it finds that the law goes against the constitution. In this case, the law must be modified and voted on again, or abandoned. Regulations can establish rules outside of the law's domain or specify more precisely the implementation modalities of passed laws. Regulations do not need to be voted on by the parliament.

4.5.3 Climate Change Legislation and Regulation

Climate related rules in France come from different sources. In 2000, France produced

its first National Programme for Tackling Climate Change that synthesised the objectives and measures that the government wanted to implement to tackle climate change. These measures were then either inscribed in laws or regulations on energy, finance, agriculture, urban planning or abandoned. The same experience was reproduced with the Climate Plan 2004 and the Climate Plan 2006. It is now required that the climate plan be refreshed every two years according to the *2005 Energy Policy Framework Law* (2005-781). Also, the state encourages local authorities to adopt the same process at the territorial level and to produce local climate plans.

Most of the policies regarding transportation or energy efficiency have been implemented through a regulatory framework (For instance Thermal Regulation 2005 reinforced through 'Grenelle I' in 2009). The fiscal tools, such as incentives for renewable or feed-in tariffs, have been passed through the yearly finance laws ('Loi de Finances 2005, 2006, 2009'). Most energy supply related objectives have been passed through the *Energy Policy Framework Law* (2005-781) of 2005. France's ambition to reach a target of 23% of renewable energy in the total national energy consumption by 2020 (Loi Grenelle I, 2009) goes above the EU's target (20% in 2020).

In October 2007, an original process called 'Grenelle de l'environnement' was initiated. 'Grenelle' refers to the Grenelle agreements that have been negotiated during the events of May 1968 between the government and unions. The objective of 'Grenelle de l'environnement' was to gather environment stakeholders, in order to reach a series of agreements, policies, and objectives, which would then be translated into laws and regulations. One of the six working groups focused specifically on climate and energy, and was composed of 40 members divided into five sub-groups (state, authorities, non-government organisations, employers, and employees). Some of the measures agreed were adopted in the Grenelle I law in 2009. More precise policies (designed to implement the principles stated in Grenelle I) were voted on in the June 2010 Grenelle II law. One of the key mechanisms agreed in the Grenelle was the carbon tax, or 'Contribution Climat-énergie'. However, this policy was finally abandoned by the government for reasons of national economic competitiveness. The French government announced that the carbon tax would be only postponed, and that it would strongly push for a European border carbon tax, before implementing a carbon tax at the national level.

The integrative approach of the Grenelle has contributed in bringing the important principles and policies addressing climate change into the mainstream. The Grenelle has either; strengthened those policies and goals which already were part of national legislation; or has incorporated them into a specifically dedicated law on environment. It has also created a dynamic between various stakeholders that still continues today.

Although some of the initially planned measures have proven challenging givem the economic slowdown and budgetary constraints, the Grenelle-II law still contains many positive provisions. Particularly encouraging is that it prioritises emission reductions and energy efficiency improvements in the buildings and transport sectors. These two sectors account for the bulk of France's GHG emissions, and reducing them is a daunting task, especially for the transport sector (IEA).

Another source of climate legislation in France comes from the European directives that France has transposed into national legislation. This was done directly in the case of the French National Allocation Plan voted on in 2005 to implement the CO_2 EU-Emissions Trading Scheme (Directive: 2003/87/CE); or can be done indirectly through broader laws such as the EU Directive 2002/91/CE on the energy performance of building transposed within the Energy Policy Framework law passed in 2005 (2005-781). The main national objectives and regulations to reduce emissions and improve energy efficiency find their sources in European law.

France: Flagship Legislation

Name of Legislation	**Framework Law for the implementation of the "Grenelle de l'environnement"** (Loi de programme relatif à la mise en œuvre du Grenelle de l'environnement,(Loi Grenelle 1))
Date of entry into force	2009
Summary of bill	In July 2007, the French government established six working groups gathering state and non-state actors to address ways to redefine France's environment policy. The proposed recommendations were then put to public consultation, leading to a set of recommendations released at the end of October 2007. These recommendations were presented to the French parliament in early 2008. One working group was specifically created to address the issue of climate change. The Grenelle 1 Law states the principles of the Grenelle process. The Grenelle 2 law will give a more detailed implementation framework. Not all the measures negotiated during the Grenelle process were adopted after the law went through parliament. The name of the process, "Le Grenelle de l'Environnement", refers to a 1968 conference when government negotiated with unions to end weeks of social unrest.
Driver for implementation	Environmental policy
Monitoring arrangements	A specific committee ("Comité national du développement durable et du Grenelle de l'Environnement") is set up to monitor the implementation of the measures adopted in the Grenelle Laws and report once a year to the parliament to suggest improvements. The committee is also associated to the formulation, monitoring and evaluation of sustainable development and biodiversity national strategies. The committee was instituted by the Decree n0 2010-370 in April 2010 and held its first meeting in May 2010. It is the institutionalisation to the "Comité de Suivi du Grenelle" created in 2007. This "Comité national du développement durable et du

Name of Legislation	**Framework Law for the implementation of the "Grenelle de l'environnement"** (Loi de programme relatif à la mise en œuvre du Grenelle de l'environnement,(Loi Grenelle 1)) Grenelle de l'Environnement" is chaired by the Ministry of environment, the inter-ministerial delegate for sustainable development, and several groups made of representatives of the State, the private sector, Environmental NGOs and unions. It has also 6 members who represent the domain of family, consumers protection, solidarity, social integration, youth, development aid and a representative of the Chamber of Commerce and Industry. In total, it has 41 members. This committee has a secretariat within the Minister of the environment and Sustainable Development (the same secretariat as for the "Commissariat général au développement durable.", and must meet at least four times. It can also meet when needed under a convocation from the Ministry of environment. It can also meet if two third of its members demand it. The outcomes of its meeting are made available to the public.
Putting a price on carbon	Extension of the ETS to new sectors and bid of part of the allowances allocated to companies provided it does not excessively hurt the competitiveness of this sector on the international market A "Carbon tax" or "Climate Energy Contribution" to tax fossil fuel consumption will be studied (failed so far; see Grenelle II)
Emission reduction targets	Fighting climate change is recognised as a priority. Division by 4 the GHG emissions by 2050 and 3% per year reduction. Bringing yearly emissions below 140 million tons.
Energy - supply-side policies	Objective of 23% of renewable energy on the total national energy consumption by 2020 (above the 20% of the European Community). Production of biofuel provisionned to the respect of soil quality.

Name of Legislation	**Framework Law for the implementation of the "Grenelle de l'environnement"** (Loi de programme relatif à la mise en œuvre du Grenelle de l'environnement,(Loi Grenelle 1))
Energy - demand-side policies	Energetic and thermic renovation programme for existing buildings and new constructions. Reinforcement of Thermal Regulation.Objective of reduction of 38% of existing building consumption by 2020 through several renovation programmes. Objective of total renovation of existing social housings. Increased standard requirements for new constructions. Reinforcement of labelisation and certification schemes for low carbon products.
Transport polices	Transport of merchandise: objective of 25% of non-road based transport (support and extension of railway, high speed trains, fluvial, maritime transportation). Support of public transport and clean vehicles. Extension of subway and regional train in Ile-de-France (Paris region)
Research and development	Additional funding for Sustainable Development research programmes (1 billion on 4 years). Objective: by 2013 spending for clean energy and environment to be equal to spending in research on civil nuclear.
Mainstreaming climate change	Local and regional authorities are invited to produce Local Climate plans before 2012. Measures to mainstream climate change and energy efficiency into urban law. Several measures for state exemplarity (carbon footprint studies, +20% energy efficiency etc.). Reorganisation of public environmental expertise to include more multi-disciplines.

Name of Legislation	**Law Grenelle 2** ("Loi portant Engagement national pour l'environnement")
Date of entry into force	2010
Summary of bill	This law aims at precising the Grenelle 1 axes and objectives in order to facilitate their implementation.
Driver for implementation	Environment
Monitoring arrangements	Same as for Grenelle 1
Putting a price on carbon	The first version of the Carbon Tax proposition was blocked by the "Conseil Constitutionel" in December 2009 for reasons of fiscal inequalities. Later, in the context of the economic crisis the carbon tax project was increasingly seen by the government as an important issue for national economic competitiveness. Before the regional elections, president Sarkozy announced the withdrawal of the legislative project justifying it by the will to promote a European Carbon tax before implementing one at the national level.
Emission reduction targets	Same as for Grenelle 1
Energy - supply-side policies	Better linkage of renewable to the main energy network. Regulation of experimental carbon storage installations. Support and administrative facilitation for wind power. Incentives for solar power (each person is allowed to have photovoltaic panels on its building and to sell it)
Energy - demand-side policies	"Carbon tax" abandoned. Improvement of energetic savings certification schemes. Improvement of energy consumers' information on their level of consumption and means of reduction.
Mainstreaming climate change	Publication of Regional programmes for climate and energy within a year of the law entering into force.

France: Other Relevant Legislation

Name of Legislation	**Finance Law 2009**
Date of entry into force	2009
Summary of bill	The 2009 Finance Law contains various provisions to increase financing for energy efficiency investments and in support of renewable energy.
Energy - supply-side policies	The Law also includes some provisions targeting biofuels. Ethanol E85 is to benefit from progressively reduced consumption taxes
Energy - demand-side policies	The Finance Law established a zero-interest loan programme for those purchasing a home for the first time (either new or existing construction); the loan amount is increased by EUR 20 000 if the building meets standards beyond those required under current building regulations. Eco-loan: 0% loan for energy-efficient renovation (Art. 99) (-Thermal insulation for roofs, exterior walls, Installation, regulation or replacement of heating or hot water systems etc.)

Name of Legislation	**Bonus-Malus**: vehicle CO_2 bonus and penalty system
Date of entry into force	2007
Summary of bill	Following the "Grenelle of the environment" process, a combined bonus and penalty system (Bonus-Malus programme) was announced to encourage the purchase of low-polluting vehicles.
Driver for implementation	Climate Change
Transport polices	The bonus system applies to new vehicles purchased from 5 December 2007 and is provided in function of the CO_2 emitted

Name of Legislation	**Farming Policy Framework** ("Loi d'Orientation Agricole" n°2006-11)
Date of entry into force	2006
Summary of bill	Sets outs the main targets and policies for the national agriculture policy
Driver for implementation	Land use
Energy - supply-side policies	This law goes beyond the 2010 European objective of 5,75% of biofuels (cf 2003/30/CE and Energy Policy Framework) and sets an ambitious target of 7% of biofuels in fuels for 2010.

Name of Legislation	**Plan Climat 2006 (**Policy framework)
Date of entry into force	2006
Summary of bill	As envisaged in the Energy Policy Framework (2005), the government elaborated a new climate plan two years after the 2004 Climate Plan. The Climate Plan 2006 was meant to reinforce the measures adopted in the Climate Plan 2004 and implement a few new measures. Most of the measures have been implemented under previous existing laws, decrees and regulations that do not need parliament approval.
Driver for implementation	Climate Change
Monitoring arrangements	Monitored by an inter-ministerial mission on greenhouse gas. Increased transparency through an operational document ("Document de politique transversal") annexed to the yearly Budgetary Law ("loi de finances") in order to give more visibility to members of parliaments.
Emission reduction targets	Avoiding 10% emissions by 2010. Dividing emissions by 4 by 2050
Energy - supply-side policies	Increasing the number of "certificates for energy savings" ("certificats économie énergie") in order to incite energy producers to promote energy savings. Incentive and information mechanisms to promote wood heating and solar electricity: i.e : increase of the feed-in tariffs for photovoltaic
Energy - demand-side policies	Reinforcement of tax exoneration on renewable installations - January 2007: creation of the Sustainable Development booklet : it enables banks to finance low interest rates loans for the energy efficiency renovation of buildings in exchange of tax exoneration on the money put in booklet - Generalisation of the energy performance diagnostics
Transport polices	Extension of the Energy label to second hand cars and advertisments.

Name of Legislation	**Plan Climat 2006 (**Policy framework) Set of measures for limiting air pollution (congestion charges, increase of the number of taxis and public transports etc.)
Mainstreaming climate change	Local authorities of more than 100000 inhabitants are incited to produce Local Climate Plans. Increased presence of climate change in the school programs
Adaptation	September 2007: Creation of a five year National Adaptation Plan to climate change

Name of Legislation	**Thermal Regulation 2005** (RT 2005)
Date of entry into force	2005
Summary of bill	Thermal Regulation 2005 (Regulation Thermique 2005) directly replaces Thermal Regulation 2000, introducing more stringent regulations of thermal insulation and heating systems.
Driver for implementation	Energy Efficiency
Energy - demand-side policies	RT2005 requires 15% improvement of thermal efficiency and applies to new buildings. It also creates labels to identify High energetic Performance buildings. Calculations now include natural lighting and renewable energy source -Imposition of distinct summer and winter requirements to encourage bioclimatic architecture -Calculation of air-conditioned buildings to discourage their use and construction in France.

Name of Legislation	**Energy Policy Framework** ("Loi de Programme fixant les orientations de la politique énergétique (POPE), n°2005-781")
Date of entry into force	2005
Summary of bill	This law, adopted after two years of public debate, defines the objectives and orientations of France's energy policy (energy security, competitive energy market, fighting greenhouse effect, manage demand, diversify sources of supply, develop new technology). The bill states that tackling climate change is a priority of France's energy policy; Includes objective of annual reduction between now and 2015 of French energy intensity by 2%, and between now and 2030 by 2.5%
Driver for implementation	Energy
Monitoring arrangements	Creation of a High Council on Energy to manage all aspects of the energy sector (including exchange of White Certificate on clean energy)
Emission reduction targets	Objective to decrease the GHG emissions by 3% per year to divide by 4 the total of emissions in 2050.
Energy - supply-side policies	It contains objectives to increase the share of renewable electricity in the national energy production and to diversify its sources: renewable energies' satisfaction of 10% of French energy demand by 2010. Specifically, this entails the development of thermic energy sources by 50% before 2010 and the fuel mix incorporation of biofuels by 2% before 2006 and 5.75% before 2011 (Biofuel Plan)
Energy - demand-side policies	Objective to decrease energy demand in order to decrease the final energy intensity by 2,5% in 2030. It also includes new incentive mechanisms such as tax exonerations, energy label for building and White Certificate Programme to encourage energy efficiency among firms in the energy sector as envisaged in the 2004 Climate Plan. Transposition of the EU directive 2002/91/CE on the energy performance of building (standards, energy

Name of Legislation	**Energy Policy Framework** ("Loi de Programme fixant les orientations de la politique énergétique (POPE), n°2005-781")
	performance certificate, energy efficiency studies before construction begins)
	-Information campaigns targeting both schoolchildren and consumers.
Research and development	Energy Technology R&D: The government will publish its domestic research strategy, to be revised every 5 years, and report each year to the Parliament regarding development of renewable energies and energy efficiency programs. Funds have been given to the National Research Agency.
Mainstreaming climate change	It requires the government to elaborate a Climate Plan every two years in order to elaborate all the national framework and policies implemented to fight climate change. Support for regional and municipal programs of energy management

Name of Legislation	**Plan Climat 2004** (Policy framework)
Date of entry into force	2004
Summary of bill	After extensive inter ministerial discussions the plan was postponed 5 times and finally adopted by the government in July 2004. The goal of the Climate Plan 2004 (Plan Climat 2004) was to reinforce the National Programme for Tackling Climate Change and to implement a pragmatic set of tools to respect France's Kyoto commitments. Some measures have been implemented.
Driver for implementation	Climate Change
Monitoring arrangements	Monitored by an inter-ministerial mission on greenhouse gas
Putting a price on carbon	The plan envisaged the February 2005 "French National Allocation Plan 2005-2007" (Implementation of the 2003 European Directive creating a CO_2 EU-Emissions Trading Scheme (2003/87/ CE)). The scope of the French NAP has been enlarged to installations of other sectors that are not mentioned in the European Directive (chemicals, agro-food, services), adding more than 700 installations. The new entrants reserve has increased to 5.69 Mt
Emission reduction targets	Goal to reduce by 4 the level of emissions in 2050 and to cut 72 million tonnes of carbon dioxide emissions annually until 2010.
Energy - supply-side policies	Most of the Climate Plan energy-supply side measures rests on the 2005 Framework law on Energy; Tax exoneration for solar energy installations (40% in 2005, 50% in 2006)
Energy - demand-side policies	January 2005 (Finance Law 2005): Includes the creation of a tax exoneration that aims to support the integration of energy efficient equipments, materials and devices in private households. This provision is to be applied from 2005 to 2009 with 40% tax exoneration for the expenses on equipments producing renewable energy. April 2005: Air conditioners must have energy label.

Name of Legislation	**Plan Climat 2004** (Policy framework) January 2006 (Finance Law 2006): Tax or malus on the registration document acquired for the purchase of cars rejecting more than 200g CO_2/km. January 2006 (Finance Law 2006): increase of tax exoneration for clean vehicles (1525 euros to 2000 euros). May 2006: Energetic Label ("Etiquette Energie") for new cars mandatory (transposition of EU directive of 1999). Biofuel Plan: objective 5,75% of Biofuels in 2010 (transposition of the Biofuel European directive), development of a network of biofuel stations.
REDD/Land Use policies	Tax exonerations for organic farmers
Transport polices	Extension of the Companies Mobility Plans ("Plan de Déplacement pour les enterprises"). It is a set of measures that incite and help companies to elaborate professional transportation plans reducing the use of individual cars. Acceleration of the construction of new High Speed Train railways
Mainstreaming climate change	The Climate Plan is distributed into various ministries and turned into sectoral more detailed plans after which different tools and regulations are developed and implemented. Elaboration of voluntary regional plans and subsidies for renewable energy (Alsace and Rhône-Alpes). Support of local administrations (regions, departments) to develop their own policies and regulations (urban planning, CO_2 quantification etc.)
Adaptation	The Plan Climat 2004 mandates ONERC to prepare a strategy for national adaptation to climate change and to lead a certain number of projects in this field.

Name of Legislation	**Finance bill for 2003** (Law n° 2002-1575 of 30)
Date of entry into force	2003
Summary of bill	This yearly law sets out the benefits and expenses of the state. It contains mechanisms to achieve emission or energy efficiency targets.
Driver for implementation	National finance
Energy - supply-side policies	The Finance law of 2003 extends the tax credit for acquiring energy production equipment which uses a renewable source of energy, and which is installed in new housing. The credit is equal to 15% of the amount of the purchase price.
Transport polices	The finance law extends until 31 December 2005 the tax credit for the acquisition of a new vehicle operating on natural gas, liquified natural gas and hybrid vehicles (electric/combustion).

Name of Legislation	**Creation of the National Observatory on the Effects of Global Warming** (Observatoire national sur les effets du réchauffement climatique - ONERC)
Date of entry into force	2001
Summary of bill	The observatory is created to improve the links between scientific and political national institutions on climate change and monitor the effects of climate change
Driver for implementation	Climate Change
Research and development	To collect and disseminate information, studies and research on the risks relating to global warming and extreme climatic phenomena in connection with other national or international institutions. To advise the means of climate change mitigation and adaptation to limit associated risks.

Name of Legislation	**National Programme for Tackling Climate Change 2000/2010** (Programme National de Lutte contre le Changement Climatique (PNLCC))
Date of entry into force	2000
Summary of bill	Following previous national reports or communications on the subject (1990, 1995, 1997), the Programme was adopted in January 2000 in order to reach the objectives adopted at Kyoto. This programme provides information on the national dispositions to tackle climate change but is not legally binding. It was inspired by the will to pursue legislative activity on climate change, create structural and fiscal measures, economic incentives tools as well as mechanisms to control energy production and consumption. It suggested measures that if applied would help France reach its objectives for the 2008-2010 period. Not all measures proposed have been adopted.
Driver for implementation	Climate
Monitoring arrangements	Monitored by an inter-ministerial mission on greenhouse gas
Putting a price on carbon	Suggested a General Tax on Polluting Activities on energy ("Taxes Générale sur les Activités Polluantes" TGAP-energy) that failed. The bill proposed to parliament would have been applied only to intermediary energy consumption of industrial and tertiary companies (transports and domestic would have been exonerated). The benefits of the TGAP-energy would have been used to finance companies to help them implementing the 35hours working time legislation (double dividend principle). The project was voted and was supposed to be implemented in 2001. However, the Conseil Constitutionnel (Supreme Court equivalent) censured it on the grounds of unequal fiscal treatment that would have been contrary to the constitution. Discussions for another similar project continued between ministries but were finally abandoned because of the strong opposition of the Finance ministry and industrial lobbies.

Name of Legislation	**National Programme for Tackling Climate Change 2000/2010** (Programme National de Lutte contre le Changement Climatique (PNLCC))
Emission reduction targets	Stabilisation of emissions in 2008-2012 at the level of 1990s emissions (Kyoto): avoiding the emission of 16 millions tons of Carbon equivalent in from 2000 to 2010.
Energy - demand-side policies	Raising the tax on natural gas in order to give a signal to domestic consumers. This increase should be compensated by the decrease of other taxes. The French government decided in December 2000 to create an information network on energy efficiency "Points Info Energie" to supply local information concerning energy saving and renewable energy
Transport polices	Raising the internal tax on oil products (Taxe Intérieure sur les Produits Pétroliers – TIPP) in order to lower demand in transportation sector. Reinforcement of existing measures such as increase of rail merchandise transportation, decrease of unitary vehicle consumption
Research and development	Increased support to research in renewable energies (wind, solar, wood).

Name of Legislation	**Thermal Regulation**
Date of entry into force	2000
Summary of bill	This regulation is the result of the implementation of the "Law on air and rational use of energy" (1996). It sets up the minimal threshold for buildings thermal characteristics and the conventional methodology to calculate energy consumption of buildings. It consists of a decree on the thermal characteristics of construction and an order relating to the thermal characteristics of new buildings and new additions to existing buildings
Driver for implementation	Building/Energy Efficiency
Energy - demand-side policies	The new rules apply standards that are 20% more stringent than previous ones for the residential sector, and 40% more stringent in the light industry sector. The National Programme for Tackling Climate Change 2000/2010 allows for periodically increasing the standards, beginning in 2005.

4.6 Germany

4.6.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 988 958 -18.4%
Latest reporting year	2008
Importance as an emitter	top 10
Copenhagen Accord pledge (for 2020)	As the EU: 20% from 1990 unilaterally; move to 30% as part of a global and comprehensive agreement for the period beyond 2012 and provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities; however, the current coalition government goes even further by setting a domestic target to reduce GHG emissions by 40% below 1990 levels by 2020.
Flagship legislation	Integrated Climate and Energy Programme

4.6.2 Legislative Process

In Germany, the Bundestag is the most important organ of the legislative branch. The German Bundesrat is also involved in the legislative process as an organ through which the sixteen *Länder* of Germany participate in the legislation and administration of the Federation.

The federal government introduces most legislation; when it does so, the Bundesrat reviews the bill and then passes it on to the Bundestag. If a bill originates in the Bundesrat, it is submitted to the Bundestag through the executive branch. If the Bundestag introduces a bill, it is sent first to the Bundesrat and, if approved there, forwarded to the executive. The Joint Conference Committee resolves any differences over legislation between the two legislative chambers. Once the compromise bill that emerges from the conference committee has been approved by a majority in both

chambers and by the cabinet, it is signed into law by the federal president and countersigned by the relevant cabinet minister.

The German Basic Law assigns no general legislative powers to the Federal Government in respect of environment protection. Rather, the respective legislative powers are separated out for air pollution control, noise abatement, waste management, nature conservation and water supply. Environmental responsibilities that fall either to a limited extent under these sectoral responsibilities or are not covered by them at all can, under certain circumstances, be covered by the legislative power of "law relating to economic affairs." Then, legislation on climate change can in part be covered by the legislative area of "air pollution control", but must also be covered by the "law relating to economic affairs." Therefore, there is no uniform legislative area of climate change law in Germany.

4.6.3 Climate Legislation and Regulation

Germany launched its first national climate change and energy programme in 2007, closely followed by a second package in 2008. More recently, in September 2010, the German government launched its "Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply". So far the government's integration of climate change mitigation into the legal system has been primarily focused on energy efficiency and renewable energy.

Germany has introduced a range of statutory regulations on energy efficiency in key sectors. With the amendments to the *Combined Heat and Power Act* in 2008 and 2009, the percentage share of high-efficiency combined heat and power (CHP) plants in electricity and heat generation (primary energy use over 90 percent) will be increased from 12 to 25 percent. District heat networks will also be expanded. In the buildings sector, the *Energy Saving Ordinance* (EnEV) was amended (most recently in 2009), with the requirements for restricting primary energy use and transmission heat loss being significantly tightened. The *Heat Cost Ordinance* was also amended in 2009 to foster energy-saving behaviour among tenants of rented premises. For road transport, improvements are expected in the statutory reduction targets for CO_2 emissions per kilometre. Among other things, these include enhanced engine efficiency (Regulation EC 443/2009). Consumer-side incentives come in the form of revised fuel consumption labelling for private vehicles (Ordinance on Fuel Consumption Labelling for Cars, last amended in 2006). In respect of industrial facilities, greater efficiency is expected to be achieved through the emissions trading scheme.

Use of renewable energy is of fundamental importance in German climate change legislation. The *Renewable Energy Sources Act* of 25 October 2008 sets a target to generate 30% of electricity supply from renewable energy resources by 2020. In line with the Meseberg Integrated Energy and Climate Programme, new instruments were introduced under the *Renewable Energies Heat Act* of 7 August 2008, which is designed to foster and enforce the use of renewable energy for heat supply. Given that around half of the energy used in Germany goes to supplying heat and for refrigeration, the aim of this Act is not only to reduce energy consumption by

improving energy efficiency, among other things with the aid of the EnEV, but also to switch the unavoidable portion of energy consumption over to renewable energy.

Another key component in the promotion of renewable energy involves greater use of biofuels. The German government has introduced a package of rules that simplify the procedure for feeding biogas into the gas grid. The package includes a revised Gas Grid Access Ordinance 2008 and the Gas Grid Fee Ordinance 2008. What is more, the Meseberg Integrated Energy and Climate Programme contained a 17% target for biofuels by 2020. The legal basis is provided by the Biofuel Quotas Act of 2009. Germany has also transposed the Renewables Directive requirements on sustainable biomass production one for one into national law by means of the Federal Biofuels Sustainability Ordinance in 2009.

Germany: Flagship Legislation

Name of Legislation	**Integrated Climate and Energy Programme**
Date of entry into force	2007 and 2008
Summary of bill	This programme, which draws on the government's policy statement of 26 April 2007 and the results of an energy summit held on 3 July 2007, has as its guiding principles security of supply, economic efficiency and environmental protection. The integrated climate and energy programme aims to cut greenhouse emissions by 40% by 2020 compared with 1990 levels. Through 29 measures, the programme addresses a wide range of issues, including combined heat and power generation, the expansion of renewable energy in the power sector, carbon capture and sequestration technologies, 'smart' metering, clean power station technologies, the introduction of modern energy management systems, support programmes for climate protection and energy efficiency (apart from buildings), energy efficient products, provisions on the feed-in of biogas to natural gas grids, an energy savings ordinance, the operating costs of rental accommodation, a modernisation programme to reduce CO_2 emissions from buildings, energy efficient modernisation of social infrastructure, the Renewable Energies Heat Act, a programme for the energy efficient modernisation of federal buildings, a carbon dioxide strategy for passenger cars, the expansion of the biofuels market, reform of vehicle tax on the basis of carbon dioxide, energy labelling of passenger cars, reinforcement of the influence of the HGV toll, aviation, shipping, the reduction of emissions of fluorinated greenhouse gases, procurement of energy efficient products and services, energy research and innovation, electric mobility, international projects on climate protection and energy efficiency, reporting on energy and climate policy by German embassies and consulates, and a transatlantic climate and technology initiative.
Driver for implementation	Energy Security, Energy Efficiency and Climate Change
Monitoring arrangements	Bundestag

Name of Legislation	**Integrated Climate and Energy Programme**
Energy - supply-side policies	A target to double electricity generation from Combined Heat and Power to 25%; approval of a 850km underground grid to transport offshore wind energy to the country's south.
Energy - demand-side policies	Energy-related requirements for new homes and fully renovated old homes to target a 30% reduction in energy use; also rules on replacement of central heating boilers and new standards for windows and the insulation of building facades. Incentives for 'smart' meters; reform of the Energy Saving Ordinance.
Transport polices	Increase in road tolls for trucks; reform of vehicle tax to a pollutant and carbon dioxide emissions basis; amendment to the Passenger Car Energy Consumption Labelling Scheme.
Research and development	EURO 400 million to be allocated from sales of carbon allowances in the EU ETS to invest in low carbon projects, including refrigeration technology and biomass research.

Germany: Other Relevant Legislation

Name of Legislation	**Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply**
Date of entry into force	28 September 2010
Summary of Policy	To set out a long-term energy strategy to 2050 that will provide an environmentally sound, reliable and affordable energy supply.
Driver for implementation	Renewable Energy, Energy Security, Climate Change
Monitoring Arrangements	Scientifically tested monitoring every three years, to be published. Methodology to be established.
Emissions Reduction Targets (aspirational)	40 per cent below 1990 levels by 2020; 55 per cent by 2030; 70 per cent by 2040 and 80-95 per cent by 2050
Energy – supply-side policies	Renewable Energy to account for 18 per cent of gross final energy consumption by 2020; 30 per cent by 2030, 45 per cent by 2040 and 60 per cent by 2050. Limited extension of operating lives (by an average of 12 years) of 17 existing nuclear power plants. CCS: government to propose an Act to regulate the basic legal aspects of the entire CCS chain from capture to pipelines to geological storage. Grids: planned Power Grid Expansion Act to use innovative technologies to transport electricity over long distances with minimal losses, including expanded wind and other renewable, sometimes intermittent, technologies.
Energy – demand-side policies	By 2020, primary energy consumption to be 20 per cent lower than in 2008, and 50 per cent lower by 2050 (an average annual gain in energy productivity of 2.1 per cent). • The German government to enshrine in law the obligation to make energy efficiency an important criterion for awarding public contracts • Launch of energy efficiency initiative to provide

	consumers with better information on energy use, including product labelling, to enable them to make more informed decisions • Buildings: target to have a building stock in 2050 that is almost climate-neutral (low energy needs and the majority of that energy need to come from renewable sources).
Transport policies	Final energy consumption to fall by about 10 per cent by 2020 and by about 40 per cent by 2050 (2005 baseline). Target for a million electric vehicles on the roads by 2020 and 6 million by 2030. Incentives for electric vehicles, for example free parking and tax incentives.
Research and Development	Energy Research Programme to be unveiled in 2011 for the period up to 2020, with the following priorities: renewable energy, energy efficiency, energy storage methods and grid technology, integration of renewable energy into the energy supply and interplay between these energy technologies.

Name of Legislation	**Biofuel Quota Act**
Date of entry into force	15 July 2009, amended on 17 September 2009
Summary of bill	The legal basis for the Meseberg Integrated Energy and Climate Programme, which contained a 17% target for biofuels by 2020.
Driver for implementation	Renewable Energy
Transport polices	Under the Act, a growing percentage of fuel for use in motor vehicles must be produced from biomass. The German Advisory Council on the Environment found the target to be far too high, and favours biomass use in stationary CHP plants. The European Union in Article 3 (4) of the Renewable Energy Directive (Directive 2009/28/EC) prescribes a renewables share of only 10% for the transport sector.

Name of Legislation	**Renewable Energy Sources Act (EEG)**
Date of entry into force	25 October 2008, amended on 22 December 2009
Summary of bill	This Act replaced the law on feeding electricity from renewable resources into the public grid of 7 December 1990.
Driver for implementation	Climate Change
Monitoring arrangements	Bundestag
Putting a price on carbon	The instrumental core of the former Electricity Grid Feed Act has been retained: grid operators must feed renewables-generated electricity into the grid and charge a state-prescribed price for it. However, the regulatory approach has bee updated and made more sophisticated under the new Act.
Energy - supply-side policies	The Act aims to generate 30% of electricity supply from renewable energy resources by 2020.

Name of Legislation	**Renewable Energies Heat Act**
Date of entry into force	7 August 2008, amended on 15 July 2009
Summary of bill	It was designed to foster and enforce the use of renewable energy for heat supply. This is of particular climate policy importance because around half of the energy used in Germany goes to supplying heat and for refrigeration.
Driver for implementation	Energy Efficiency; and switch the unavoidable portion of energy consumption over to renewable energy
Emission reduction targets	It is hoped that the share of renewables in heat supply will be increased from the current 6.6% to 14% in 2020. An annual Euro 500 million in funding will be made available up to 2012 to promote energy efficiency in buildings.
Energy - supply-side policies	The regulatory core of the Act comprises the statutory obligation to cover a percentage of heat demand from renewable energy sources. The percentage involved depends on the type of energy used and ranges from 15% for solar energy to 50% for biofuel. However, the obligation to meet heat demand using renewables may be replaced by other measures, e.g., high-performance CHP plants.

Name of Legislation	**Energy Saving Ordinance (EnEV) on energy-saving insulation and energy-saving systems technology in buildings**
Date of entry into force	24 July 2007, last amended on 29 April 2009
Summary of bill	The regulation prescribes requirements for buildings: that specific annual primary energy consumption may not be exceeded (Section 3 and 4 EnEV). These minimum requirements include thresholds for transmission heat loss and also apply in adapted form from existing buildings (Section 9 and 10 EnEV). It was amended in 2009, with the requirements for restricting primary energy use and transmission heat loss being significantly tightened.
Driver for implementation	Energy Efficiency
Emission reduction targets	The Federal Government expects these measures to effect a 20% reduction in CO_2 emissions in the buildings sector by 2020.

Name of Legislation	**Energy Industry Act**
Date of entry into force	13 July 2005
Summary of bill	A framework policy to enhance competition, security of supply and sustainable energy production. It requires electricity labelling according to type of energy source.
Driver for implementation	Energy Security, Energy Efficiency
Energy - demand-side policies	Provides greater information on electricity sources to allow consumers to make informed decisions about suppliers.

Name of Legislation	**Law on the Conservation, Modernisation and Development of Combined Heat and Power (CHP)**
Date of entry into force	19 March 2002 amended 15 October 2008 and 21 August 2009
Summary of bill	This law replaces the 2000 law on combined heat and power. Both laws are primarily intended to promote large CHP plants that were affected by decreasing electricity prices as a consequence of liberalisation. At the same time the share of CHP-produced electricity is to be increased, aiming at lowering CO_2 emissions by 23 million tones by 2010. Half of this target is to be achieved by the CHP law, the other half by a voluntary agreement with industry.
Driver for implementation	Energy Efficiency, Renewable Energy
Emission reduction targets	With the amendments in 2008 and 2009, the percentage share of high-efficiency CHP plants in electricity and heat generation (primary energy use over 90 percent) will be increased from 12 to 25 percent. District heat networks will also be expanded.
Energy - supply-side policies	The renewable energy technologies not covered by the EEG may benefit from this law. This includes co-firing of biomass in fossil-fuelled power plants and biomass-fired CHP larger than 20 MW. The premium cannot be combined with other support, particularly not with the EEG.

Name of Legislation	**Law to amend the Mineral Oil Tax Law and Renewable Energy Law**
Date of entry into force	June 2002
Summary of bill	The law raises the cap on total photovoltaic capacity that is eligible for premium payments under the renewable energy law, and extends mineral oil tax exemption to cover all biomass fuels. This law was accepted by the EU in February 2004.
Driver for implementation	Renewable Energy
Monitoring arrangements	The law requires that the Federal Finance Ministry draw up a report with the aid of other relevant ministries every two years, with the first due at the end of March 2004, to chart progress in the market introduction of biofuels, and to examine price developments of biomass, crude oil and automobile fuels.
Energy - supply-side policies	The law raises the cap on the total photovoltaic capacity that is eligible for premium payments under the renewable energy law. It benefits biofuels by exempting them from oil tax from January 2004 until the end of 2009.

4.7 India

4.7.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 1,229 1,214 na
Latest reporting year	1994
Importance as an emitter	top 10
Copenhagen Accord pledge (for 2020)	Voluntary action to reduce the emissions intensity of GDP (excluding agriculture) by 20-25% by 2020 relative to 2005
Flagship legislation	National Action Plan on Climate Change (2008)

4.7.2 Legislative Process

The Indian legislative system is structured much like the British parliamentary system. The Indian parliament is a bicameral legislature composed of a lower house (the Lok Sabha or House of the People), and an upper house (the Rajya Sabha or Council of States).

The legislature passes laws – also called 'acts' - on constitutionally specified matters, such as central government finances and constitutional amendments. The two houses have the same powers, but the Rajya Sabha's power in the legislative process is subordinate to the Lok Sabha. All legislative proposals have to be brought in the form of Bills before Parliament. A Bill is a statute in draft and cannot become law unless it has received the approval of both the Houses of Parliament and the assent of the President of India.

There are 28 States and 7 Union territories in the country. The system of government in states closely resembles that of the Union. Each State Government has the freedom to draft it own laws on subjects that are classified as state subjects. Laws passed by the Parliament of India and other pre-existing central laws on subjects that are classified as central subjects are binding on all citizens the country.

4.7.3 Climate change Legislation and Regulation

Climate change

India is a non-Annex I country under the Kyoto Protocol and thus has no binding target for emissions reduction. However, India is an active participant in the Clean Development Mechanism (CDM) established by the Protocol. Indeed, it has more than 520 registered CDM projects as of 30th August 2010. India has a number of policies that, while not driven by climate concerns, contribute to climate mitigation by reducing or avoiding GHG emissions.

Rather than integrative binding legislation, India is developing a policy process to specifically address climate change. India adopted its first '*National Action Plan on Climate Change' (NAPCC)* in 2008 outlining existing and future policies and programmes directed at climate change mitigation and adaptation. The plan outlines eight *"national missions"* running up to 2017. These missions include the National Solar Mission, the National Mission for Enhanced Energy, Efficiency, the National Mission on Sustainable Habitat National Mission for a Green India aiming at increasing the forest cover and the National Mission on Strategic Knowledge aiming at establishing a research fund. In addition, it contains adaptation missions such as the National Mission for Sustaining the Himalayan Ecosystem to help protect India's water supply from the Himalaya or the National Mission for Sustainable Agriculture.

In June 2010, the Ministry of Environment and Forests at Government of India released its document called India: '*Taking on Climate Change - Post Copenhagen Domestic Actions'*. In addition to evaluating the progress of the policies announced in the 2008 NAPCC, it stated that India would be the first developing country to publish its emissions inventory in a two-year cycle going forward. It has started by publishing its 2007 inventory. In addition, India has also announced a levy – a clean energy cess – on coal, at the rate of Rs. 50 (~USD 1) per ton, which will apply to both domestically produced and imported coal. This money will go into a National Clean Energy Fund that will be used for funding research, innovative projects in clean energy technologies, and environmental remedial programmes. The Government of India has set up an Expert Group on Low Carbon Strategy for Inclusive Growth. The Group has been given the mandate to develop a roadmap for India for low carbon development. The Group's recommendations will become a central part of India's 12th Five-Year Plan that will come into effect in 2012. On the forestry side, a Technical Group has been set up to develop methodologies and procedures to make assessment and monitoring of REDD+ actions.

Additionally to actions at the Federal level, State governments are preparing State-level Action Plans on Climate Change. They draw upon India's National Action Plan in order to put in place state- level measures in mitigation and adaptation. Delhi has already completed and launched its Action Plans.

Energy efficiency and renewable energy

India has made important efforts in the last two decades to reduce its energy intensity. Factors contributing to the decline in energy intensity include improved energy efficiency, increased use of renewable and nuclear power, expanded public transport, and energy pricing reform (2).

The *Electricity Act 2003* sought to better coordinate development of the power sector in India. As an objective, it seeks to promote efficient and environmentally benign policies, among others. The Act recognised the role of renewable energy in the country's National Electricity Policy (issued by the government in 2005) and contains key provisions relating to renewable energy. This Act was supplemented by the *2006 Tariff Policy* that stipulates that State Electricity Regulatory Commissions (SERCSs) must purchase a minimum percentage of power from renewable sources. The 2006 *Integrated Energy Policy* that received Cabinet approval in 2008 has the broad objective of meeting energy demand "at the least cost in a technically efficient, economically viable and environmentally sustainable manner". It contains a number of policies that contribute to avoiding GHG emission. In 2007, India's cabinet made a series of announcements regarding ethanol production and proposed an indicative target of 20% blending of biofuels, both for bio-diesel and bio-ethanol, by 2017.

In addition to these framework policies, there are an important number of regulation and incentive instruments promoting energy efficiency and the use of renewable energy, at the Federal and the State levels. These include a revision in 2007 of the *Energy Conservation Building Code* that sets minimum requirements for building envelope components, lighting, HVAC, electrical system, water heating and pumping systems. Solar and wind power are strongly promoted as well through Solar and Wind *Power Generation Based Incentives.* As announced by the NAPCC, the *National Solar Mission* is a large-scale solar energy programme that runs from 2010 to 2022 and promotes electricity generation from both small- and large-scale solar plants. Presently, wind farm projects qualify for accelerated depreciation under the Income Tax Act and also a 'tax holiday' as infrastructure projects. Lots of local projects are also being implemented such as the *Solar Photovoltaic Programme,* the *Solar Water Heating System Programme,* and the *Village Electrification Programme.*

India: Flagship Legislation

Name of Legislation	**National Action Plan on Climate Change**
Date of entry into force	2008
Summary of bill	Prime Minister Manmohan Singh released India's first National Action Plan on Climate Change (NAPCC) outlining existing and future policies and programmes directed at climate change mitigation and adaptation. The plan outlines eight "national missions" running until 2017.
Driver for implementation	Climate Change
Monitoring arrangements	The Government has created an Advisory Council on Climate Change, chaired by the Prime Minister. The Council has broad based representation from key stakeholders, including Government, Industry and Civil Society and sets out broad directions for National Actions in respect of Climate Change. The Council will also provide guidance on matters relating to coordinated national action on the domestic agenda and review of the implementation of the National Action Plan on Climate Change including its R&D agenda. The Council chaired by the Prime Minister would also provide guidance on matters relating to international negotiations including bilateral, multilateral programmes for collaboration, research and development. The Council will be responsible for undertaking periodic reviews and reporting on the missions' progress. . Each Mission will report publicly on its annual performance. These National Missions will be institutionalised by respective ministries and will be organised through inter-sectoral groups which include in addition to related Ministries, Ministry of Finance and the Planning Commission, experts from industry, academia and civil society. The institutional structure would vary depending on the task to be addressed by the Mission and will include providing the opportunity to compete on the best management model. Each Mission will be tasked to evolve specific objectives spanning the remaining years of the 11th Plan and the

Name of Legislation	**National Action Plan on Climate Change** 12th Plan period 2012-13 to 2016-17. To be able to quantify progress, appropriate indicators and methodologies will be developed to assess both avoided emissions and adaptation benefits.
Energy - supply-side policies	**National Solar Mission** (see Infra): It sets a goal of increasing production of photovoltaics to 1000 MW per year, and to deploy at least 1000 MW of solar thermal power generation. It also sets the objective of establishing a solar research centre, increased international collaboration on technology development, strengthening of domestic manufacturing capacity, and increased government funding and international support. The plan's long-term aim is to make solar competitive with fossil-based energy.
Energy - demand-side policies	**National Mission for Enhanced Energy Efficiency**: The plan estimates that current initiatives, based on the Energy Conservation Act of 2001, will yield 10 000 MW of savings by 2012. Building on this, the plan recommends mandating specific energy consumption decreases in large energy-using industries, including a system for companies to trade energy-savings certificates. It also focuses on the role of incentives. **National Mission on Sustainable Habitat:** The plan seeks to promote energy efficiency as an essential component of urban planning. It calls for extending the Energy Conservation Building Code, and emphasises urban waste management and recycling, including power production from waste.
REDD/Land Use policies	**National Mission for a Green India**: The plan sets an afforestation target 6 million hectares or degraded forest lands, as well as expanding forest cover from 23% to 33% of they country's territory
Transport polices	The plan calls for stronger enforcement of automotive fuel economy standards, using pricing measures to encourage the purchase of efficient vehicles, and providing incentives for the use of public transportation.

Name of Legislation	**National Action Plan on Climate Change**
Research and development	**National Mission on Strategic Knowledge of Climate Change:** The plan calls for the establishment of a Climate Science Research Fund, improved climate modelling capacities, and increased international collaboration.
Mainstreaming climate change	The various missions each have a lead ministry, responsible for developing objectives, implementing strategies, timelines, and monitoring and evaluation criteria to be submitted to the Prime Minister's Council for Climate Change.
Adaptation	**National Water Mission:** The plan sets a goal to improve efficiency in water use by 20% through pricing and other measures.. **National Mission for Sustaining the Himalayan Ecosystem:** The plan targets biodiversity, forest cover, and other ecological conservation in the Himalayan region, home to glaciers that are a major source of India's water supply. **National Mission for Sustainable Agriculture:** The plain aims to support adaptation to climate change in agriculture, through the development of climate-resilient crops and adapted agricultural practices, as well the expansion of weather insurance mechanisms.

India: Other Relevant Legislation

Name of Legislation	**Post-Copenhagen announced domestic actions (follow up of the 2008 Climate Action Plan)**
Date of entry into force	Document released 30 June 2010
Summary of bill	Ministry of Environment and Forests at Government of India has released its document called India: Taking on Climate Change- Post Copenhagen Domestic Actions and has described a set of various actions being taken by the Government in the country.
Driver for implementation	Climate Change
Monitoring arrangements	On 10th May 2010, India released its Greenhouse Gas (GHG) Emissions Inventory for 2007, with the aim of enabling informed decision-making and to ensure transparency. Until now, the only official emissions estimates available were for the year 1994. With this publication, India has become the first "non-Annex I" (i.e. developing) country to publish such updated numbers. India also announced its intent to publish its emissions inventory in a two-year cycle going forward, which is much more frequent than the requirement under its NATCOM commitments. India will be the first developing country to do so.
Putting a price on carbon	India has announced a levy – a clean energy cess – on coal, at the rate of Rs. 50 (~USD 1) per ton, which will apply to both domestically-produced and imported coal. This money will go into a National Clean Energy Fund that will be used for funding research, innovative projects in clean energy technologies, and environmental remedial programmes. The expected earnings from this cess are expected to be around USD 500 million for the financial year 2010-11.
Energy - supply-side policies	Support of the National Solar Mission.
Energy - demand-side	India's cabinet approved the National Mission on

Name of Legislation	**Post-Copenhagen announced domestic actions (follow up of the 2008 Climate Action Plan)**
policies	Enhanced Energy Efficiency (NMEEE) on 24th June 2010. The Mission includes several new initiatives – the most important being the Perform, Achieve and Trade (PAT) Mechanism, which will cover facilities that account for more than 50% of the fossil fuel used in India, and help reduce CO_2 emissions by 25 million tons per year by 2014-15. The NMSH was recently approved as one of the eight National Missions under the Prime Minister's National Action Plan on Climate Change (NAPCC). A comprehensive strategic plan is being drafted for the implementation of this Mission.
REDD/Land Use policies	The GIM, also one of the eight National Missions under NAPCC, is being finalised. The overarching target of the GIM is to double the area to be taken up for afforestation/eco-restoration in India in the next 10 years, taking the total area to be afforested or eco-restored to 20 million ha. This would increase the above and below ground biomass in 10 million ha of forests/ecosystems, resulting in increased carbon sequestration of 43 million tons CO_2e annually. India has also announced a number of initiatives related to its preparedness for REDD+: -A Technical Group has been set up to develop methodologies and procedures to make assessment and monitoring of REDD+ actions. -A National REDD+ Coordinating Agency has been given in-principle approval. -Methodologies for National Forest Carbon Accounting are being institutionalised.
Research and development	The Indian Network for Climate Change Assessment (INCCA) is undertaking a major "4X4" assessment of the impacts of climate change on four sectors – water resources, agriculture, forests and human health – in four critical regions of India – the Himalayan region, North east, Western Ghats and Coastal India. This will be released in November 2010. INCCA is a network comprising 127 research institutions tasked

Name of Legislation	**Post-Copenhagen announced domestic actions (follow up of the 2008 Climate Action Plan)**
	with undertaking research on the science of climate change and its impacts on different sectors of the economy across the various regions of India.
	Launch of Indian satellite to monitor GHG emissions by 2013 on track.
	The Government of India has set up an Expert Group on Low Carbon Strategy for Inclusive Growth. The Group has been given the mandate to develop a roadmap for India for low carbon development. It will recommend prioritised actions in sectors such as Electricity, Transport, Industry, Oil and Gas, Buildings, and Forestry. The Group's recommendations will become a central part of India's 12th Five-Year Plan that will come into effect in 2012.
Mainstreaming climate change	State governments are preparing State-specific Action Plans on Climate Change, that draw upon India's National Action Plan and to operationalise state- level measures in mitigation and adaptation.
	Delhi became the first state to complete and launch their Action Plans. Most other States are finalising their Action Plans.
Adaptation	(cf2008 Climate Action Plan) The National Mission for Sustaining the Himalayan Ecosystem approved and launched. This Mission focuses on evolving suitable management and policy measures for sustaining and safeguarding the Himalayan glacier and mountain eco-system.

Name of Legislation	**National Solar Mission** (consequence of National Action Plan on Climate Change)
Date of entry into force	2010
Summary of bill	The Indian Solar Mission is a large-scale solar energy programme that will run from 2010 to 2022. Given the major policy focus of the Indian government to provide wider energy access in rural areas, the project promotes electricity generation from both small- and large-scale solar plants. The plan's long-term aim is to make solar competitive with fossil-based energy.
Driver for implementation	Renewable Energy
Energy - supply-side policies	The Solar Roadmap establishes specific installed capacity targets for three different periods of three and four years. It sets a goal of increasing production of photovoltaics to 1000 MW per year, and to deploy at least 1000 MW of solar thermal power generation. It sets specific goals for increasing use of solar thermal technologies in urban areas, industry, and commercial establishments. To support the Solar Roadmap, the government has set up a Power Purchase Tariff (PPT) fixed by the Central Regulatory Commission (CERC) and revised annually. The government also decided to reduce to 5% the customs levy on imports of machinery, instruments, equipment, and appliances used in solar PV and solar thermal plants. Domestic equipment will be exempt from the excise levy
Research and development	The Solar Mission will also stimulate national RD&D and academic research by providing innovation subsidies and scholarships to young scientists.

Name of Legislation	**Generation based incentives for wind power**
Date of entry into force	2008
Summary of bill	In July 2008, the Ministry of New and Renewable Energy (MNRE) launched a new generation-based incentive scheme for wind power production. The scheme is designed to promote investment in new and large independent wind power producers, to fulfil a target of securing 10 500 MW of new wind power capacity by 2012.
Driver for implementation	Renewable Energy

Name of Legislation	**Solar Power Generation Based Incentive**
Date of entry into force	2008
Summary of bill	In January 2008, the federal minister responsible for renewable energy announced that the Indian government would provide a subsidy for solar power plants to help develop renewable energy infrastructure.
Driver for implementation	Renewable Energy
Energy - supply-side policies	The subsidy will consist of 12 rupees (USD 0.30) per kilowatt- hour for solar photovoltaic power and 10 rupees per kilowatt- hour for solar thermal power fed to the electricity grid. A maximum capacity of 10 megawatts from each Indian state will be eligible under the scheme and 5 megawatts per developer. Capital investors will not be eligible to apply. Developers will sell electricity to state-run utilities and the incentives will be paid to them based on the tariff the utilities provide. The incentives, for a period of 10 years, will be over and above any financial assistance provided by the states.

Name of Legislation	**Energy Conservation Building Code**
Date of entry into force	2007
Summary of bill	The Energy Conservation Act of 2001 mandated the creation of the Bureau of Energy Efficiency (BEE), established in March 2002. The BEE was mandated with establishing an Energy Conservation Building Code (ECBC). A National building code was developed by the Bureau of Indian Standards, and last revised in 2005. However it does not specifically address energy efficiency issues. Rather, it promotes the use of new and innovative technologies and methods. This code serves as a building block to achieve the Sustainable Habitat mission of the National Climate Action Plan.
Driver for implementation	Energy Efficiency
Energy - demand-side policies	The code sets minimum requirements for building envelope components, lighting, HVAC, electrical system, water heating and pumping systems. It has been developed to account for five different climatic zones, particularly for envelope component requirements. It is not mandatory the first three years, and will become so in 2010, to allow the necessary implementation capacity to be developed. The code will be mandatory for all new buildings (commercial buildings or complexes) with a connected load of 500kW or more, or a contract demand of 600 kVA or greater. It will also apply to buildings with a conditioned floor space of 1 000m2 or greater.

Name of Legislation	**Ethanol Production incentives**
Date of entry into force	2007
Summary of bill	In October 2007, India's cabinet made a series of announcements regarding ethanol production and proposed an indicative target of 20% blending of biofuels, by 2017, both for bio-diesel and bio-ethanol. The government is formulating a national policy on biofuels to introduce financial incentives, develop R&D for production and commercialisation of ethanol and jatropha, and establish a national biofuel development board.
Driver for implementation	Biofuel
Energy - supply-side policies	Allowing sugar companies to manufacture ethanol directly from sugarcane juice (until that time, ethanol had been produced only from the sugarcane by product, molasses). - Extending a freight subsidy to sugar mills for exports by one year; the scheme was to end in April 2008; - Paying a uniform price of 21.50 rupees (USD0.54) per litre for ethanol. Since October 2007, 5% blending of ethanol with petrol has been mandatory and India's states have been given the option to increase this to 10%. 10% blending of ethanol with petrol will become mandatory from October 2008.

Name of Legislation	**Integrated Energy Policy**
Date of entry into force	2006
Summary of bill	At the direction of the Prime Minister and Deputy Chair of the Planning Commission, an expert committee was established to develop a comprehensive energy policy in 2004. The Integrated Energy Policy, released in August 2006, addresses all aspects of energy, including energy security, access and availability, affordability and pricing, efficiency and the environment. The Policy process was approved with the broad objective of "meeting energy demand "at the least cost in a technically efficient, economically viable and environmentally sustainable manner". It contains a number of policies that contribute to avoiding GHG emissions It received Cabinet approval in the last week of December 2008.
Driver for implementation	Energy framework
Monitoring arrangements	The Energy Coordination Committee (under the chairmanship of the prime minister of India)
Energy - supply-side policies	In relation to renewable energy, the policy proposed: - The phase-out of capital subsidies by the end of the 10th Plan linked to creation of renewable grid power capacity; - Requiring power regulators to seek alternative incentive structures that encourage utilities to integrate wind, small hydro, cogeneration and so on into their systems, and the linking of all such incentives to energy generated as opposed to capacity created; - Requiring power regulators to mandate feed-in laws for renewable energy, where appropriate, as provided under the Electricity Act 2003.The policy also made a range of more specific recommendations in relation to particular renewable energy sources, including mini hydro, wind and wood gasification power.

Name of Legislation	**Tariff Policy 2006**
Date of entry into force	2006
Summary of bill	In January 2006, the Ministry of Power announced the Tariff Policy, in continuation of the National Electricity Policy of 2005. The Tariff Policy included certain provisions regarding renewable energy and cogeneration. Under the Electricity Act 2003 and the National Tariff Policy 2006, the central and the state electricity regulatory commissions must purchase a certain percentage of grid-based power from renewable sources.
Energy - supply-side policies	The appropriate electricity commission is to fix a minimum percentage for purchase of energy from renewable and cogeneration sources, taking into account resource availability and impact on tariffs. Percentages for energy purchase were made applicable for tariffs to be determined by the State Electricity Regulatory Commission (SERC) by 1 April 2006. Procurement by distribution companies is to be done at preferential tariffs, determined by the appropriate commission, to encourage non-conventional energy technologies to eventually compete with conventional ones. Such procurement is to be done through a competitive bidding process.

Name of Legislation	**National Electricity Policy**
Date of entry into force	2005
Summary of bill	Government of India put out the National Electricity Policy as required by the Electricity Act of 2003. Among other goals, this policy stressed the need for the promotion of non-conventional energy sources.
Driver for implementation	Energy framework/Renewable
Energy - supply-side policies	The policy: noted the need to reduce the capital cost of projects based on non-conventional and renewable sources of energy; - Stressed the importance of promoting competition among renewables projects - Provided for state electricity regulatory commissions to increase progressively the share of electricity that must be purchased from non-conventional resources, and further provided that the purchase of such electricity should be conducted via a competitive bidding process. – - The policy suggests tax neutrality across energy sources. - The policy states that “maximum emphasis” would be put on the development of hydro-power. Use of thermal power could be made cleaner by using low-ash coal, improving lignite mining, and increased use of natural gas and nuclear power. It also calls for the use of the most efficient technologies and more funding for R&D
Energy - demand-side policies	The Policy emphasises the need for conservation and demand-side management including a national awareness campaign.

Name of Legislation	**National Auto Fuel Policy**
Date of entry into force	2003
Summary of bill	The National Auto Fuel Policy (2003) mandated that all new four-wheeled vehicles in eleven cities meet Bharat Stage III emission norms for conventional air pollutants, (similar to Euro III emission norms), and comply with Euro IV standards by 2010.
Driver for implementation	Transport/air pollution

Name of Legislation	**Electricity Act 2003**
Date of entry into force	2003 (Amended in 2007)
Summary of bill	The Electricity Act 2003 sought to better coordinate development of the power sector in India, providing a comprehensive framework for power development. Objectives include: consolidating laws relating to generation, transmission, distribution, trading and the use of electricity; and promoting competition in the industry; promoting efficient and environmentally benign policies, among others.
Driver for implementation	Energy framework
Energy - supply-side policies	The Act recognised the role of renewable energy in the country's National Electricity Policy and in stand-alone systems. Key provisions of the Act in relation to renewable energy include (IEA): - Preparation of a National Energy Policy and tariff policy based on optimal utilisation of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy; - The specification, by State Electricity Regulatory commissions, of the terms and conditions for the determination of tariffs, as guided by the promotion of cogeneration and the generation of electricity from renewable sources; - Promotion cogeneration and the generation of electricity through renewable sources by providing suitable means for connectivity with the grid and sale, and by specifying for the purchase from such sources a percentage of the total consumption of electricity in the area of a distribution licensee.

Name of Legislation	**Energy Conservation Act**
Date of entry into force	2001
Summary of bill	This Act requires large energy consumers to adhere to energy consumption norms; new buildings to follow the Energy Conservation Building Code; and appliances to meet energy performance standards and to display energy consumption labels.
Driver for implementation	Energy efficiency
Monitoring arrangements	The Act created the Bureau of Energy Efficiency to implement the provisions of the Act.
Energy - supply-side policies	The 2008 National Climate Action Plan builds on this legislation to achieve its energy efficiency target. The plan estimates that current initiatives based on the Energy Conservation Act of 2001, will yield 10 000 MW of savings by 2012.
Energy - demand-side policies	Today, under the Energy Conservation Act 2001, large energy-consuming industries are required to undertake energy audits and an energy-labelling programme for appliances has been introduced.

Name of Legislation	**Energy Conservation Awards**
Date of entry into force	1993 to today
Summary of bill	Programme: The Ministry of Power instituted National Energy Conservation Awards, coordinated by the Bureau of Energy Efficiency, to recognise industrial units that have made special efforts to reduce energy consumption. In the first five years, the participating industrial units collectively saved 2397 million units of electrical energy; 9067 kilo litre of furnace oil; 2.76 Mt of coal and 11,585 million cubic metre of gas per year, resulting in substantial reduction in greenhouse gas emissions.
Driver for implementation	Energy efficiency

4.8 Indonesia

4.8.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 498 334 na
Latest reporting year	1994
Importance as an emitter	top 5
Copenhagen Accord pledge (for 2020)	26% emission reduction by 2020 in relation to business as usual scenario to be achieved through 7 mitigation actions
Flagship legislation	Presidential Regulation on the National Council for Climate Change (2008)

4.8.2 Legislative Process

The Indonesian legal system is based on Roman-Dutch law, custom and Islamic law. The legislative power is bicameral and constituted by the House of People's Representatives (Dewan Perwakilan Rakyat or DPR) and the House of Regional Representatives (Dewan Perwakilan Daerah or DPD). The ensemble of DPR and DPD members forms a third representative body known as the People's Consultative Assembly (Majelis Permusyawaratan Rakyat or MPR). The DPR and the President jointly discuss and approve every Bill. Bills may come from the DPR, the President or the DPD.

With regards to the country's legislative response to climate change, although Indonesia has passed meaningful legislation, it is also the case that key initiatives are embodied in decrees and regulations passed by Ministries as opposed to parliamentarians. Moreover, despite the country's active response, legislation enforcement, corruption and land tenure issues seem to be the central challenges when it comes to action on climate change and deforestation. Still, Norway's recent pledge of USD 1 billion to help Indonesia cut emissions from deforestation and forest degradation has created momentum for a more comprehensive legal response to climate change.

4.8.3 Climate Change Legislation and Regulation

Climate change

Approximately 80% of the Indonesia's GHG emissions result from deforestation and the government has demonstrated a commitment to tackle climate change. President Susilo Bambang Yudhoyono made a bold pledge at the G-20 Summit in Pittsburgh, in September 2009, to voluntarily reduce emissions by 26% - and up to 41% depending on international support – by 2020 in relation to the business as usual scenario. The 26% target also corresponds to Indonesia's commitment with the UNFCCC, to be achieved through 7 mitigation actions; they are: (1) sustainable peat land management, (2) reduction in the rate of deforestation and land degradation, (3) development of carbon sequestration projects in forestry and agriculture, (4) promotion of energy efficiency, (5) development of alternative and renewable energy sources, (6) reduction in solid and liquid waste, and (7) shifting to low-emission transportation mode.

In addition, while the country is strongly committed to the principle of 'common but differentiated responsibility' it has adopted meaningful action. Namely, Indonesia launched the 'National Action Plan - Addressing Climate Change" when it hosted the 13th Conference of the Parties in Bali in 2007. The initiative does not have legislation status; still, it is a broad cross-sectoral plan including areas such as agriculture, forestry, industry, energy, and infrastructure as well as instruments like taxation, investment policies, awareness raising and others. In July 2008, the Plan was officially incorporated into the country's national development strategy under the coordination of the Ministry of Planning. Indonesia has also recently created the National Council on Climate Change in July 2008 through a Presidential Regulation. The Council, formed by 17 Ministers and chaired by the President, is in charge of coordinating Indonesia's climate change policies and international positions, including the creation of a cap-and-trade mechanism.

Deforestation

Indonesia has one of the highest rates of deforestation in the world. From 1990 to 2005 deforestation rates equalled nearly 28 million hectares; it is the world's third largest GHG emitter due primarily to forest loss. Yet, a letter of intent between the governments of Norway and Indonesia signed on May 26th, 2010 seems to have created momentum for a legal response to deforestation. The letter establishes a climate change partnership between the two countries intended to support the development and implementation of Indonesia's REDD+ strategy. It makes USD 1 billion available, conditional on monitored progress on the various projects to be implemented. In addition, the initiative will create an institution to monitor Indonesia's REDD+ plans as well as an independent Monitoring, Reporting and Verification (MRV) system for anthropogenic forest and peat land related greenhouse gas emissions.

The Indonesian government has responded quickly to the momentum created by the partnership with Norway as evidenced by a series of draft regulations proposed by the President in June-July 2010. The idea is that new legislation is passed swiftly with no

submission to Congressional voting. One of the draft decrees corresponds to a two-year moratorium on new applications for concessions on primary natural forests and peat lands. The Moratorium took effect in January 2011 and should be supported by Norwegian funding over the next five years. Yet, there is a great deal of uncertainty regarding the implementation of the moratorium; the full extent of the ban on new concessions for forestry, mining and agriculture; and the status of already issued concessions. With regards to the latter, the decree seems to first state that concessions already issued will remain valid to then state at a later point that the economic impact of revoking peatland permits in return for financial compensation will be assessed. As far as exemptions are concerned, one of the draft decrees states that projects of national significance such as geothermal, oil and natural gas would be exempt from the moratorium.

A further meaningful initiative to tackle forest loss is the Ministry of Forestry's One Billion Indonesian Trees regulation launched in January 2010. This amounts to an ambitious plan to plant 1 billion trees in 2010 to reduce carbon emissions and in compliance with international standards that see that all trees must be verified on the ground.

Renewable Energy

Indonesia's commitment to renewable energy is centred on the promotion of geothermal power and the development and use of biofuels. A comprehensive Geothermal Law (No. 27/2003) was passed in 2003 and over the 2007-2008 period, the country's geothermal power plant capacity increased by 317 MW (IEA). Moreover, the country has also passed a series of regulations in recent years and a Presidential Instruction on Biofuel Development in 2006 (No.1/2006). In general, action on renewables is pursued through more of a regulatory than a legislative approach.

Ministerial Regulation No. 32/2008 or the Biofuel Decree by the Ministry of Energy and Mineral resources establishes a mandatory utilisation framework in the transportation, industrial, commercial, and power generation sectors for biodiesel, bioethanol and bio-oil from 2009 to 2025. The minimal obligation level of biodiesel utilisation in all four sectors is set around 20% respectively in 2025, from around 1-2% in 2008. The Ministry of Energy and Mineral Resources has also launched the National Biofuel Roadmap 2006–2025 that establishes actions to accelerate the use of biofuels as a replacement of fossil-based fuel and targets 5% of biofuel utilisation in the energy mix, 20% biodiesel use on diesel fuel consumption and 15% bioethanol use in gasoline consumption by 2025. Besides, there is also the National Energy Blue Print (2005), a comprehensive development plan for the 15% of the country's electricity demand by 2025 should come from renewable energy sources. The main opposition to Indonesia's renewable energy initiatives comes from national and international civil society groups who point to a potential conflict between biofuel development and forest conservation objectives.

Indonesia: Flagship Legislation

Name of Legislation	**Presidential Regulation on the National Council for Climate Change (NCCC or DNPI)**
Date of entry into force	July 4, 2008
Summary of bill	Establishes the NCCC to coordinate climate change policy-making and strengthen Indonesia's position in international forums. The Council is composed of 17 Ministers and chaired by the President. The NCCC is to be assisted by the following Working Units: Adaptation, Mitigation, Transfer-of-Technology, Funding, Post-Kyoto 2012, and Forestry and Land Use Conversion.
Driver for implementation	Climate change, deforestation and land use
Putting a price on carbon	Establishes that the NCCC should formulate a mechanism and procedure for carbon trade.
Adaptation	The adaptation programme focuses on agriculture, disaster risk reduction, data dissemination and establishes an integrated development plan to improve climate-resilience.

Indonesia: Other Relevant Legislation

Name of Legislation	**Presidential Instruction No. 2/2008 - Regulation on Energy and Water Efficiency**
Date of entry into force	2008
Summary of bill	Sets out instructions to Ministers, Governors and Mayors to implement energy and water efficiency in government offices.
Driver for implementation	Energy efficiency, water efficiency
Energy – demand-side policies	Optimises national policy on energy and water efficiency through establishment of the National Taskforce for Energy and Water Efficiency. The main tasks are: • Researching, planning and preparing policies, strategies and programmes for energy and water efficiency, including energy conservation programme by taking into account that (1) most national energy and water are supplied with a subsidy, (2) tighten the non-essential use of energy and water use by ensuring it reflects the economic price, (3) ensuring the price of water and energy for industry reflects the true economic cost, (4) all government offices should take steps to improve energy and water efficiency. • Monitoring and reporting to the President.
Mainstreaming climate change	Establishes that all government offices should observe energy efficiency - lighting, AC, electricity equipment, official vehicle and other buildings, and water efficiency - in all activities that use water.

Name of Legislation	**Law No. 30/ 2007 - Energy**
Date of entry into force	2007
Summary of bill	Comprehensive energy legislation that stresses sustainable development, environmental preservation and energy resilience in national energy management
Driver for implementation	Renewable Energy, Energy Efficiency
Energy - supply-side policies	Establishes that more attention should be given to new and renewable energy development and that incentives should be developed for energy providers to promote this end. Promotion of national energy efficiency through: (1) creating an inventory of energy resources, (2) enhancing energy stocks, (3) outlining the energy balance, (4) diversification, conservation and intensification of energy and energy resources, (5) secure the distribution, transmission and storage of energy and energy resources. Providing energy for under-developed, remote and rural areas by using their energy potential, particularly renewable energy. Prioritisation of environmentally friendly technologies.
Research and development	The bill prioritises the development of environment-friendly technologies.

Name of Legislation	**Presidential Instruction No. 1/2006 on Biofuel Development**
Date of entry into force	2006
Summary of bill	Promotes the acceleration of biofuel utilisation with the view of substituting fossil fuel (especially oil) utilisation.
Driver for implementation	Renewable energy
Energy - supply-side policies	Sets out instructions to 13 Ministers, Governors and Mayors to take the necessary actions for biofuel development from supply (feedstock) through to commercialisation and consumption.
REDD/Land Use Policies	Issuing of forest utilisation permits for biofuel plants in critical or abandoned forest/land.
Transport Policies	Promotion of biofuel use, replacing fossil fuels, as an alternative for transportation.

Name of Legislation	**Law No. 27/2003 - Geothermal Law**
Date of entry into force	2003
Summary of bill	The Geothermal Law seeks to provide a stronger legal basis for upstream geothermal energy development, including private investments in the sector. The bill also seeks to expand regional autonomy to support sustainable energy alternatives to fossil fuels.
Driver for implementation	Renewable energy
Energy - supply-side policies	Establishes the regulatory structure for geothermal development. Geothermal Business Permits (IUP) are to be granted by the state through competitive bidding among prospective investors. In 2005, the Directorate of Geothermal Enterprise Supervision and Groundwater Management was created to strengthen the sector's management efficiency.

4.9 Italy

4.9.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 454 541 +0.4%
Latest reporting year	2008
Importance as an emitter	top 15
Copenhagen Accord pledge (for 2020)	As the EU: 20% from 1990 unilaterally; move to 30% as part of a global and comprehensive agreement for the period beyond 2012 and provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities
Flagship legislation	Climate Change Action Plan (2007)

4.9.2 Legislative Process

Italy has a bicameral political system. The lower house is the Chamber of Deputies and the upper house is the Senate. For a text to become law, it must receive the vote of both Houses independently in the same form. A bill is discussed in one of the Houses, amended, and approved or rejected: if approved, it is passed to the other House, which can amend it and approve or reject it.

Laws can rule directly, or trust the Government to issue a regulation ("*Regolamento*") in order to indicate how they should be enforced, or how citizens should ask for what they are entitled to. "*Regolamenti*" have the advantage that the Government can be swifter than the Parliament in updating them according to advances in technology, but they cannot always be used: some legal matters are reserved to Laws, and most "*Regolamenti*" have to be authorised by a specific law. A "*Regolamento*" may belong to one of these categories: Presidential Decree, Decree from the President of the Council of Ministers, or Ministerial Decree. The Presidential Decree is the most common and does not usually require prior authorisation by a law.

The Italian Constitution reserves some specific matters to Regions. Moreover the laws of the Republic may delegate power to the Region to issue norms for their enforcement.

4.9.3 Climate Legislation and Regulation

Climate change

Soon after Kyoto, the Inter-ministerial Committee on Economic Planning (CIPE) *resolution no.137/98* established the guidelines for the national policies and measures for the GHG emissions reduction. It also set the targets of such reduction for the period 2008-2012. These specific provisions on GHG emissions have been later confirmed by several pieces of legislation *(126/99; 123/02; Budget law 2007; Ministerial decree 25.11.2008)*. To partly implement these measures, the industry organisations, environmental NGOs, and other groups in Italy concluded an agreement with the government scheduled to begin in 1999, under which they agree to curb CO_2 emissions (*Voluntary Climate Pact*). Furthermore, the financial law, approved at the end of the year 2000 (*Finance Law 2001, Art 10),* established a fund for the reduction of atmospheric emissions and the promotion of energy efficiency and sustainable energy sources. The fund is financed from a portion equal to 3% of the receipts accruing from the *Law 23/12/1998 N.448* (carbon tax). However, the carbon tax law ended in 2002 and a 30 December 2004 law, *Number 311,* cancelled the provision entirely for economic reasons.

In 2002, the Environment Ministry released the government's strategy to cut national greenhouse gas emission. The plan relies on the Protocol's three flexible mechanisms of emissions trading and joint projects with other countries to deliver over half of the required emissions cuts. Several plans, that include a reforestation plan, are the basis of this strategy. For the most part, they have yet to be implemented. Five years later, in June 2007, the Italian parliament's environment committee set out a comprehensive action plan (*Climate Change Action Plan)* aimed at helping Italy comply with greenhouse gas reduction targets. The plan was later endorsed by the lower house, but has yet to be taken up by the government as national policy.

As a member of the European Union, Italy has implemented the EU Emissions Trading Scheme in 2006 *(Decree 4/4/2006 n° 216 transposed EU Directive 2003/87/CE)*. It issued two National Allocation Plans, the first one running from 2005 to 2007 (agreed on by the Italian Council of Ministers in 2004), and the second one running from 2008 to 2012 (finalised in early March 2008).

Energy efficiency

The ministerial decrees *no. 164 of 23 May 2000* and subsequent amendments, establish national targets for increasing energy efficiency in end-uses of energy up to 2012 for electricity and gas distributors. To reach these targets, Decrees voted 20 July 2004 require Italian electricity and gas suppliers to help their customers save energy and engendered the *2005 White Certificates trading scheme*. All Italian electricity and gas distributors with at least 100,000 end customers at the close of 2001 can- as of May 2006 - trade white certificates of certified energy savings. The White Certificates

represent marketable documents issued by the Energy Market Administrator testifying the energy saved by the energy distribution companies - as well as by their controlled partnerships - and by the Energy Service Companies (ESCO). In 2009 a new decree *(DL 02/2009)* was issued confirming the scheme's extension until 2012. In addition, it allows the programme to automatically renew for three additional years in 2012 unless steps are taken by parliament. In terms of efficiency, the Ministry of Environment said in January 2009 that the programme had prevented approximately 2 million tonnes of carbon dioxide emissions.

These measures are supplemented by other pieces of legislation addressing energy efficiency. The Reorganisation of Energy Sector Regulation *(Law 23rd August 2004, n.239)* devolved power to Italian regions to promote energy efficiency and renewable energy sources while maintaining the national scale of such promotion. Furthermore, the *Budget Law 2007* provides for various fiscal incentives and financial measures to improve energy efficiency and to abate emissions. Among them is the establishment of the "Revolving fund for Kyoto". It provides EUR 200 million for financing measures to promote GHG emission reductions for the period 2010-2012 and to achieve the targets. *The Law no. 102 of 3 August 2009,* concerning anti-crisis measures, includes three articles designed to accelerate the deployment of more advanced, efficient and energy-saving technologies. In 2010, a special fund to support the implementation of energy efficiency targets was set up *(Decree-Law of 25 March 2010, No 40)*.

Regarding energy efficiency, Italian legislation also includes the transposition of European directives such as the Implementation of EU Energy Performance of Buildings Directive (EPBD; *Directive 2002/91/CE*)*(Legislative Decree 19th August 2005, n. 192 and its corrections and integrations by Legislative Decree 29th December 2006, n. 311)*. Additionally, in accordance with *EU Directive 32/CE/2006,* Italy submitted its *National Energy Efficiency Action Plan* in July 2007. The proposed measures aim to achieve an energy saving target of 9.6% by 2016. The plan considers measures already undertaken under the budgetary law of 2007 and other measures, such as application of energy efficiency standards in buildings and the promotion of high efficiency CHP plants.

These measures are supplemented by regional law promoting energy efficiency, such as the *Umbria regional law n. 38, 20/12/2000* that aims at improving the level building's interior comfort and energy efficiency.

Renewable energy

Italy adopted a Green Certificates System (several decrees from 1999 to 2004) to increase its share of renewable energy in total energy supply. This cap-and-trade system requires Italian energy producers and importers (producing or importing more than 100 GWh/year from conventional sources) to ensure that a certain quota of electricity fed into the grid comes from renewable energy sources. The quota has been progressively strengthened (2002 an 2008). Producers and importers can buy green certificates through bilateral contracts or participating to the green certificates platform (managed by GME, the energy markets operator). Suppliers can fulfil the obligation by buying green certificates from entitled new renewable energy plants, by

building new renewable energy plants, or by importing electricity from new renewable energy plants from countries with similar instruments on the basis of reciprocity. The 2008 Budget Law *(Law No 244 24-12-2007 and Law No 222 29-11-2007)* raised the incentive period to 15 years. Therefore, renewable source plants that came into operation before 31 December 2007 can now obtain green certificates for 15 years.

This mechanism is supplemented by the *Legislative decree n. 387 of 29/12/2003* implementing *EU Directive 2001/77/EC,* that sets in 20 articles a national reference framework for the promotion of renewable energy sources (RES) and particularly for their use in micro-generation plants. Additionally, several national and regional incentives exist to promote solar and wind energy supply. At the national level, it includes the *New Feed-In premium for photovoltaic systems (Ministerial Decree 19/02/2007)*. At the regional level, it includes for instance the *Lazio Solar Thermal Water Heating programme.*

The policies regarding biofuel, build on various regional incentives as well as the CIPE (Interministerial Committee for Economic Planning) resolution of 15 February 2000, also known as the *Biomass Fuels National Plan (PROBIO)* that aims to promote the deployment of biomass to replace fossil fuels through incentive systems. The *decree no. 128/2005* established a national indicative target of 2.5% of substitution of traditional fuels with biofuels by 31 December 2010. From 1 January 2007 the quota for that date has been increased to 5.75% (European standard).

A number of incentives exist as well at the national and regional levels to promote cleaner transportation and vehicles. For instance, the *government Decree of Environment Ministry of 20 December 2000* creates incentives to encourage the sharing of private means of transport among several users, co-ordinated by local mobility managers for the creation of car crews. Additionally, in 2004, the Ministry of Environment has set up a programme that will reimburse Italian city governments up to 65% of the cost of adding environmentally friendly vehicles to each city's fleet.

Italy: Flagship Legislation

Name of Legislation	**Climate Change Action Plan**
Date of entry into force	2007
Summary of bill	In June 2007, the Italian parliament's environment committee set out a comprehensive action plan aimed at helping Italy comply with greenhouse gas reduction targets under the Kyoto Protocol. The plan was later endorsed by the lower house, but would now have to be taken up by the government as national policy.
Energy - demand-side policies	Among the proposals was a ban on the sale of household appliances ranked below A on the EU energy efficiency labelling scale. The industrial sector would be encouraged to switch to low energy devices and install more efficient engines and motors. Small and medium sized firms would be targeted. Energy saving would be encouraged through various incentives aimed at industrial and domestic consumers. Under a new system of energy tariffs, heavy users and daytime users would pay more per unit of energy. The committee also proposed a 10% increase in waste recycling and says this could prevent 4m tonnes of carbon dioxide emissions annually. It further sought a shift in goods transport to rail from road, which currently carries 85% of goods traffic.

Italy: Other Relevant Legislation

Name of Legislation	**2010 Finance Law**
Date of entry into force	2010
Summary of bill	The Finance law 2010 provides incentives for energy efficient buildings and the use of biofuel.
Driver for implementation	National finance
Energy - demand-side policies	In June 2009, a new regulation requires that all buildings bought, sold or leased, residential or commercial, will require an energy performance certificate as of 25 July 2009. The measure applies to new and refurbished buildings. Guidelines for energy performance certificates were issued in July 2009. Traditional fossil fuels are subject to specific excise duties on the basis of weight or volume units. Biofuels are incentivised through a reduction of this excise duty. In particular, the Budget law 2010 defines a maximum of 18,000 tons of biofuels that can benefit from this reduction. Italian legislation also provides that fossil fuel producers should annually supply a minimum quota of biofuels based on the total amount of fuel supplied during the previous year.

Name of Legislation	**Special fund to support the implementation of energy efficiency targets** (Decree-Law of 25 March 2010, No 40,)
Date of entry into force	2010
Summary of bill	This decree established a special fund for the implementation of objectives related to energy efficiency, environmental protection and workplace safety. The Decree of 26 March 2010 specifies the activities towards which funding is dedicated.
Driver for implementation	Energy Efficiency
Energy - demand-side policies	The fund provides incentives for the following: High efficiency appliances, replacing motorcycles, purchase of new energy efficient buildings, purchase and installation of inverters, high efficiency motors, uninterruptible power sources, purchase of newer and more efficient farm machinery and machinery for construction and boats

Name of Legislation	**Cleaner vehicle purchase incentives** (Decree Law No. 5 of 2009)
Date of entry into force	2009
Summary of bill	In February 2009, as part of measures aimed at supporting industrial sectors in crisis, Italy's Council of Ministers launched a temporary incentive scheme for consumers to replace their old vehicles with new ones meeting certain environmental criteria.
Driver for implementation	Economy/transport
Energy - demand-side policies	The scheme applies to cars, light commercial vehicles, as well as motorcycles and scooters. The incentives are provided in the form of a discount obtained by consumers directly from the dealers, who in turn receive this as a tax credit. A bonus of EUR 1500 is provided when a car older than 9 years meeting Euro 0, 1 or 2 standards is exchanged for a new vehicle meeting Euro 4 or 5 standards and that emits a maximum of 130g CO_2/km for diesel cars or 140g CO_2/km for others. The exchanged vehicle must have been registered by December 1999. This can be combined with a purchase incentive of EUR 1500 should the new vehicle run on electricity, hydrogen or methane. Similar bonuses are provided for lightweight commercial vehicles, motorcycles and scooters

Name of Legislation	**Law concerning anti-crisis measures: energy provisions** (The Law no. 102 of 3 August 2009,)
Date of entry into force	2009
Summary of bill	The Law no. 102 of 3 August 2009, concerning anti-crisis measures, includes three articles designed to accelerate the deployment of more advanced, efficient and energy-saving technologies.
Driver for implementation	Economy
Energy - demand-side policies	Art. 5 concerning the tax reduction for investment in capital goods (appliances and equipment); while the law does not specify energy performance thresholds for the equipment, the measure aims to encourage the replacement of existing equipment with newer, more efficient technology. • Art. 6 concerning depreciation rates for capital goods investments: it provides that depreciation rates vary for equipment using more advanced technology and in relation to their energy performance, in order to take account of the evolving impact on production processes of more efficient equipment. • Art. 6 bis concerning measures for business activity in public transport sector: provides grants to companies for the purchase of new buses that meet Euro 4 or Euro 5 emission standards.

Name of Legislation	**Finance Law 2008** (Law No 244 24-12-2007 and Law No 222 29-11-2007); M.D. 18.12.08; Law 99/09)
Date of entry into force	2008
Summary of bill	Finance Law 2008 confirmed the 2007 Budget law measures, and extended the deadline of borne expenditures from December 2007 to 2010
Driver for implementation	National finance
Putting a price on carbon	The revisions concerning green certificates are twofold. First, the incentive period is raised to 15 years. Second, the number of certificates issued varies depending on the type of renewable source, according to a coefficient multiplicative energy produced
Energy - supply-side policies	The 2008 Budget Law includes new measures relating to the production of electricity from renewable energy sources. In particular, it introduced the possibility for small renewable plants (<1 MW and < 200 kW for wind plants) commissioned after 1 January 2008 to choose between Green Certificates and a feed in tariff mechanism (called "all inclusive tariff") for an incentive period of 15 years. Both Green Certificate and All Inclusive Tariff are differentiated by renewable energy source.

Name of Legislation	**New Feed-In premium for photovoltaic systems** (Ministerial Decree 19/02/2007)
Date of entry into force	2007
Summary of bill	The Ministerial Decree of 19 February 2007 introduced in Italy a new version of the feed-in premium scheme applied to photovoltaic plants connected to the grid with a nominal capacity higher than 1 kWp realised by individuals, registered companies, condominiums and public bodies.
Driver for implementation	Renewable Energy
Energy - supply-side policies	The decree provided a set of tariffs, valid for a period of 20 years, with a bonus in case of high degree of photovoltaic integration in the buildings.

Name of Legislation	**2007 Finance law**
Date of entry into force	2007
Summary of bill	The Budget Law 2007 provides for various fiscal incentives and financial measures to improve energy efficiency and to abate emissions.
Driver for implementation	National finance
Energy - supply-side policies	The Budget law 2007 also established an obligation for all traditional fuel producers to supply, each year, a minimum quota of biofuels determined as a percentage of the previous year's total supply volume. The initial quota was 1% for 2007; subsequently it has been increased to 2% for 2008 and 3% for 2009. Non-compliance with the quota is subject to penalties: The Ministry of agriculture and forestry is responsible for verifying the fulfillment of this obligation.
Energy - demand-side policies	-The 2007 Finance law introduced tax allowances for the purchase or installation of high-efficiency electric motors. -The 2007 Finance law introduced tax allowances for the purchase of high-efficiency fridges and freezers. -Reduction of duty for biofuels used for transport. -Fiscal incentives for enhancing energy efficiency and use of renewable energy in buildings; The Budget law 2007 also established the so called "Revolving fund for Kyoto": it provides EUR 200 million for financing measures to promote GHG emission reductions for the period 2010-2012 and to achieve the targets. It finances for instance: - a high performance micro-cogeneration plant - Electricity and heating production from small-scale renewable energy sources - High efficiency electric motors (more than 45 kW) - Improving end-use energy efficiency in the civil sector - R&D for new technolgoies, low or zero emissions energy sources

Name of Legislation	**White Certificate Trading for End-Use Energy Efficiency**
Date of entry into force	2005
Summary of bill	Decrees voted 20 July 2004 require Italian electricity and gas suppliers to help their customers save energy and engendered the 2005 White Certificates trading scheme. The two decrees of 20th July 2004 repealed the two decrees of 24th April 2001 about the identification of quantitative national targets for energy savings and development of renewable sources.
Energy - demand-side policies	In compliance with specific energy conservation targets, all Italian electricity and gas distributors with at least 100,000 end customers at the close of 2001 can- as of May 2006 - trade white certificates of certified energy savings. The White Certificates represent marketable documents issued by the Energy Market Administrator testifying the energy saved by the energy distribution companies - as well as by their controlled partnerships - and by the Energy Service Companies (ESCO). The White Certificates can be exchanged by means of bilateral contracts, or in the frame of a specific market ruled by GME. Energy service providers, subsidiaries of electricity and gas distributors and distributors themselves will all sell energy efficiency certificates (white certificates) each representing primary energy savings of one tonne of oil equivalent (toe). Distribution companies must meet specified energy savings targets, either by implementing energy conservation projects that benefit their customers, which will earn them white certificates, or through the purchase of white certificates produced by energy conservation projects undertaken by others.

Name of Legislation	**Biofuel** (decree no. 128/2005)
Date of entry into force	2005
Summary of bill	The decree no. 128/2005 established a national indicative target of 2.5% of substitution of traditional fuels with biofuels by 31 December 2010. From 1 January 2007 the quota for that date has been increased to 5.75%.
Driver for implementation	Biofuel

Name of Legislation	**Reorganisation of Energy Sector Regulation** (Law 23rd August 2004, n.239)
Date of entry into force	2004
Summary of bill	In 2004, the Italian state devolved power to Italian regions to promote energy efficiency and renewable energy sources while maintaining the national scale of such promotion.
Energy - supply-side policies	Within the strategic law, several measures served to reorganise the energy markets and encourage competition. It includesthe expansion of the green certificite trading from renewable and CHP projects to include hydrogen The law also reduces the size of green certificates from the initial value of 100 MWh to 50 MWh.
Mainstreaming climate change	Power devolved to regions to promote enegy efficiency and reneable

Name of Legislation	**Introduction of the Green Certificates System** (Legislative decree 79/99 of 16 March 1999 entitled; Ministry of Productive Activities decree 18.03.02; Followed by Ministry of Productive Activities decree 14.03.04, implementing the rules for the green certificates)
Date of entry into force	2002
Summary of bill	This legislation completes the introduction of cap-and-trade mechanism to promote renewable energy sources (MICA Decree11/11/99). It introduces the Green Certificates that Producers and importers can buy.
Driver for implementation	Renewable Energy
Emission reduction targets	A CO_2 reduction of about 4Mt - 6Mt by 2006 is expected.
Energy - supply-side policies	The 1999 Electricity Liberalisation Act and Decrees from Italy's Ministries of Trade and Industry and of Environment (MICA Decree 11/11/99) introduced a cap-and-trade mechanism to promote renewable energy sources. It required Italian energy producers and importers (producing or importing more than 100 GWh/year from conventional sources) to ensure that a certain quota of electricity fed into the grid comes from renewable energy sources. A 2% quota obligation was set, strengthened in 2003 and again in 2008. Producers and importers can comply with the obligation is by means of green certificates. They can buy those certificates through bilateral contracts or participating to the green certificates platform (managed by GME, the energy markets operator). Suppliers can fulfill the obligation by buying green certificates from entitled new renewable energy plants, by building new renewable energy plants, or by importing electricity from new renewable energy plants from countries with similar instruments on the basis of reciprocity. Renewable source plants that came into operation before 31 December 2007 can obtain green certificates for 12 years. Subsequent regulatory interventions have increased the incentive period to 15 years.

Name of Legislation	**Strategy to Cut National Greenhouse Gas Emissions** (Kyoto implementation)
Date of entry into force	2002
Summary of bill	The Environment Ministry released the government's strategy to cut national greenhouse gas emissions by 6.5% on 1990 levels by 2008-12, as agreed under the Kyoto Protocol.
Driver for implementation	Climate
Putting a price on carbon	The plan relies on the Protocol's three flexible mechanisms of emissions trading and joint projects with other countries to deliver over half of the required emissions cuts.
Emission reduction targets	The estimated 93m tonnes of carbon dioxide (CO_2) cuts needed are to be achieved through existing - but yet to be implemented - plans (reducing emissions by 52m tonnes) plus reforestation (minus 10.2m tonnes). The remaining 30m tonnes are to be cut through measures yet to be detailed.

Name of Legislation	**Fund for GHG emissions reduction and energy efficiency** (Finance Law 2001Art 10)
Date of entry into force	2001
Summary of bill	The financial law, approved at the end of the year 2000, establishes a fund for the reduction of atmospheric emissions and the promotion of energy efficiency and sustainable energy sources. The fund is financed from a portion equal to 3% of the receipts accruing from the Law 23/12/1998 N.448 (carbon tax).
Driver for implementation	Climate/energy
Energy - supply-side policies	Among other activities, the fund will finance up to 80% of the cost of programmes for installation of solar collectors (mostly PV), particularly in southern Italy
REDD/Land Use policies	The fund will also finance reforestation programmes to increase absorption of CO_2.

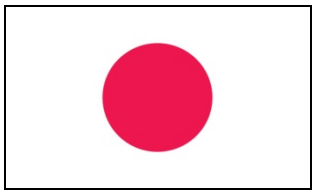
Name of Legislation	**Utility targets for increasing energy efficiency/ introduction white certificates** (Ministerial Decree, 24.004.2001)
Date of entry into force	2001
Summary of bill	The ministerial decrees no. 164 of 23 May 2000 and subsequent amendments, establish national targets for increasing energy efficiency in end-uses of energy up to 2012 for electricity and gas distributors.
Driver for implementation	Energy Efficiency
Energy - demand-side policies	Under the Italian legislation those companies that carry out energy efficiency improvement projects related to district heating, including use of renewable energy sources and technologies, can get the white certificates, tradable on a specific environmental exchange managed by GME. (C.F. 2004 decrees and AEEG Deliberation n.103/03|AEEG Deliberation n. 98/06)

Name of Legislation	**National Plan for Biofuels and biomass** (CIPE resolutions: 15-feb-2000 (PROBIO); 24-Jun-1998 (PNERB); 18-Jun-1999 (PNVBAF))
Date of entry into force	2000
Summary of bill	CIPE (Inter-ministerial Committee for Economic Planning) resolution of 15 February 2000, also known as the Biomass Fuels National Plan (PROBIO) aims to promote the deployment of biomass to replace fossil fuels through incentive systems. This is projected to affect mainly the agricultural, transport and energy sectors.
Driver for implementation	Biofuel
Energy - supply-side policies	It represents the first operative tool of the two CIPE resolutions "National Programme for the Valorisation of Agricultural and Forestry Biomass (PNVBAF)" and the "National Programme for the Energy Valorisation of Biomass (PNERB)", which set goals for the reduction of greenhouse gases (3-4% by 2010/12), the production of renewable energy from agro-forestry products and by-products, the development of eco-compatible agricultural methods and increased use of energy crops.

Name of Legislation	**Voluntary Climate Pact**
Date of entry into force	1999
Summary of bill	In December, 1998, industry organisations, environmental NGOs, and other groups in Italy concluded an agreement with the government scheduled to begin in 1999, under which they agree to: curb CO_2 emissions; improve energy efficiency in the industrial, energy, and transport sectors; and promote the use of renewable energy.
Driver for implementation	Climate Change
Monitoring arrangements	Italian Environment Ministry

Name of Legislation	**Provisions on GHG emissions reduction (Kyoto targets)** (CIPE resolutions: 137/98; 126/99; 123/02; Budget law 2007; Ministerial decree 25.11.2008.)
Date of entry into force	1998
Summary of bill	The Inter-ministerial Committee on Economic Planning (CIPE) resolution no.137/98 establishes the guidelines for the national policies and measures for the GHG emissions reduction. It also sets the targets of such reduction for the 2008-2012. A further CIPE deliberation known as the "Italian white paper on renewable energy" (CIPE resolution no. 126/99) identifies, for each renewable source, the targets that have to be achieved in order to realise the planned reduction and the relative strategies and instruments needed. In 2002 the targets have been revised through the publication of the CIPE resolution no.123.
Driver for implementation	Climate Change
Emission reduction targets	It sets the targets of such reduction for the 2008-2012 (6,5% on 1990 levels)

4.10 Japan



4.10.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 1,203 1,282 -0.2%
Latest reporting year	2008
Importance as an emitter	top 10
Copenhagen Accord pledge (for 2020)	25% from 1990, premised on the establishment of a fair and effective international framework in which all major economies participate and on agreement by those economies on ambitious targets
Flagship legislation	Law Concerning the Promotion of the Measures to Cope with Global Warming (Act on Promotion of Global Warming Countermeasures)

4.10.2 Legislative Process

Japan has a civil law system. The National Diet of Japan is the sole law-making organ of the State based on the Constitution and is Japan's bicameral legislature. The Diet is made up of two houses, the House of Representatives (the lower house) and the House of Councillors (the upper house). Under the Japanese legislative process, many draft bills come from government agencies, then submitted to the Diet through the Cabinet. To become law, a bill must pass both houses of the Diet. Japanese laws are written laws of various forms in a certain hierarchy, headed by the Constitution. Statutes are often sorted, by the nature of subject, into the public and private laws, or into substantive and procedural laws. The sources of Japanese law include: Constitution, Treaties and International Agreements, Codes and Laws/well-established customs, Cabinet Orders, Ministry Ordinances and Ministry Notifications.

4.10.3 Climate Legislation and Regulation

Climate Change

In 1998 Japan introduced the *Guideline of Measures to Prevent Global Warming* and

Law Concerning the Promotion of Measures to Cope with Global Warming (Act on Promotion of Global Warming Countermeasures), which created a legal framework for climate change policy. The Law stipulates that a plan for reaching Japan's target should be established when the Kyoto Protocol comes into effect. In response to the Protocol coming into effect in 2005, following Russian ratification in 2004, the Kyoto Protocol Target Achievement Plan was established. In 2007, the revised Act on Promotion of Global Warming Countermeasures provided that a study shall be conducted concerning the targets and programs prescribed in the Kyoto Protocol Target Achievement Plan and that any changes to the Plan should be promptly enacted if found necessary based on the results of the study. The Plan was completely revised in March 2008. Most recently, a new Japanese bill of the *Basic Act on Global Warming Countermeasures* was approved by the cabinet on March 12 2010, and submitted to the Diet. It passed the Lower House in May 2010 but has stalled in the Senate. An amended version of the bill was again passed by the Cabinet in the autumn but will need to pass both Houses to become law. If passed, the bill would put into legislation emissions reduction targets of 25% below 1990 levels by 2020 and 80% below 1990 level by 2050 and would set up a national cap-and-trade scheme as the major delivery mechanism. The draft bill also includes a target to produce 10% of primary energy supply from renewable sources by 2020, including the introduction of a feed-in tariff.

Energy

The two oil crises in the 1970s triggered legislation of the *Law Concerning the Rational Use of Energy* in 1979 in order to promote the initiatives on energy conservation to reduce the total energy demand. It has been amended 6 times and the latest one is in 2008. In order to initiate the energy policy in a comprehensive and consistent manner, the *National Fundamental Law on Energy* was enacted in June 2002. This law sets the basic principles regarding energy policy as: 1. Energy security; 2. Adaptability to the environment; and 3. Utilisation of market mechanism based on the careful consideration of these points. According to these principles, the government was directed to draft and publish the Basic Energy Plan in order to promote energy demand and supply related policies in a long-term, comprehensive, and strategic manner.

Land

The new Japanese bill of the *Basic Act on Global Warming Countermeasures* requires the government to establish and implement comprehensive national land plan, and the basic urban plan, etc. The Soil Contamination Countermeasures Act (Act No. 53 of 2002) aims to protect the health of the citizens rather than climate protection.

Japan: Flagship Legislation

Name of Legislation	**Law Concerning the Promotion of the Measures to Cope with Global Warming (Act on Promotion of Global Warming Countermeasures)**
Date of entry into force	Passed Oct. 9, 1998; amended in 2003, came into force on 16 February 2005.
Summary of bill	All the clauses of the Act amended in 2003. The main points of the amendments are as follows: Establishment of the Council of Ministers for Global Environmental Conservation by law; Development of the Kyoto Achievement Plan; and Stipulation of the establishment and implementation of countermeasures by local governments.
Driver for implementation	Climate Change
Monitoring arrangements	It requires the increase of clerical work that is under the control of the Global Warming Prevention Headquarters, and requires those who emit more than a certain amount of global warming gases to assess and report the global warming gas emissions to the government. It also requires the government to introduce the system to compile and publish these data reported to the government.

Japan: Other Relevant Legislation

Name of Legislation	**Law Concerning the Rational Use of Energy (Energy Conservation Act, Law No. 49)**
Date of entry into force	Passed in 1979, enforced in Oct. 1979; 1st amendment n 1983, enforced in Dec. 1983; 2nd amendment in 1993, enforced in Apr. 1993; 3rd amendment in 1998, enforced in Apr. 1999; 4th amendment in 2002, enforced in Apr. 2003; 5th amendment in 2005, enforced in Apr. 2006; 6th amendment in 2008, enforced partly in April 2009 and wholly in April 2010.
Summary of bill	The Law is the pillar of Japanese energy conservation policies. It was enacted in 1979 in the light of the oil shock. It covers all sectors as following: Energy management in manufacturing, commercial and transportation sectors; energy efficiency standards for vehicles and appliances; energy efficiency standards for houses and buildings. In 2008, the Law was revised to strengthen measures to enhance energy efficiency, including those for the commercial sector. Also in this revision, sectoral approaches used in domestic regulation was introduced.
Driver for implementation	Energy Efficiency
Monitoring arrangements	It provides a regulatory framework for mandatory and voluntary energy audits.
Energy - demand-side policies	The Law stipulates rules for rational energy use in buildings. It requires that manufactures and importers of equipment such as automobiles, air-conditioners or other electrical or heating using appliance ensure the rational use of energy by that equipment.

Name of Legislation	**Law Concerning the Rational Use of Energy and Recycled Resources Utilisation (Energy Conservation and Recycling Assistance Act)**
Date of entry into force	Came into force on 25 June, 2003; revised in 1 October, 2003 and determined to be extended until 31 March, 2013.
Summary of bill	The Law is designed to support business operators voluntarily implementing projects to promote the rationalisation of the use of energy and natural resources. It covers 3R (Reduce, Reuse, Recycle) concept based activities, additional financial assistance for overseas energy conservation or CO_2 emission reduction projects, and the use of Kyoto Mechanisms (CDM and JI projects). From its inception, this Act has assisted business operators who voluntarily undertake activities such as the rationalisation of energy use and the use of recycled resources, including the provision of fiscal and financial incentives, such as low-interest loans.
Driver for implementation	Energy Efficiency
Putting a price on carbon	Low-interest loan, tax incentives and subsidy for introducing energy efficient equipment and facilities.
Energy - demand-side policies	The following three categories of activities are defined as "specific business activities" and any business operator, or other agent carrying out these activities can submit an activity plan to the competent minister for approval: 1) Installing new equipment or improving existing equipment contributing to the rationalisation of energy use in a factory or other business location; 2) The use of building material, the installation or improvement of any equipment contributing to the rationalisation of energy use in the construction of a building; 3) Conducting R&D on the manufacturing technique of an industrial product contributing to the rationalisation of energy use. Moreover, heat supply facilities that are necessary to establish the effective energy utilisation system will be designated as "specified facilities." The effective energy utilisation system includes "the large-scale cogeneration regional heat supply system" or "the cascade heat utilisation-type industrial complex."

Name of Legislation	**National Fundamental Law on Energy (Basic Act on Energy Policy)**
Date of entry into force	Came into force June 14, 2002
Summary of bill	A lawmaker-initiated legislation, it sought to set out the country's fundamental and overall energy policy direction after the approval of the Diet.
Driver for implementation	Energy Security, General Energy Policy
Putting a price on carbon	It sets the principles on utilisation of market mechanisms.
Adaptation	It sets the principles regarding adaptability to the environment.

Name of Legislation	**Law Concerning Special Measures for Promotion of New Energy Use (Special Measures Law for Promoting the Use of New Energy)**
Date of entry into force	Came into force June 23, 1997; amended in January 2002
Summary of bill	The Law aims to accelerate the advancement of the introduction of New Energy. This Law, while clarifying the role of each area for the overall advancement of New Energy usage, provided for financial support measures for utilities that use new energy. Based on this Law, a fundament policy to provide for basic matters concerning measures for each area that the public, utilities, and governments should consider was determined in September 1997. The amendment in 2002 added "New Energy use, etc." to Article 1 of the Act. Then, Biomass Energy and Cool Energy could be added. In April 2008, the definition of "New Energy" was been changed and almost equivalent to renewable energy, but large-size hydropower generation and geothermal power are excluded.
Driver for implementation	Renewable Energy
Energy - supply-side policies	New energy use (e.g. biomass energy and cool energy)

Name of Legislation	**Law Concerning Promotion of Development and Introduction of Oil Alternative Energy**
Date of entry into force	Came into force in 1980
Summary of bill	After the oil price crises in the 1970s, the Japanese government enacted this Law and implemented measures for development and introduction of alternatives to oil, including renewable energy.
Driver for implementation	Renewable Energy
Monitoring arrangements	Under the Law, the New Energy Development Organisation (NEDO; from 1988, the New Energy and Industrial Technology Development Organisation) was established in October 1980. In 2003, NEDO was reorganised as an Incorporated Administrative Agency.
Energy - supply-side policies	
Energy - demand-side policies	

4.11 Mexico

4.11.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 709 639 +40% (change from 1990-2006)
Latest reporting year	2006
Importance as an emitter	top 15
Copenhagen Accord pledge (for 2020)	30% GHG emissions reduction with respect to business as usual scenario by 2020 (given adequate financial and technical support from developed countries)
Flagship legislation	Law for the Use of Renewable Energies and for the Finance of the Energy Transition (LAERFTE) (2008)

4.11.2 Legislative Process

Mexico has a bicameral legislature and is constituted by the Chambers of Deputies and the Senate. For a bill to become law, both Chambers need to approve it, after which it is sent to the Executive for sanctioning and official publishing. The Senate addresses all matters concerning foreign policy, approves international agreements, and confirms presidential appointments. The Chamber of Deputies addresses all matters pertaining to the government's budget and public expenditures.

In general terms, Mexico possesses a solid base of environmental legislation. With regards to climate change specifically, although the country has recently been rather active in this domain, such initiatives are translated into programmes of action and strategies as opposed to legislation. Still, the issue is treated indirectly in a series of recent laws concerning renewable energy and energy efficiency. In addition, the fact that the country will be hosting the UNFCCC's 16th Conference of the Parties in December 2010 in Cancún seems to have created momentum for action and the development of legislation addressing climate change directly.

4.11.3 Climate Change Legislation and Regulation

Climate change

Mexico's efforts to tackle climate change at the federal level amount to a series of strategies and programmes of action that have been successively implemented in the past five years. Namely, the Inter-Secretariat Commission on Climate Change, launched in 2005 via presidential agreement, was the first initiative to address the issue directly. It was followed by the National Strategy on Climate Change, launched in 2007 and concerned with putting forward a line of action to inform mitigation and adaptation efforts in Mexico. The National Development Plan 2007-2012, in turn, included an environmental sustainability axis concerned with addressing climate change. Finally, the Special Programme on Climate Change 2009-2012 is currently responsible for establishing goals, targets and actions necessary to promote climate change mitigation in the short-term while securing Mexico's economic competitiveness and allowing time for the development of adaptation strategies. The government expects that full implementation of the latter should achieve a reduction in total annual emissions of 51 million tons of CO_2 by 2012 in relation to the business as usual scenario.

On the international front, Mexico has been one of the most active developing countries in relation to conducting and updating the UNFCCC's National Inventories on Greenhouse Emissions. It was the first developing country to submit the Fourth National Communication. Additionally, the prospect of hosting the COP16 in 2010 has created momentum in Mexico for addressing climate change as evidenced by the recently proposed General Law on Climate Change and the General Law on Adaptation and Mitigation, both recently presented to the Mexican Congress.

The General Law on Climate Change was proposed on March 24th 2010 by the Parliamentary Group of the National Action Party (PAN) in the Senate. Its main objective is to tackle climate change and harmonise existing initiatives through the creation of a National System for Climate Change. The bill also emphasises Mexico's vulnerability to climate change due to its geographical position, thus placing particular focus on both the need for mitigation and adaptation frameworks, and securing sources of financing. In this context, the creation of the Mexican Green Fund is proposed to finance mitigation and adaptation efforts drawing on the support of national and international financial organisms. Moreover, the System would count with a Commission on Climate Change, which, among other things, would promote and approve climate change mitigation and adaptation projects; establish the technical and judicial basis for a Carbon Emissions Market; and approve the National Strategy on Climate Change. A National Emissions Register would also be created.

The proposed General Law on Adaptation and Mitigation was introduced to Congress on November 23rd. Proposed by the Parliamentary Group of the Revolutionary Democratic Party (PRD) it looks to establish the policies, strategies, programs and general actions for climate change adaptation and mitigation. It also establishes that responsibilities to tackle climate change will be distributed among the Federation, States and Municipalities. This initiative provides a framework for the participation of civil society in activities related to adaptation and mitigation. It would create a

National System for Adaptation and Mitigation to Climate Change as well as a Scientific Council responsible for elaborating the National Strategy for Adaptation and Mitigation to Climate Change. The law´s main objectives would be to promote sustainable development, energy security, clean and efficient production process, and natural resource preservation.

These two proposals demonstrate that climate change is high on the priority list for Mexican legislators and, although the proposals vary in approach, they share a common aim – to tackle the causes of climate change prepare Mexico for the inevitable impacts.

Renewable Energy and Energy Efficiency

Mexico has recently been rather active in the development of legislation promoting the use of renewable energy and energy efficiency. In fact, some of its most recent and most comprehensive bills, the Law for the Use of Renewable Energies and for the Finance of the Energy Transition (LAERFTE) and the Law for Sustainable Energy Use (LASE) were actually passed on the same date, on October 28th 2008. In September 2009 a fund for renewable energy was created at the initial value of MXN 3 billion. In a similar vein, the Law of Bioenergy Promotion and Development was passed in late 2007 with the purpose of developing bio-energy in the country, thus contributing to energy diversification and sustainable development while supporting rural areas and promoting social inclusion. A common characteristic in the structure of these bills is that they all draw a broad framework for action and request the establishment of multiple bodies and funding mechanisms. In this sense, they represent the very first step, a binding commitment of future action.

Mexico: Flagship Legislation

Name of Legislation	**Law for the use of Renewable Energies and Funding of the Energy Transition (LAERFTE)**
Date of entry into force	November 28, 2008
Summary of bill	Seeks to reduce Mexico's dependence on hydrocarbons as the primary source of energy. Promotes and regulates the use of renewable energy sources and clean technology for electricity generation through the Special Programme for Renewable Energy Use. Establishes the National Strategy for the Energy Transition and Sustainable Energy Use and the Energy Transition Fund charged with creating financial mechanisms to support the energy transition. The Secretariat of Energy is responsible for the implementation of the law.
Driver for implementation	Climate Change, Renewable Energy, Energy Efficiency
Monitoring arrangements	The regulatory instruments overseeing the services exchanged between energy suppliers and generators will be established by the Secretariat of Energy. The National Center for Energy Control will observe the adequacy of the rules and the fulfillment of the law.
Putting a price on carbon	Determines that the Federal Executive, in the context of the National Strategy for the Energy Transition and Sustainable Energy Use, will design policies and measures to facilitate the inflow of resources from international mechanisms related to climate change mitigation.
Energy - supply-side policies	Promotes renewable energy generation including wind, solar, geothermal and hydropower. Charges the Regulatory Commission on Energy with creating methodologies to assess the contribution of renewable energy technologies to the National Electric System. In September 2009, a new regulation on the law created a 14 member National Consultative Council for Renewable Energy. This new regulation charged the Secretariat of Energy with establishing a National Inventory of Renewable Energy and a methodology to value the externalities of renewable electricity generation vis-à-vis fossil fuels. In preparation for the

Name of Legislation	**Law for the use of Renewable Energies and Funding of the Energy Transition (LAERFTE)**
	Special Programme, the Secretariat of Energy is also meant to create an annual forecast on the penetration rate of renewable energy so as to establish targets for renewable electricity.
Mainstreaming climate change	The Secretariat of Energy, in coordination with the Secretariat of the Economy, is in charge of designing policies and measures to promote greater national integration between staff teams and members for the use of renewable energy and its efficient transformation.

Mexico: Other Relevant Legislation

Name of Legislation	**Law for Sustainable Energy Use (LASE)**
Date of entry into force	November 28, 2008
Summary of bill	Creates the National Programme for Sustainable Energy Use to attain optimal energy use in all processes and activities from exploitation to consumption. Establishes the National Commission for the Efficient Use of Energy, an organ with technical and operational autonomy charged with promoting energy efficiency, and the Consultative Council for Sustainable Energy Use formed by six experienced academics. The bill also creates the National Information Sub-system on Sustainable Energy Use. The bill is to be implemented by the Secretariat of Energy.
Driver for implementation	Energy Efficiency
Monitoring arrangements	The Secretariat of Energy shall periodically revise the Programme and publish the results in the Federation's Official Gazette. The Consultative Council shall evaluate the fulfilment of the Programme's objectives. The National Commission shall request verification visits and information from those engaged in activities related to the sustainable use of energy.
Emission reduction targets	The National Commission shall formulate methodologies for the quantification of greenhouse gases derived from the exploitation, production, transformation, distribution, and consumption of energy as well as avoided emissions from actions for the sustainable use of energy.
Energy – Demand-side policies	The Programme shall create an energy efficiency standardisation programme. It shall also establish a programme of substitution of incandescent lamps for fluorescent energy saving ones. The National Information Sub-system shall organise and publicise information on energy consumption and national and international energy efficiency indicators.
Transport polices	The Programme shall promote the use of energy efficient vehicles. It shall also create a public transport modernisation strategy based on electric transport

Name of Legislation	**Law for Sustainable Energy Use (LASE)**
	systems and with specific annual targets with he purpose of reverting the use of hydrocarbon individual transport in the long run.
Research and development	The Programme and the Commission shall promote scientific research related to sustainable energy use.
Mainstreaming climate change	The Programme shall design and implement permanent sustainable energy use programmes in all properties owned by the Federal Administration as well as apply sustainable use criteria in all acquired and rented properties or public works and services. In order to integrate and update the National Information Sub-system, Federal Administration entities and users with high energy consumption shall provide the Commission with information on production, exports, imports and consumption of all types of energy; energy efficiency in consumption; measures implemented to save energy and its results.

Name of Legislation	**Law for Bioenergy Promotion and Development**
Date of entry into force	December 13, 2007
Summary of bill	The bill seeks to promote and develop bioenergy (biomass, biodiesel, ethanol, biogas) in Mexico with the purpose of contributing to energy diversification and sustainable development while supporting rural areas and promoting social inclusion. To this end, it creates the Inter-sectoral Commission for Bioenergy Development formed by the different government Secretariats concerned. Implementation is the responsibility of the Secretariats of Energy; Agriculture, Pasture and Rural Development; and Environment and Natural Resources
Driver for implementation	Renewable Energy, Land Use
Monitoring arrangements	The Secretariat of Energy is responsible for reviewing the annual budget and evaluating established programmes and their respective support instruments. It is also charged with monitoring the observance of environmental laws and measures and of sanctioning infractions derived from the application of the present bill.
Emission reduction targets	The bill seeks to reduce GHG emissions through the international instruments to which Mexico is signatory to.
Energy – Supply-side policies	The Secretariat of Agriculture is charged with developing the Programme of sustainable input production for Bioenergy and Scientific and Technological Development.
REDD/Land Use policies	The Inter-sectoral Commission for Bioenergy Development, in the context of the Development Plan, will promote the production and commercialisation of bioenergy inputs from activities in rural areas related to: agriculture and animal husbandry, forests, seaweed, biotechnology, and enzymatic processes.
Research and development	The Secretariat of Agriculture and the Secretariat of Energy shall support scientific and technological research for sustainable bioenergy production and use as well as capacity building in this area. The

Name of Legislation	**Law for Bioenergy Promotion and Development**
	Commission for Bioenergy shall implement measures of this kind including, among other things, the creation of a National Network of Information and Research on Inputs.
Mainstreaming climate change	The Secretariat of Energy is responsible for defining coordination mechanism between different sectors of the Public Administration, federal entities and municipalities as well as different productive sectors in the country.

Name of Legislation/Agreement	**Inter-Secretariat Commission on Climate Change**
Date of entry into force	April 25, 2005
Summary of bill	The formation of the Commission is a presidential agreement that creates the permanent Inter-Secretariat Commission on Climate Change formed by the Secretariats of Foreign Relations; Social Development; Environment and Natural Resources; Energy; Economy; Agriculture; and Communications and Transport. The Commission is responsible for coordinating national policies for climate change mitigation and adaptation as well as programmes and strategies for the fulfilment of Mexico's commitments under the Kyoto Protocol. The head of the Secretariat of Energy and Natural Resources will be the Commission's permanent head and a Consultative Council on Climate Change formed by members from the public, private and academic sectors will be created.
Driver for implementation	Climate Change
Monitoring arrangements	The Commission shall report progress being made in Mexico with regards to climate change on an annual basis.
Putting a price on carbon	The Commission will promote and develop Clean Development Mechanism (CDM) projects in the public and private sectors. To this end, it will count with the permanent working group Mexican Committee for Greenhouse Gas Emission Reduction and Capture Projects.

Name of Legislation	**Accelerated Depreciation for Investments with Environmental Benefits**
Date of entry into force	2005
Summary of bill	The bill establishes that investments in environmentally friendly technologies, including renewable energy, could profit from accelerated depreciation. The implementation of the bill involves the Secretariat of Natural Resources and Environment as well as the Secretariat of Finance.
Driver for implementation	Renewable energy, energy efficiency
Energy – Supply-side policies	The bill allows investors to deduct up to 100% of the investment on renewable energy projects during the first year in accordance with the General Law for Ecological Equilibrium and Environmental Protection. Once the tax deduction is granted, the plant must remain active for at least five years.

Name of Legislation	**General Law for Sustainable Forest Development**
Date of entry into force	December 13, 2002
Summary of bill	The bill seeks to regulate and promote the conservation, protection, restoration, production, organisation, agricultural activity and management of Mexico's forests in order to secure sustainable forest development. To this end, it creates the National Forest Service, formed by different government authorities. It further creates the Mexican Forest Fund, charged with facilitating access to financial services and promoting payment for environmental services schemes.
Driver for implementation	Deforestation and land use
REDD/Land Use policies	The bill seeks to develop environmental goods and services in forests while preserving and enhancing biodiversity, and improving the social standards of forest peoples. For example, it includes, among other things, the creation of certification schemes in accordance with international practices. There is a strong focus on the creation of economic instruments for the development of forest activity such as fiscal stimulus, credit, funds and others.
Research and development	The National Forest Commission shall formulate and coordinate the National Programme for Forest Research and Technological Development, supported by national institutions dedicated to the theme and charged with promoting research, development, innovation, and technological transfers for sustainable forest development.

Name of Legislation	**General Law of Ecological Equilibrium and Environmental Protection – focus: environmental quality standard and inventory of air pollutant emissions**
Date of entry into force	March 1, 1988
Summary of bill	The bill seeks to promote the preservation and restoration of the ecological balance and environmental protection in Mexico. The law sets guidelines to prevent and control air, water and soil pollution, including the establishment of official Mexican standards of environmental quality and of inventories of emissions sources. It puts forward provisions for the establishment and management of protected natural areas. It determines that the sustainable use, preservation and restoration of soil, water and other natural resources should be compatible with economic benefits and activities. The bill also promotes responsible participation of the people, individually or collectively, in the preservation and restoration of ecological balance and environmental protection.
Driver for implementation	Air, water and soil pollution; environmental protection.
Emission reduction targets	The bill charges the Secretariat of Environment and Natural Resources with issuing official Mexican standards of environmental quality according to the maximum permissible level of emission of odours, gases and solid particles, and liquid to the atmosphere. The Secretariat should also integrate and update the inventory of emission sources of air pollutants and coordinate with local governments for the integration of national and regional inventories. Finally, the Secretariat is further responsible for the development and implementation of programmes to reduce emissions of pollutants in the atmosphere.

4.12 Russia

4.12.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 1,691 2,230 -50.8%
Latest reporting year	2008
Importance as an emitter	top 10
Copenhagen Accord pledge (for 2020)	15 – 25% from 1990, dependent on (i) appropriate accounting of the potential of Russia's forestry and (ii) undertaking by all major emitters of legally binding obligations
Flagship legislation	Climate Doctrine (2009)

4.12.2 Legislative Process

Russia has a bicameral system and the Federal Assembly consists of the State Duma (lower chamber) and the Federation Council, which have different powers and responsibilities. The Duma passes laws, which are then sent to the Council for confirmation and forwarded to the President of the Russian Federation for signing and publication. Federal Laws have priority over regional laws and direct effect throughout the territory of Russia. Often, Russian laws are adopted in the form of a Code of Law. A Code is a complete collection of rules in an entire subject area.

Another source of law, yet graded lower in the hierarchy of laws, are the executive regulations (decrees and directives). Due to an absence of required laws, the President can pass decrees regarding all questions without any limits if a valid federal law does not regulate an issue except in cases when the Constitution directly says that the question requires the adoption of a federal law. Usually, they are aimed at implementing higher-level acts of law.

An additional group of legislation is comprised of normative acts of federal executive authorities. These acts are related to laws through Directives of the Government. They develop, add, and consolidate existing legal norms. Although ministerial documents are acts of special jurisdiction and regulate activities of the subordinated persons and

legal entities, sometimes they can be of interdepartmental or even general significance.

4.12.3 Climate Change Legislation and Regulation

Climate change

The ratification of the Kyoto Protocol (KP) by Russia in 2004 was crucial for the entry into force of the international treaty. Russia's main legislation on climate and emissions mitigation rests mainly on various laws on establishing the domestic compliance instruments as required by the KP as well as the recent *Climate Doctrine.* An important component of the KP's framework, the Joint Implementation mechanism (Art.6 and 17), was adopted in Russian legislation in October 2009 (Government Decree No. 843). The original 2007 Joint Implementation legislation was considered too complicated so the responsibilities were redistributed by involving Sberbank, one of the Russian major state-owned banks, which fulfils the functions of the "carbon units' operator", and the approval system was re-established.

The *Climate Doctrine* was approved in December 2009. It marks a crucial step in Russia's recognition of the potential benefits of mitigation measures and its will to engage with the international community. Although it is not legally binding, it has a strong declarational nature. It is meant to set strategic guidelines and targets and serves as a foundation for the development and implementation of future climate policy, covering issues related to climate change and its consequences. The Doctrine will serve as a blueprint to harmonise domestic climate-related legislation with international standards, improve climate monitoring, stimulate the adoption of stronger environmental standards, the adoption of energy-efficiency and energy-saving measures, as well as greater use of alternative (including renewable) energy sources.

Although the Doctrine recognises the potential of the vast Russian forests as a carbon sink and recommends its rational use, it does not set up any major forestry action. However, Russia's commitment under the Copenhagen Accord is conditioned to the "appropriate accounting of the potential of Russia's forestry in frame of contribution in meeting the obligations of the anthropogenic emissions reduction" (UNFCCC).

Energy efficiency

Russia is one of the main worldwide suppliers of gas and oil. In order to improve its energy conservation and efficiency, Russia has passed several laws and rules. They include the 2003 federal Thermal Performance of Buildings code and more particularly the 2009 Energy Efficiency legislation (Federal Law 261-F3), "On Saving Energy and Increasing Energy Efficiency Increase" that establishes basic principles for the regulation of energy consumption to increase its efficiency and to encourage energy saving, and provides for various amendments to existing legislation. There are various subsequent sub-laws to define the tasks and responsibilities. In addition, there are various federal or regional programmes on heating or building efficiency such as the 1998 Heat Efficiency Leveraging Programme (HELP) under the auspices of US AID, the Russian Investment Initiative and the US-Russian Commission on Scientific and

Technological Cooperation.

Russia also elaborated several framework policies or energy strategies where the goals, objectives and main directions of long-term energy policy are set up. An important place is given to energy efficiency. These include the 2001 Federal Targeted Programme for an Energy Efficient Economy for the period 2002-2005, the 2003 Energy Strategy to 2020, and the 2009 Energy Strategy to 2030 where, by the end of the third stage, Russia was expected to have switched to highly efficient use of traditional energy and stood ready for the transition to alternative energy.

Legislation on Renewable energies is less extensive. The main piece is the State Policy of Energy Efficiency Increase through Use of Renewables for the Period up to 2020 adopted in 2009 (guidelines approved by government Decree No. 1-r). The guidelines establish targets for the share of electricity generation from renewable energy sources up to 2020, excluding large hydro (over 25 MW). The target is 1.5% in 2010, 2.5% in 2015 and 4.5% in 2020 and a series of measures are to be implemented and monitored to achieve them.

Russia has the world's largest emissions from flaring in the world. The World Bank estimates the reduction potential from flaring to be 70 Mt CO_2 with current gas prices (World Bank, 2007). In January 2009, a government decree was adopted that seeks to reduce emissions from gas flaring. A 5% limit for gas flaring has been set for the year 2012 and subsequent years with fines being imposed if this threshold is exceeded or there is no measurement equipment.

Russia: Flagship Legislation

Name of Flagship Legislation	**Climate Doctrine of the Russian Federation**
Date of entry into force	2009
Summary of bill	The Doctrine has a declarational nature, sets strategic guidelines and serves as a foundation for the development and implementation of future climate policy, covering issues related to climate change and its consequences. It is not a binding bill. The Doctrine is based on fundamental and applied scientific knowledge, including various studies carried out within the Russian Federation, and is a political document recognising the challenges and issues surrounding climate change. The Doctrine will serve as a blueprint to harmonise domestic climate-related legislation with international standards, improve climate monitoring, stimulate the adoption of stronger environmental standards, the adoption of energy-efficiency and energy-saving measures, as well as greater use of alternative (including renewable) energy sources. It underlines three areas for climate policy going forward: improving research to better understand the climate system and assess future impacts and risks; developing and implementing short- and long-term measures for mitigation and adaption; and engagement with the international community. Participation in international efforts is recognised as crucial for a long term solution to climate problems
Driver for implementation	Climate Change
Monitoring arrangements	Ministry of Natural Resources
Putting a price on carbon	According to the Climate Doctrine, participation in international mechanisms facilitating the reduction of greenhouse gases emissions constitutes one of the most important priorities of Russian climate policy.

Name of Flagship Legislation	**Climate Doctrine of the Russian Federation**
Energy - supply-side policies	Under the Doctrine Russia will aim to reduce the share of energy generated from natural gas to 46% or 47% by 2030 (from more than 50% currently) while doubling the capacity of nuclear power plants. It will also limit the burning of gas produced from oil wells, and increase the share of electricity produced from renewable energy sources to: 1.5% by 2010, 2.5% by 2015 and 4.5% by 2020.
Energy - demand-side policies	In terms of mitigation, the Doctrine foresees the development and implementation of measures to enhance energy efficiency across the economy and expand the use of renewable and alternative energy sources.
Research and development	Research and development in energy efficiency, renewable energy, environmentally friendly technology and GHG sink technologies are to be expanded. Development of scientific monitoring of climate change.
Mainstreaming climate change	The Doctrine states that climate policy will be implemented on the basis of action plans, at a federal, regional and sectoral level. Federal authorities will be responsible for the development of fiscal and financial incentives for technology development and deployment, including energy-efficient and energy-saving technologies as well as renewable energy technologies, across various industrial and other sectors. It will also be responsible for developing a national GHG inventory along with regional authorities. Enterprises will be responsible for implementing measures to improve the energy efficiency of thermal and electric power, vehicles, and buildings, as well as facilities. They will also implement measures to increase the share of alternative (including non-carbon) energy sources. Objective information coverage of the problems connected with climate change and its consequences,

Name of Flagship Legislation	**Climate Doctrine of the Russian Federation**
	including climate change outreach programs (including in mass media), is among the priorities of the Russian Federation climate policy.
Adaptation	"Anticipatory adaptation to climatic change consequences is among the priorities of the Russian Federation climate policy.(...)Climate change adaptation measures are regulated by state authorities' decisions, including decisions related to interaction of the Russian Federation with the international community."

Russia: Other Relevant Legislation

Name of Legislation	**Energy Efficiency legislation** (Federal Law 261-F3, "On Saving Energy and Increasing Energy Efficiency Increase and Amending Certain Legislative Acts of the Russian Federation”")
Date of entry into force	2009
Summary of bill	The Law establishes basic principles for the regulation of energy consumption to increase its efficiency and, inter alia, to encourage energy saving, and provides for various amendments to existing legislation (on technical regulation, housing, town planning, taxation, etc.) to enforce energy-saving rules. The Law rather in essence is a framework act calling for a number of follow-up implementing by-laws. Various sub-laws to the 2009 Energy Efficiency legislation to further define the tasks and responsibilities.
Driver for implementation	Energy efficiency
Monitoring arrangements	Under the law, all energy resources produced, transmitted, and consumed are subject to compulsory accounting by virtue of the respective meters.
Energy - supply-side policies	The Law contains energy efficiency rules for circulation of goods (energy efficiency classification of goods, labelling, prohibition of non efficient incandescent bulbs etc.)
Energy - demand-side policies	The Law establishes a general rule that buildings and other structures should meet applicable energy efficiency requirements both when being commissioned and during their subsequent operation. State construction supervisory authorities shall assign energy efficiency classes to apartment buildings. The law sets the conditions for voluntary or mandatory energy audits. Encouragement of energy saving technologies including, but not limited to the use of secondary energy resources and renewable energy sources. State programs aimed at energy savings and energy

Name of Legislation	**Energy Efficiency legislation** (Federal Law 261-F3, "On Saving Energy and Increasing Energy Efficiency Increase and Amending Certain Legislative Acts of the Russian Federation”")
	efficiency increases are expected to set such targets as the number of facilities relying on secondary energy resources or renewable energy sources for their energy supplies.
	Instruments: The tax incentives include, in particular, investment tax credits up to 30% for companies investing in energy efficiency technologies, accelerated depreciation of assets belonging to the category of objects with high energy efficiency or sites classified in top energy efficiency classes and partial compensation of interest on loans granted by Russian banks for the purpose of investing in energy saving and increased energy efficiency technologies
Mainstreaming climate change	According to the Explanatory Note attached to the Draft Law, 17 Decrees of application will be adopted by the Government (covering such issues as energy efficiency requirements for goods, including electric bulbs, buildings and constructions, energy efficiency classes of goods and apartment buildings, requirements for public procurements, requirements for regional and municipal programs in the sphere of EE1, etc.).
	In addition, plural bylaws and secondary legislation were required to be adopted by relevant federal ministries before 1 May 2010.

Name of Legislation	**On the Measures of Implementing Article 6 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change** (Government Decree No. 844)
Date of entry into force	2009
Summary of bill	Document providing for new opportunities for the realisation of Joint Implementation projects envisaged under the Kyoto Protocol (Legislation establishing Articles 6 and 17 of the Protocol) Yet to be completed by the "Selection rules" regulating the three first stages of project approval. The Selection Rules were prepared and approved in the beginning of December 2009 and have been submitted for registration (legal expertise) in the Russian Ministry of Justice. Companies entitled to act as applicants for JI projects are energy, agriculture, forestry, waste products, industrial processes and use of solvents and other products.
Driver for implementation	Climate Change
Monitoring arrangements	Application for the approval of a JI project is lodged to Sberbank (one of the Russian major state-owned banks, which fulfils the functions of the “carbon units’ operator”
Putting a price on carbon	This document expedited the procedure for JI projects’ implementation, changed the state bodies involved in the project approval procedure, modified the eligibility criteria for JI projects and introduced some other major changes to Russian legislation in the sphere of Kyoto Protocol mechanisms.

Name of Legislation	**Energy Strategy to 2030**
Date of entry into force	2009
Summary of bill	The strategy, approved until 2030, is aimed at increasing domestic oil and gas production.
Driver for implementation	Energy framework
Energy - supply-side policies	The main goal of the first stage is to eliminate the impact of the ongoing economic crisis on the energy sector and pave the way for post-crisis development. The second stage will focus on improving energy efficiency. By the end of the third stage, Russia is expected to have switched to highly efficient use of traditional energy and stand ready for transition to alternative energy

Name of Legislation	**State Policy of Energy Efficiency Increase through Use of Renewables for the Period up to 2020** (guidelines approved by government Decree No. 1-r)
Date of entry into force	2009
Summary of bill	The state policy of energy efficiency increase through use of renewables constitutes a part of Russia's energy policy and sets objectives, directions and forms of efforts to be made by state authorities to develop the electric power industry through use of renewables. This document underlines the lack of renewable energy development in Russia, and identifies the barriers to be overcome.
Driver for implementation	Renewable Energy
Monitoring arrangements	The guidelines mandate the Ministry of Energy to coordinate implementation and monitoring of the measures, and to monitor progress against the targets. To strengthen and improve state oversight for renewable energy the measures undertaken are to: -Improve targets and monitor progress towards meeting them; this may involve periodically updating targets based on evolving economic, energy and environmental priorities; -Improve statistical reporting on renewable energy in electricity generation and consumption;
Energy - supply-side policies	The guidelines outline measures to be taken in three broad areas: improving the state oversight system for renewable energy generation, levelling the playing field to make renewable energy more competitive, and improving renewable energy generation infrastructure. The guidelines establish targets for the share of electricity generation from renewable energy sources up to 2020, excluding large hydro (over 25 MW). The target is 1.5% in 2010, 2.5% in 2015 and 4.5% in 2020. At the time the policy passed, less than 1% of total electricity generation came from renewable energy sources, excluding large hydro.

Name of Legislation	**State Policy of Energy Efficiency Increase through Use of Renewables for the Period up to 2020** (guidelines approved by government Decree No. 1-r)
Energy - demand-side policies	This policy will lead the establishment of a system that provides consumers with incentives to purchase an increasing amount of renewable energy generated electricity.
Mainstreaming climate change	Improving research, development and deployment in renewable energy power generation, and developing domestic industry capacity in this sector

Name of Legislation	**Legislation on the limitations of associated gas flaring** (Government's decree n°7)
Date of entry into force	2009
Summary of bill	This decree seeks reduce emissions from gas flaring. A 5% limit for gas flaring has been set for the year 2012 and subsequent years, with fines being imposed if this threshold is exceeded or if there is no measurement equipment.

Name of Legislation	**Thermal Performance of Buildings - Federal Code Revision**
Date of entry into force	2003
Summary of bill	Announced in February 2003, the new federal Thermal Performance of Buildings code entirely replaced the federal building code, Thermal Engineering for Buildings, revised in 1995 and 1998.
Driver for implementation	Building/energy efficiency
Energy - demand-side policies	Effective 1 October 2003, the new code: - Establishes numerical values for required performance targets, corresponding to world levels; - Classifies new and existing buildings according to their energy efficiency; - Encourages buildings that are more efficient than required by code; - Creates a mechanism for identifying low-performing existing buildings and mandating necessary upgrades; - Develops design guidelines for both prescriptive and performance-based compliance paths; and - Develops methods for oversight and enforcement of compliance in terms of thermal performance and energy efficiency (energy passports), during design, construction, and prospective operation phases.
Mainstreaming climate change	Between 1995 and 2004, 50 regions of the Russian Federation implemented their own building codes in accordance with federal building standards. Some local enforcement agencies offered incentives for exemplary performance, others mandated auditing. Regions established their own requirements for calculating a building's energy consumption and compliance with local code.

Name of Legislation	**Energy Strategy to 2020**
Date of entry into force	2003
Summary of bill	Russia's Energy Strategy up to 2020 is a document detailing the goals, objectives and main directions of long-term energy policy. This strategy was released in August 2003.
Driver for implementation	Energy framework
Energy - supply-side policies	It calls for an increase in the share of renewable energy, the building of new hydro-energy stations and enaction of the bill "On Renewable Energy Sources". The strategy also states that it is possible to launch 1000 MW of electric power capacity and 1200 MW of heat power capacity based on renewables by 2010.

Name of Legislation	**Programme for Energy Efficient Economy (Framework policy)**
Date of entry into force	2001
Summary of bill	In 2001, Russia launched a Federal Targeted Programme for an Energy Efficient Economy for the period 2002-2005, with an outlook to 2010. It sets targets and outlines measures for energy efficiency improvements in different sectors of the economy. It was to be financed partially by the federal budget, partially by municipal/regional budgets and other sources
Driver for implementation	Energy Efficiency
Energy - supply-side policies	The key targets set in the 2001 programme were to reduce energy intensity by 13.4% (total final energy consumption/GDP) below 2000 levels by 2005, increasing to a 26% reduction below 2000 levels by 2010.

4.13 South Africa

4.13.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 361 380 N/A
Latest reporting year	1994
Importance as an emitter	top 25
Copenhagen Accord pledge (for 2020)	Nationally appropriate mitigation action for a 34% deviation from business as usual by 2020 and 42% by 2025
Flagship legislation	Vision, Strategic Direction and Framework for Climate Policy (2008)

4.13.2 Legislative Process

The legislative authority in South Africa is centred on Parliament, which is constituted by two houses, the National Assembly and the National Council of Provinces (NCOP). In order for a bill to become law, both houses of Parliament must approve it. A bill can be introduced in Parliament by a Minister, a Deputy Minister, a parliamentary committee or an individual MP. However, most bills are drawn up by a government department under the direction of the relevant Minister or Deputy Minister. The majority of bills are introduced in the National Assembly, but certain bills that affect provinces may be introduced in the NCOP. The law-making process usually starts with the introduction of a Green Paper; a discussion document drafted by the Ministry or department concerned that is then subject to public consultation. The Green Paper may be followed by a White Paper, a more developed discussion document that broadly outlines government policy and may also be subject to review by interested parties. Once introduced, a bill is referred to the relevant committee, where it is debated in detail and, if necessary, amended. Then the House takes a decision on whether to pass the bill.

South Africa has a solid body of environmental legislation. Although national environmental law has an enabling character, it may lack enforcement provisions.

South Africa has almost exclusively dealt with climate change through policies, strategies and regulations; legislation on this issue is rather scarce so far. This reality should by no means be equated with a lack of government engagement. South Africa has been showing commitment to tackling climate change, particularly on what refers to developing market-based mitigation mechanisms and promoting renewable energy and energy efficiency.

4.13.3 Climate Change Legislation and Regulation

Climate change

Although there is no comprehensive climate change law at present, there are moves underway that may see a law passed in 2011. A comprehensive Green Paper on climate change was gazetted for public comment in late 2010. The Department of Environmental Affairs conducted extensive public hearings on the Green Paper in all 9 provinces in February 2011, while Parliament conducted a public hearing on the paper in mid-March 2011. Final comments have been collected by the Department of Environmental Affairs, which is expected to release a White Paper on climate change in the third quarter of 2011.

The process of developing climate change legislation started as far back as 2007 and the Draft 'Zero' Policy relies essentially on the Vision, Strategic Direction and Framework for Climate Policy announced by the Ministry of Environmental and Tourism Affairs in July 2008. The Framework resulted from two and a half years of public consultation with members of government, civil society and the private sector and is based on the government's Long-term Mitigation Scenario (LTMS) process on climate change, which took place from 2006 to 2008 and pointed to 3 strategic options to avoid business as usual GHG emissions. In brief, the Framework establishes general guidelines for tackling climate change including the target of curbing the growth of GHG emissions by 2020-2025 at the latest; the introduction of a carbon tax, renewable energy feed-in tariffs, and a carbon capture and storage system; and mandatory targets for renewable energy, energy efficiency, and transport.

These measures are, in turn, the product of a broader policy context that gradually gave rise to the current climate change framework in South Africa. They start with the National Climate Change Response Strategy in 2004, which represents the first direct recognition of the need for action on climate change. Two years later, the Cabinet commissioned the Long-Term Mitigation Scenario (LTMS) study, in an attempt to produce sound scientific analysis from which the government could derive a long-term climate policy, on which it could base its international positions in the UNFCCC framework and with which it could persuade stakeholders to act. The LTMS produced a series of policy recommendations, which will be at the heart of South Africa's climate change legislation.

Finally, the only current legal instrument dealing directly with climate change in South Africa is the Taxation Law Amendment Bill of 2009, which amends the 1962 Income Tax Act to include, among other things, income tax incentives for participation in Clean Development Mechanism (CDM) projects as well as for energy efficiency savings. In

December 2010 the Treasury published a draft paper for public comment on carbon tax proposals. The comment period closed at the end of February 2011. The paper proposes three options, including a direct tax on carbon emissions, an upstream tax on fossil fuel inputs based on carbon content of the fuel, or a downstream tax imposed on the outputs or products generated from fossil fuels.

Renewable Energy and Energy Efficiency

Despite the fact that renewable energy sources are still at an embryonic stage in South Africa, where most of the energy matrix is coal-based, the government has been investing heavily in the promotion of renewable energy and energy efficiency. Accordingly, the National Energy Act 2008 is, among other things, concerned with increasing the generation and consumption of renewable energy. The Act also creates the South African National Energy Development Institute, responsible for promoting efficient generation and consumption of energy and energy research and development. Besides, the bulk of government action in this domain is translated into policies, strategies and regulations. Namely, the White Paper on the Promotion of Renewable Energy and Clean Energy Development 2003; the Integrated Clean Household Energy Strategy 2003, the Implementation Strategy for the Control of Exhaust Emissions from Road-going Vehicles in South Africa 2003, the Renewable Energy Policy 2004, the Cleaner Production Strategy 2005, the Energy Efficiency Strategy 2005, the Biofuels Industrial Strategy 2007, and Renewable Energy Feed-in Tariffs 2009.

While none of these regulations has the status of law, they set a series of meaningful national targets. For instance, the White Paper on Renewable Energy 2003 requires that 10,000 gigawatt hours (GWh) of energy be derived from renewable energy sources (mostly from biomass, wind, solar and small-scale hydro) by 2013. The Energy Efficiency Strategy 2005 sets the target of a 12% energy efficiency improvement by 2015, which is to be met through the increased use and development of renewable energy. Moreover, in March 2009, the National Energy Regulator of South Africa (NERSA) announced the implementation of Renewable Energy Feed-in Tariffs (REFITS) set to produce 10 TWh of electricity per year by 2013 to be paid for over a period of 20 years; the selected technologies were wind, hydro, landfill gas and concentrated solar. In November 2009, REFITS Phase II was launched with tariffs approved for six new technologies.

South Africa: Flagship Legislation

Name of Legislation	**Vision, Strategic Direction and Framework for Climate Policy**
Date of entry into force	July 28, 2008
Summary of bill	Announced by the Ministry of Environmental Affairs and Tourism and approved by the Cabinet, the policy is the basis of the Draft 'Zero' Climate Change Policy, launched in late 2010 with a view to being converted into law by 2012. The document results from a public consultation process with civil society and business and is based on the findings of the Long-Term Mitigation Scenario Process (LTMS) on Climate Change. It proposes action in the following areas: (1) GHG emission reductions; (2) Intensification of current initiatives; (3) 'Business Unusual' call for action; (4) Preparing for the future; (5) Vulnerability and adaptation; (6) Alignment, coordination and cooperation among stakeholders.
Driver for implementation	Climate Change, Renewable Energy, Energy Efficiency
Putting a price on carbon	The Treasury is charged with studying the implementation of a carbon tax, starting at low levels and escalating by 2018-2020.
Emission reduction targets	GHG emissions are set to stop increasing at the latest by 2020-2025, to stabilise for up to 10 years and then to decline in absolute terms.
Energy - supply-side policies	The renewable energy sector is viewed as a key growth sector to the implementation of the 'Business Unusual' call for action. The government is to diversify the energy mix away from coal. Ambitious and mandatory targets are to be set for electricity generated from both renewable and nuclear energy sources by the end of 2028, while laying basis for a net zero-carbon electricity sector in the long term. Renewable energy should also be incentivised through feed-in tariffs. Carbon capture and storage (CCS) for coal fired power stations and all coal-to-liquid (CTL) plants should be explored and developed; new coal fired power stations that are not carbon capture ready should not be approved.

Name of Legislation	**Vision, Strategic Direction and Framework for Climate Policy**
Energy - demand-side policies	Current energy efficiency and electricity demand-side management initiatives are to be scaled-up, reinforced and rendered mandatory through available regulatory instruments and other mechanisms. The government's energy efficiency policies and strategies are to be continuously reviewed and amended to reflect more ambitious national targets aligned with the LTMS.
Transport polices	The transport sector is also viewed as a key growth sector for the implementation of the 'Business Unusual' call for action, thus mandatory GHG emissions reduction from this sector are to be achieved through fuel efficiency standards, the promotion of passenger modal shifts towards public transport, and aggressive promotion of hybrid and electric vehicles.
Research and development	The 'Preparing for the future' theme is concerned with supporting new and ambitious R&D targets, specifically set in the field of carbon friendly technologies.
Adaptation	Adaptation interventions are to be prioritised while identifying who should drive them and how they should be monitored. Affected government departments are to ensure that climate change adaptation strategies in their sectors are included as key performance areas. The government is to pro-actively build on its knowledge base and capacity to adapt to climate change, including enhancing early warning and disaster reduction systems, and the provision of various services.

South Africa: Other Relevant Legislation

Name of Legislation	**Taxation Laws Amendment Bill, 2009 - Sections 12K and 12L inserted in Act 58**
Date of entry into force	September 1, 2009
Summary of bill	Amends the 1962 Income Tax Act. Section 12K - ' Exemption of certified emission reductions' - grants income tax exemption to the sale of certified emission reductions derived from Clean Development Mechanism (CDM) projects in the context of the Kyoto Protocol. Section 12L - 'Allowance for energy efficiency' - grants businesses notional deductions for income tax purposes for energy efficiency savings.
Driver for implementation	Climate Change, Energy Efficiency
Putting a price on carbon	Section 12K - Income tax exemption is granted to any person who engages in a qualifying CDM project. The measure has been applied since February 2009
Energy - demand-side policies	Section 12L - Grants income tax reductions for energy efficiency savings from certified baselines based on 'energy efficiency savings certificates' issued by an organ determined by Regulations from the Ministry of Energy. These Regulations are in tune with the National Energy Act, 2008. The measure applies to the taxable income of any persons in any year of assessment until January 1st, 2020.

Name of Legislation	**National Energy Act, 2008**
Date of entry into force	November 17, 2008
Summary of bill	The bill seeks to ensure the availability of diverse energy resources to the economy while supporting economic growth and poverty alleviation. To this end, it intends to provide for energy planning, increased generation and consumption of renewable energies, contingency energy supply, energy feedstock and carriers, and energy infrastructure. It further establishes the South African National Energy Development Institute, responsible for promoting efficient generation and consumption of energy and energy research.
Driver for implementation	Renewable Energy, Energy Efficiency
Energy - demand-side policies	The South African National Energy Development Institute is responsible for promoting energy efficiency measures, increasing energy efficiency throughout the economy and the GDP per unit of energy consumed, and optimise the utilisation of finite energy resources. The Minister of Minerals and Energy is charged with implementing the Integrated Energy Plan, dealing with all issues related to energy (supply, transformation, storage and demand) including plans related to GHG mitigation within the energy sector.
Research and development	The South African National Energy Development Institute is responsible for promoting energy research and development. This function includes, among other things, directing, monitoring, conducting and implementing energy research and technology development in all fields except nuclear energy; fostering innovation, making grants to educational and scientific institutions.

4.14 South Korea

4.14.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 508 543 N/A
Latest reporting year	2001
Importance as an emitter	top 15
Copenhagen Accord pledge (for 2020)	Reduce national GHG emissions by 30% from business as usual by 2020
Flagship legislation	Framework Act on Low Carbon Green Growth (2009)

4.14.2 Legislative Process

The legal system of South Korea is a civil law system that has its basis in the Constitution of the Republic of Korea. It has written laws of various forms in a certain hierarchy with the Constitution standing at the pinnacle as the paramount law. Korea's Acts and Subordinate Statutes (Presidential Decree, Ordinance of Prime Minister and Ordinance of Ministry; International Laws, Laws for Self-rule of Local Governments, Emergency Executive Order, Internal Rules of Constitutional Bodies, and Administrative Rules) form a consolidated system as a whole that is designed to prevent contradictions or conflicts.

The Korean Constitution empowers the National Assembly to enact Acts and the Executive and other organs to enact subordinate statues. This is a unicameral legislature. The power to enact Acts belongs exclusively to the National Assembly and the lawmaking power held by the Executive, etc. for subordinate statutes is confined to matters delegated by Acts and other matters necessary to enforce Acts. Since such subordinate statutes are required to be in conformity with Acts, the National Assembly is the supreme lawmaking organ.

The Ministry of Legislation is an independent and specialised self-legislative control agency within the government in order to exercise overall control of and coordinate the government's legislative activities and to review whether individual bills

contravene higher laws or conflict with relevant laws.

4.14.3 Climate Change Legislation and Regulation

Korea's flagship climate law is *Framework Act on Low-carbon Green Growth*, passed on 29 December 2009. It builds on Korea's 'Green New Deal' stimulus package of 6 January 2009 together with the National Strategy for Green Growth announced in August 2008 and the Five-Year Plan for Green Growth released in July 2009. On 6 April 2010, the government adopted the *Enforcement Decree of the Framework Act on Low Carbon* during the 15th Cabinet meeting. Both the law and its enforcement decree came into effect on 14 April 2010. The law creates the legislative framework for mid and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labelling, carbon disclosure, and the expansion of new and renewable energy. It includes a system of mandatory reporting of carbon emissions by all carbon and energy-intensive industries and provides a basis for the creation of a carbon trading system. The law mandates a cap on emissions, but leaves out the operational structure, the method of allocation of emissions permits, the sectoral coverage, and other details for implementing laws to decide.

The Framework Act takes precedence over other Acts in application to low carbon, green growth in Korea. Other related Acts include *Rational Energy Utilisation Act*, *Electricity Business Act*, the *Act on the Promotion of Purchase of Environment-friendly Products*, and *Energy Basic Law* etc. These Acts shall, whenever any of such Acts is enacted or amended, be brought into conformity with the purposes and basic principles of the Framework Act. The implementation of climate related legislation in Korea is mainly through administrative plans and policies that the State and each local government establish pursuant to related Acts and subordinate statutes. All of them shall be in harmony with the basic principles for the promotion of low carbon, green growth under Article 3 of the Framework Act and the national strategy for low carbon, green growth under Article 9 of the Framework Act.

In November 2010, the South Korean government released draft legislation to establish a domestic emissions trading scheme. The proposal, closely modelled on the EU's Emissions Trading Scheme (EU ETS), would begin with a first phase from 2015.

South Korea: Flagship Legislation

Name of Legislation	**Framework Act on Low-carbon Green Growth**
Date of entry into force	14/04/2010
Summary of bill	The law creates the legislative framework for mid and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labelling, carbon disclosure, and the expansion of new and renewable energy.
Driver for implementation	Green Growth, Climate Change
Monitoring arrangements	Large GHG emitters and energy intensive industries shall set and manage their reduction targets which are measurable, reportable and verifiable. Industries under the management of government shall report their performance on their Environmental Report, Sustainable Development Report or on the internet.
Putting a price on carbon	In principle, government's responsibility is to provide strategy and legislative framework. The function of market shall be maximised and private sector shall drive low carbon green growth. Government shall support establishing Emission Trading market and promote trading. Government shall gradually increase tax on products and services that emit GHGs and have low energy efficiencies.
Emission reduction targets	The Government shall establish and implement a basic plan every five years for coping with climate change for a planning period of 20 years.
Energy - supply-side policies	Government shall promote low carbon energy. Establishment of and Support for Companies for Investment in Green Industries.
Energy - demand-side policies	The government shall establish and enforce a basic plan for energy every five years for a planning period of 20 years, after presenting a proposed plan to the Energy Committee under Article 9 of the Energy Act and then to the Presidential Committee on Green Growth and the State Council consecutively for deliberation.

Name of Legislation	**Framework Act on Low-carbon Green Growth**
REDD/Land Use policies	The government shall establish and implement comprehensive national land plan, and the basic urban plan, etc.
Transport polices	The government shall establish standards for emissions from automobiles.
Research and development	Facilitation of Research, Development, and Commercialisation of Green Technology
Adaptation	Assessment of Impacts of Climate Change and Implementation of Measures for Adaptation

South Korea: Other Relevant Legislation

Name of Legislation	**The Enforcement Decree of the Framework Act on Low Carbon Green Growth**
Date of entry into force	April 14, 2010.
Summary of bill	The Enforcement Decree is designed to provide for matters delegated by the Act and matters necessary for enforcement thereof including establishment of central and local action plans, operation of the Presidential Committee on Green Growth, establishment of and support for green industries investment companies, and control of quantity of GHGs emitted and the quantity of energy consumed in each area including transport and architecture, etc.
Driver for implementation	Green Growth, Climate Change
Monitoring arrangements	Establishment and management of the national integrated information management system for greenhouse gases.
Emission reduction targets	A reduction in total national greenhouse gas emissions in 2020 by 30% from the business-as-usual projection for 2020.
Transport polices	Management of the standards for corporate-average energy consumption efficiency of automobiles and compatible corporate-average allowable exhaust emissions of greenhouse gases from automobiles.
Research and development	Establishment of green industries investment companies.
Adaptation	The Minister of Environment shall establish and implement, every five years, measures for adaptation to climate change based on consultation with the heads of the central administrative agencies concerned.

Name of Legislation	**Energy Basic Law (Law No. 7860)**
Date of entry into force	Came into force on Sept. 2006.
Summary of bill	It aims to present long-term and comprehensive vision to clarify basic principles of energy basic policy: establishment of basic principles of energy policy; formulation of national basic energy plan; establishment of national energy committee; formulation of plan for energy technology development.
Driver for implementation	Energy Conservation

Name of Legislation	**The Act on the Promotion of the Purchase of Environment-friendly Products**
Date of entry into force	Came into force on July 2005
Summary of bill	It aims to encourage the purchasing of environment-friendly products and services by means of mandating public agencies to buy environment-friendly products and services and supporting industry and household-level green consumption.

Name of Legislation	**Electricity Business Act**
Date of entry into force	Most recently amended on 12 April, 2010.
Summary of bill	The Electricity Business Law mandates both the purchase and the fixed price of electricity generated from renewable sources. Any renewable energy generator that is connected to the grid is eligible to sell electricity to the grid at fixed prices.
Driver for implementation	Renewable Energy
Monitoring arrangements	Korea Electric Power Corporation (KEPCO) is responsible for purchasing electricity from renewables. The government compensates for the difference between N & RE power generation cost and fossil fuel generation prices. The Act requires the Ministry of Knowledge Economy (MKE) to prepare and announce the Basic Plan of Long-term Electricity Supply and Demand (BPE) on a biennial basis. The BPE stipulates electricity policy directions on supply and demand, long-term outlook, construction plans, Demand Side Management, etc. The 4th Basic Plan of Long-Term Electricity Supply and Demand (2008-2022) was announced in 2008.

Name of Legislation	**Rational Energy Utilisation Act** **Energy Use Rationalisation Act**
Date of entry into force	Came into force on 1 January 1980; many amendments since 1995, including most recently by Act No. 9931, Jan. 13, 2010)
Summary of bill	The Act requires the government to consider the measures to attain effectively the goal of the national energy policy on the stability of demand and supply of the energy required for the sound development of the national economy, the minimisation of the factors of the environmental damages caused by the energy consumption, the rationalisation of the energy utilisation, and the promotion of the development of the energy related technology. According the Act, the Basic National Energy Plan and the Basic Plan for Rational Use of Energy are to be drafted by the Minister of Knowledge and Economy while the Action Plan for Rational Use of Energy is to be drafted by the heads of the authorities concerned and city/province governors.
Driver for implementation	Energy Security and Energy Efficiency
Monitoring arrangements	The Act requires the Minister of Knowledge and Economy to establish the basic plan on the rationalisation of the energy utilisation. It also requires the ministry to build an “Operational Programme on the Rationalisation of Energy Utilisation”. Based on the act, Korea's energy conservation programmes and activities are planned and put into action by the Republic of Korea Energy Management Corporation (KEMCO), established in 1980 based on the Act. KEMCO functions as the national energy efficiency centre responsible for the implementation of the national energy efficiency and conservation programmes.
Energy - demand-side policies	Based on Article 21, the Government of Korea has provided long term and low interest rate loans from the Fund for Rational Use of Energy for energy efficiency and conservation investments since 1980. Every fiscal year, a given amount from the Fund is allotted to the eligible loan applications from a government financial source named the Special Accounts for Energy and Resources.

4.15 United Kingdom

4.15.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 630 632 -19.0%
Latest reporting year	2008
Importance as an emitter	top 15
Copenhagen Accord pledge (for 2020)	20% rising to 30% under an international agreement, per the EU position. Statutory domestic target requires cuts of at least 34% in all GHGs by 2020 and at least 80% by 2050 (both from 1990 levels).
Flagship legislation	Climate Change Act (2008)

4.15.2 Legislative Process

Parliament is the centre of the political system in the United Kingdom. It is the supreme legislative body (i.e. there is parliamentary sovereignty), and Government is drawn from and answerable to Parliament. Parliament is bicameral, consisting of the House of Commons and the House of Lords.

Draft bills are issued for consultation before being formally introduced to Parliament. A bill is a proposal for a new law, or a proposal to change an existing law that is presented for debate before Parliament. Bills are introduced in either the House of Commons or House of Lords for examination, discussion and amendment. When both Houses have agreed on the content of a bill, it is then presented to the reigning monarch for approval (a process known as 'Royal Assent'). Once Royal Assent is given, a bill becomes an Act of Parliament and is law. An Act of Parliament creates a new law or changes an existing law.

'White Papers' are documents produced by the Government setting out details of future policy on a particular subject. A White Paper will often be the basis for a bill to be put before Parliament. The White Paper allows the Government an opportunity to gather feedback before it formally presents the policies as a bill.

4.15.3 Climate Legislation and Regulation

Climate change

The UK has developed several instruments directly aimed at achieving emissions reduction since the early 2000s. In 2001, it introduced a Climate Change Levy that applies to electricity, gas, solid fuel and liquefied gases used for lighting, heating and power in the business and public sectors. Complementing the levy, under the Climate Change Agreements that took effect in 2001, energy intensive business users are allowed to receive an 80% discount from the Climate Change Levy if they meet energy efficiency or carbon saving targets. This measure was extended in time and sectors concerned in 2004 and 2007.

In 2006, the publication of the Climate Change Programme outlined all of the UK policies and programmes in place to tackle climate change, including several measures relating to energy efficiency. The 2006 Programme included a package of new and existing measures, which were projected to reduce CO_2 emissions to 15-18% below 1990 levels by 2010 and work towards the longer term goal to reduce CO_2 emissions by 60% by 2050, as set out in the Energy White Paper (2003). On 21 June 2006, the UK government also approved the *Climate Change and Sustainable Energy Act*, which placed an obligation on the Department for Environment, Food and Rural Affairs (Defra) to report to parliament on greenhouse gas emissions in the UK and actions taken by government to reduce these emissions. The first report was put to the UK parliament on 26 July 2007. The legislation also establishes a scheme to promote national targets for micro-generation and provides for reporting on the energy efficiency of residential accommodation.

The UK flagship legislation on climate change is the 2008 *Climate Change Act*. It provides a long-term framework for improving carbon management, to help the transition to a low carbon economy, encourage investment in low carbon goods and provides an international signal. It put the UK's ambitious emissions reduction target into legislation (at least 80% below 1990 levels by 2050), created five-yearly 'carbon budgets' and set up the independent Climate Change Committee to advise the government. In March 2009, the *Climate Change Act Impact Assessment* was updated to reflect the final contents of the Act. The 2009 UK Low Carbon Transition Plan is a White Paper outlining how the British economy will be transformed to ensure the UK meets its emission reduction targets and meets its first three five-year carbon budgets that were set in law in May 2009. The paper sets out the Government's long-term strategy to radically cut the nation's carbon emissions by 2020.

Most recently, the new coalition government has proposed an *Energy Bill*. The Bill has three principal objectives: tackling barriers to investment in energy efficiency; enhancing energy security; and enabling investment in low carbon energy supplies. This bill was introduced to the House of Lords on 8 December 2010 and had its first reading in the House of Commons on 15 March 2011.

Another important backbone of climate policy is a result of the transposition in national legislation of the *European Union Emission Trading Scheme (*EU Directive

2004/101/EC), achieved through regulation in 2005 (Statutory Instrument 2005 No. 2903) thus validating those greenhouse gas offset credits generated under the Kyoto Protocol's Flexible Mechanisms. The scheme has been progressively developed through regulations that followed up to 2009 thus implementing its different phases and extensions - Statutory Instrument 2006 No. 737, Statutory Instrument 2007 No. 465, Statutory Instrument 2009 No. 313.

Energy efficiency

The UK has an extensive set of legislation and policies addressing energy efficiency and promoting a low carbon energy network. In 2001, the *Carbon Trust,* an independent, not-for-profit company set up by government to promote energy efficiency in non-domestic sectors was created. A year later, the *Energy Efficiency Commitment* (EEC) was set up. It is a major policy to encourage consumers to make domestic energy efficient improvements. This includes measures such as insulation, energy efficient boilers, appliances and light bulbs. It places an obligation on the suppliers of gas and electricity to promote improvements in energy efficiency through measures provided to domestic consumers. Running until 2008, it was replaced by the *Carbon Emissions Reduction Target (CERT)* that complements the *Climate Change Act* and is an obligation on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector. It marks a significant strengthening of efforts to reduce household carbon emissions - with a doubling of the level of activity of its predecessor Energy Efficiency Commitment (EEC) to deliver overall lifetime carbon dioxide savings of 154 $MtCO_2$.

In 2005, the UK government introduced a number of energy and cost savings measures to make all buildings more efficient. The measures are being applied across all European Union countries and are in line with the *European Directive for the Energy Performance of Buildings (EPBD*). The *Community Energy Saving Programme (CESP)* introduced in 2009 targets households across Great Britain, in areas of low income, to improve energy efficiency standards, and reduce fuel bills. CESP is funded by an obligation on energy suppliers and electricity generators. The programme is delivered through the development of community-based partnerships between Local Authorities (LAs), community groups and energy companies, via a house-by-house, street-by-street approach.

In addition, enacted on 27 November 2008, the *Planning and Energy Act* enables local planning authorities in England and Wales to set requirements for energy use and energy efficiency in local plans. It allows local authorities to establish their own requirements for a proportion of energy used in development plans to come from renewable sources, to be low carbon, or to comply with energy efficiency standards that exceed the requirements of existing building regulations. Several regional schemes also exist. They include for instance the *HEES Wales scheme* that was launched in 2000; it provides grants for heating and insulation improvements not only for owner-occupiers, but also to tenants.

The CRC Energy Efficiency Scheme (formerly known as the Carbon Reduction Commitment) is the UK's mandatory climate change and energy saving scheme. The

scheme started in April 2010. The CRC is a mandatory energy efficiency scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. The scheme provides a financial incentive to reduce energy use by putting a price on carbon emissions from such use and also provides the opportunity for participants to make savings on energy bills through improved energy efficiency. In CRC, organisations buy allowances equal to their annual emissions. The overall emissions reductions achieved by the scheme will be determined by the emissions 'cap' on the total allowances available to CRC participants. Within the overall limit, individual organisations can determine the most cost-effective way to reduce their emissions.

Renewable energy

The Renewables Obligation (RO) introduced in 2002 is the current main market-based mechanism for supporting large-scale generation of renewable electricity. Since its introduction, the RO has been subject to various reforms and improvements. The RO works by placing an obligation on licensed electricity suppliers to source a specified and annually increasing proportion of their electricity sales from renewable sources, or pay a penalty. As of 1 April 2009, the reforms introduced mean that new generators joining the RO now receive different numbers of Renewable Obligation Certificates (ROCs), depending on their costs and potential for large-scale deployment.

The 2004 Energy Act is important in providing the framework for the development of offshore wind and other marine renewable energy sources outside territorial waters. The Act implemented a range of commitments made in the 2003 Energy White Paper, including those relating to energy efficiency, such as raising building and product standards, and creating an Energy Efficiency Action Plan for the UK. The *2008 Energy Act* goes further and strengthened the *Renewables Obligation* to increase the diversity of UK's electricity mix. The Act also created the *Renewable Heat Incentive*: allowing the Secretary of State to establish a financial support programme for renewable heat generated anywhere, from large industrial sites to individual households The Act created regulation that enables private sector investment in Carbon Capture and Storage projects. The *2010 Energy Act* complements these measures by including provisions on introducing a new CCS Incentive to support the construction of four commercial-scale CCS demonstration projects in the UK, and the retrofit of additional CCS capacity to these projects should it be required at a future point. It also requires the Government to prepare regular reports on the progress that has been made on the decarbonisation of electricity generation in Britain.

*The UK Renewable Energy Strategy 200*9 is a white paper outlining how the UK will meet its legally-binding target to ensure 15% of energy comes from renewable energy sources by 2020. The Strategy also creates an Office for Renewable Energy Deployment (ORED) within the Department of Energy & Climate Change (DECC) to take forward the commitments outlined in the Strategy. The Strategy comprises three primary 2020 targets, and introduces payment schemes to support the production of renewable heat and small-scale clean electricity generation by households, industry, businesses and communities. From 2010, the UK government offers *feed-in tariffs (FITs) for small-scale low-carbon electricity* produced from a variety of renewable

energy technologies installed by householders, businesses and communities, even if the electricity is not fed back into the electricity grid but consumed on-site. The new coalition government has announced a review of the FIT policy.

Several incentives exist to promote the production of biofuels. The *Bio-energy Capital Grants Scheme* supports biomass-fuelled heat, and combined heat and power projects in the industrial, commercial and community sectors in England. Six rounds of funding have been provided since the Scheme was launched in 2002. Additionally, a *reduced excise duty rate* was introduced for biodiesel in July 2002 and bioethanol in 2005, set at GBP 0.20 lower than the rate applicable to diesel and unleaded petrol. Most recently, the 2008 *Renewable Transport Fuels Obligation (RTFO)* is a long-term mechanism requiring transport fuel suppliers to ensure a set percentage of their sales are from a renewable source. The Obligation also requires suppliers to publicly report on the carbon savings and sustainable production of biofuels supplied. It aligns with the EU Directive 2003/30/EC on the promotion of biofuels and renewable fuels for transport. Regional schemes such as the *Energy Crop Scheme England* introduced in 2000.

UK: Flagship Legislation

Name of Flagship Legislation	**Climate Change Act**
Date of entry into force	Royal Assent 26 November 2008 (most elements came into force with Royal Assent, with some coming into force on 1 January 2009).
Summary of bill	The rationale behind the Climate Change Act is to provide a long-term framework for improving carbon management, to help the transition to a low carbon economy, encourage investment in low carbon goods, and provide an international signal. It also creates 5-yearly 'carbon budgets'. In March 2009, the Climate Change Act Impact Assessment was updated to reflect the final contents of the Act
Driver for implementation	Climate Change
Monitoring arrangements	Report by Secretary of State on the policies implemented to meet carbon budgets and an annual report to Parliament on the status of UK emissions, with a debate led by the Secretary of State for Energy and Climate Change. The creation of the Committee on Climate Change (CCC) - a new independent, expert body to advise the Government on the level of carbon budgets and on where cost-effective savings can be made. The Committee submits annual reports to Parliament on the UK's progress towards targets and budgets. The Government must respond to these annual reports, ensuring transparency and accountability on an annual basis. The CCC is an Non-Departmental Public Body sponsored by the Department of Energy and Climate Change, (DECC) and funded by DECC, the Department for Environment, Food and Rural Affairs (Defra) and the Devolved Administrations (DAs) in Scotland, Wales and Northern Ireland. It began operating as a Statutory Body on 1 December 2008 The key recommendations of the CCC in 2010 dealt with: electricity market reform, carbon price floor, the

Name of Flagship Legislation	**Climate Change Act**
	Emissions Performance Standard (EPS), delivery mechanisms and incentives to improve energy efficiency of buildings, new policies for the agriculture sector, encouraging a move to more carbon-efficient cars, including electric cars. The Government's response to the CCC's second annual progress report (which was published on 30 June 2010) was published on 14th October 2010.
Putting a price on carbon	The Act sets up a carbon budgeting system which caps emissions over five-year periods, with three budgets set at a time, to help the UK stay on track for its 2050 target. The first three Carbon budgets run from 2008-12, 2013-17 and 2018-22, and were set in law in May 2009. The Government must report to Parliament its policies and proposals to meet the budgets, and this requirement was fulfilled by the UK Low Carbon Transition Plan. The UK Low Carbon Transition Plan, published July 2009, outlines the policies and proposals that will be put in place to decarbonise the UK economy. The Government must set a limit on the purchase of carbon credits for each budgetary period – for the first budgetary period, a zero limit was set in May 2009, excluding units bought by UK participants in the EU Emissions Trading System. The Act also gives powers to introduce domestic emissions trading schemes more quickly and easily through secondary legislation – the first use has been to introduce the Carbon Reduction Commitment Energy Efficiency Scheme. A requirement for the Government to issue guidance by 1 October 2009 on the way companies should report their greenhouse gas emissions, and to review the contribution reporting could make to emissions reductions by 1 December 2010.
Emission reduction targets	A legally binding target of at least an 80% cut in greenhouse gas emissions by 2050, to be achieved through action in the UK and abroad. Also a reduction in emissions of at least 34% by 2020. Both these targets

Name of Flagship Legislation	**Climate Change Act**
	are against a 1990 baseline.
Energy - supply-side policies	The Act introduces measures on biofuels.
Energy - demand-side policies	Powers to introduce pilot financial incentive schemes in England for household waste. The inclusion of international aviation and shipping emissions in the Act or an explanation to Parliament why not - by 31 December 2012.
Mainstreaming climate change	A requirement for the Government to report at least every five years on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed. The Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks.
Adaptation	The Act introduces an Adaptation Sub-Committee of the Committee on Climate Change, providing advice to, and scrutiny of, the Government's adaptation work.

UK: Other relevant legislation

Name of Legislation	**Feed-in Tariffs for renewable electricity**
Date of entry into force	1 April 2010 (*the new Coalition government announced a review of this policy on 7 February 2011*)
Summary of bill	The UK government offers feed-in tariffs (FITs) for small-scale low-carbon electricity produced from a variety of renewable energy technologies installed by householders, businesses and communities, even if the electricity is not fed back into the electricity grid but consumed on-site. Additional payment is provided for electricity fed into the grid. FITs vary according to technology, will last between 10 to 25 years, and are adjusted for inflation. They apply to hydro, anaerobic digestion, wind and solar PV technologies under 5 MW, and a pilot scheme for micro Combined Heat and Power (CHP) has also been launched as part of the FIT.
Driver for implementation	Renewable Energy
Monitoring arrangements	Generators with installations of 50kW or less must be installed and accredited by the Microgeneration Certification Scheme (MCS), an independent certification scheme which has support from the UK Department of Energy and Climate Change, industry and non-governmental groups. Installations with capacities greater than 50kW will need to contact Ofgem and seek accreditation through a similar process as exists under the Renewables Obligation (RO).

Name of Legislation	**Carbon Reduction Commitment Energy Efficiency Scheme**
Date of entry into force	April 2010
Summary of bill	The CRC Energy Efficiency Scheme (formerly known as the Carbon Reduction Commitment) is the UK's mandatory climate change and energy saving scheme. The scheme started in April 2010 and is aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. These organisations are responsible for around 10% of the UK's emissions. Together with the financial and reputational considerations, the scheme encourages organisations to develop energy management strategies that promote a better understanding of energy usage.
Driver for implementation	Climate Change
Monitoring arrangements	The scheme is administered by the Environment Agency. The scheme features an annual performance league table that ranks participants on energy efficiency performance.
Putting a price on carbon	The scheme provides a financial incentive to reduce energy use by putting a price on carbon emissions from such use and also provides the opportunity for participants to make savings on energy bills through improved energy efficiency. In CRC, organisations buy allowances equal to their annual emissions. The overall emissions reductions achieved by the scheme will be determined by the emissions 'cap' on the total allowances available to CRC participants. Within the overall limit, individual organisations can determine the most cost-effective way to reduce their emissions. This could be through buying extra allowances or investing in ways to decrease the number of allowances they need to buy.

Name of Legislation	**Energy Act 2010**
Date of entry into force	Royal Assent 8 April 2010; entry into force 1 January 2011
Summary of bill	It implements some of the key measures required to deliver DECC's low carbon agenda.
Driver for implementation	Energy framework
Monitoring arrangements	Requiring the Government to prepare regular reports on the progress that has been made on the decarbonisation of electricity generation in Britain and the development and use of CCS.
Energy - supply-side policies	The Act includes provisions on introducing a new CCS Incentive to support the construction of four commercial-scale CCS demonstration projects in the UK, and the retrofit of additional CCS capacity to these projects should it be required at a future point.

Name of Legislation	**Community Energy Saving Programme (CESP)**
Date of entry into force	2009
Summary of bill	CESP targets households across Great Britain, in areas of low income, to improve energy efficiency standards, and reduce fuel bills. There are 4,500 areas eligible for CESP. CESP is funded by an obligation on energy suppliers and electricity generators. It is expected to deliver up to £350m of efficiency measures.
Driver for implementation	Energy efficiency
Emission reduction targets	Around 100 schemes are expected, benefiting around 90,000 homes and saving nearly 2.9m tonnes of CO_2 emissions.
Energy - demand-side policies	CESP promotes a "whole house" approach i.e. a package of energy efficiency measures best suited to the individual property. CESP is expected to deliver annual average fuel bill savings for those households involved of up to £300. The programme is delivered through the development of community-based partnerships between Local Authorities (LAs), community groups and energy companies, via a house-by-house, street-by-street approach.

Name of Legislation	**Renewable Energy Strategy 2009**
Date of entry into force	2009
Summary of bill	The UK Renewable Energy Strategy 2009 is a white paper outlining how the UK will meet its legally binding target to ensure 15% of energy comes from renewable energy sources by 2020.
Driver for implementation	Renewable energy
Monitoring arrangements	The Strategy also creates an Office for Renewable Energy Deployment (ORED) within the Department of Energy & Climate Change (DECC) to take forward the commitments outlined in the Strategy.
Emission reduction targets	The government estimates that the Strategy will provide cumulative savings of 755 $MtCO_2$ between now and 2030, 535 $MtCO_2$ of which will help the UK meet EU Emissions Trading System (EU-ETS) caps, and 220 $MtCO_2$ will provide additional CO_2 reductions. Within the additional savings, 73 $MtCO_2$ will be saved over the third carbon budget period (2018 - 2022) and deliver about a sixth of the abatement needed to meet this third budget.
Energy - supply-side policies	The Strategy comprises three primary 2020 targets: Over 30% of electricity to be generated from renewable energy sources, mostly from wind power, with biomass, hydro, wave and tidal power playing important roles; 12% of heat to be generated from renewable energy sources, from a large range of sources (biomass, biogas, solar, heat pumps); 10% of transport energy to come from renewable energy sources. Introducing payment schemes to support the production of renewable heat and small-scale clean electricity generation by households, industry, businesses and communities. New guaranteed payments will be provided through feed-in tariff schemes from 2010 onwards, and a Renewable Heat Incentive from 2011 onwards. Before the schemes take effect, GBP 45 million in grants have been committed. In addition, the Strategy sets out areas for action in

Name of Legislation	**Renewable Energy Strategy 2009**
	four areas. The first aims to improve planning processes to be swifter and more strategic. The second for measures to strengthen the UK's renewable energy industry, including through greater investment and work with the financial sector. The third targets improvements and investments in the electricity grid, including improved grid access, more strategic investments (including in an offshore grid and a smarter grid). Finally, the government outlines commitments for sustainable bioenergy development and use.
Transport polices	The Renewable Transport Fuel Obligation will be amended or replaced, taking into account sustainability issues, to ensure transport fuels contain a rising amount of renewable biofuels.

Name of Legislation	**Carbon Emissions Reduction Target (CERT)**
Date of entry into force	2008 (amended in 2009 and 2010)
Summary of bill	The Carbon Emissions Reduction Target (CERT) - which came into effect on 1 April 2008 and will run until 2011 - is an obligation on energy suppliers to achieve targets for promoting reductions in carbon emissions in the household sector. It is the principal driver of energy efficiency improvements in existing homes in Great Britain. The primary driver is to reduce carbon emissions and meet the target set up by the Climate Change Act. CERT will also help: reduce energy demand; enhance the UK's security of supply; reduce energy bills for those receiving measures; reduce fuel poverty; and, secure jobs in energy efficiency industries. The third supplier obligation phase, was introduced in 2008. On 30th July 2010, CERT was extended from March 2011 to December 2012 with a new higher target and significantly refocused around supporting insulation:
Driver for implementation	Climate Change
Emission reduction targets	It marks a significant strengthening of efforts to reduce household carbon emissions - with a doubling of the level of activity of its predecessor Energy Efficiency Commitment (EEC). Energy suppliers are now required to deliver measures that will provide overall lifetime carbon dioxide savings of 293 $MtCO_2$ by December 2012, superseding the target of 185 $MtCO_2$ by March 2011.
Energy - supply-side policies	The Carbon Emissions Reduction Target (CERT) requires all domestic energy suppliers with a customer base in excess of 50,000 customers to make savings in the amount of CO_2 emitted by householders. Suppliers meet this target by promoting the uptake of low carbon energy solutions to household energy consumers, thereby assisting them to reduce the carbon footprint of their homes.
Energy - demand-side	At least two thirds of the increase in target (68%) must be delivered through professionally installed insulation

Name of Legislation	**Carbon Emissions Reduction Target (CERT)**
policies	measures. In combination with the exclusion of compact fluorescent lamps, this will refocus the scheme around supporting insulation measures that can help deliver deep and long lived carbon and energy savings.

Name of Legislation	**Low carbon transition Plan**
Date of entry into force	2009
Summary of bill	The UK Low Carbon Transition Plan is a white paper outlining how the British economy will be transformed to ensure the UK meets its emission reduction targets, secures its energy supplies for the future, maximises the economic opportunities for jobs, skills and investment as well as ensuring policies are fair to protect the most vulnerable in society. It sets out the Government's long-term strategy to radically cut the nation's carbon emissions by 2020 - 18% from 2008 levels (over 1/3 from 1990 levels) and meet its first three carbon budgets. The key steps set out in the Plan cover five sectors: power and heavy industry; transport; homes and communities, workplaces and jobs; farming, land and waste.
Driver for implementation	Climate Change
Emission reduction targets	The Plan aims to cut GHG emissions from power and heavy industry 22% by 2020 from 2008 levels, and outlines how the UK will get 40% of its electricity from low-carbon sources. This will be done in part through the European Union emissions trading system (EU ETS), but also through complementary measures. In the building sector (homes and communities), the Plan to 2020 will reduce emissions from homes 29% from 2008 levels. Emissions from workplaces will be reduced 13% from 2008 levels by 2020 under the Plan, in part through inclusion of carbon-intensive industries in the EU ETS, and various financial incentive and support schemes targeting businesses (Climate Change Levy, Climate Change Agreements, Carbon Reduction Commitment).
Energy - supply-side policies	The government will also fund up to four demonstrations of carbon capture and storage from coal power plants, and facilitate the building of new nuclear power stations. It also clarifies that climate change mitigation is part of the electricity regulator Ofgem's role. In addition, the government will endorse plans for grid

Name of Legislation	**Low carbon transition Plan**
	expansion, and develop a plan for delivering a smart grid
Energy - demand-side policies	In addition to the CERT, smart meters are to be rolled out in every home by 2020, and two financing schemes launched. The first will experiment with pay-as-you-save schemes, using savings on energy bills to pay for the upfront costs for energy efficiency improvements. The second is a cash-back scheme to pay individuals and businesses if they use low-carbon energy sources to generate heat or electricity. Vulnerable households will also be specifically targeted through an increase in the level of Warm Front grants, and a new community-based pilot approach to help deliver energy efficiency improvements to approximately 90,000(the Community Energy Saving Programme).
Transport polices	In the transport sector, the Plan will support a large-scale demonstration project for 340 electric vehicles, and in parallel reduce the cost of low-carbon vehicles by providing assistance of between GBP 2000-5000 per vehicle from 2011 onwards, and providing up to GBP 30 million to support the installation of electric vehicle charging stations in several cities. The government also commits to source 10% of transport fuels from sustainable renewable sources by 2020.

Name of Legislation	**Energy Act 2008**
Date of entry into force	2008
Summary of bill	It implements the legislative aspects of the Energy white paper 2007: 'Meeting the energy challenge'. The Energy Act updates energy legislation.
Driver for implementation	Energy framework
Energy - demand-side policies	Feed-in tariffs: enabling the Government to offer financial support for low-carbon electricity generation in projects up to 5 megawatts (MW). The aim is for generators to receive a guaranteed payment for generating low-carbon electricity

Name of Legislation	**Low Carbon Transport Innovation Strategy**
Date of entry into force	2007
Summary of bill	The Low Carbon Transport Innovation Strategy (LCTIS), published in May 2007, sets out a wide range of actions that the UK is taking to encourage innovation and technology development in lower carbon transport technologies.
Driver for implementation	Transport/ R&D
Transport polices/ R&D	A key role for government will be to stimulate investment in a broad range of R&D activities. Essential to this will be the use of regulatory frameworks such as carbon pricing and energy efficiency, but also government funding aimed at accelerating the development and market penetration of new lower carbon technologies. To stimulate this shift towards low-carbon transportation technologies, one major initiative is the Low Carbon Vehicles Innovation Platform (LCVIP), a GBP 100 million programme over 5 years supported by the Technology Strategy Board, the Engineering and Physical Sciences Research Council and Department for Transport, and funded through the Technology Strategy Board.

Name of Legislation	**Climate Change and Sustainable Energy Act**
Date of entry into force	2006
Summary of bill	On 21 June 2006, the UK government approved the Climate Change and Sustainable Energy Act. It contains several measures to monitor and promote energy efficiency.
Driver for implementation	Climate Change/Energy efficiency
Monitoring arrangements	The Act placed an obligation on Defra to report to parliament on greenhouse gas emissions in the UK and action taken by government to reduce these emissions. The first report was put to the UK parliament on 26 July 2007.
Energy - supply-side policies	The legislation also establishes a scheme to promote national targets for micro-generation; Provides for a green certificate scheme for electricity from renewable sources (see Renewable Obligations).
Energy - demand-side policies	Provides for reporting on the energy efficiency of residential accommodation;

Name of Legislation	**Climate Change Programme 2006**
Date of entry into force	2006
Summary of bill	First published in 2000, the Government's UK Climate Change Programme outlined all of the UK policies and programmes in place to tackle climate change, including several measures on energy efficiency. A review launched in September 2004 resulted in the Climate Change Programme 2006, published in March 2006.
Driver for implementation	Climate Change
Emission reduction targets	The 2006 Programme includes a package of new and existing measures, which are projected to reduce carbon dioxide emissions to 15-18% below 1990 levels by 2010 and work towards the longer term goal to reduce carbon emissions by 60% by 2050, as set out in 2003's Energy White Paper.
Energy - demand-side policies	Measures include : - maintain a strong package of support, advice and information measures to help businesses improve their energy efficiency; - continue to use the climate change levy and associated climate change agreements to encourage businesses to improve the efficiency with which they use energy -continue to significant improvements already made and update the Building Regulations in April 2006 to raise energy standards of new build and refurbished buildings; - introduce the Code for Sustainable Homes
Transport polices	-work strongly to achieve further commitments from vehicle manufacturers to improve fuel efficiency;

Name of Legislation	**Code for Sustainable Homes**
Date of entry into force	2006
Summary of bill	Building on the recommendations of the Sustainable Buildings Task Group, the Code for Sustainable Homes has been developed to support a step change in the building of sustainable new homes. The Code provides a single national standard to guide industry in the design and construction of sustainable homes, considering energy among other aspects.
Driver for implementation	Buildings/Energy efficiency
Energy - demand-side policies	Since April 2007 the developer of any new home in England can choose to be assessed against the Code.From 1 May 2008 it is now mandatory for all new homes to be rated against the Code and include a Code or nil-rated certificate within the Home Information Pack. There are six levels of the Code, with mandatory minimum standards for energy efficiency at each level. For example, Code Level 1 represents a 10% improvement in energy efficiency over the 2006 Building Regulations. Code Level 6 would be a completely zero carbon home (heating, lighting, hot water, and all appliances). Improvements in the energy efficiency of new homes of more than 25% compared to 2006 regulations (Level 3 of the code) would probably require some form of low or zero carbon energy generation, either by individual buildings (e.g. dedicated solar water heating) or, by whole developments sharing a source of low carbon generation (e.g. wind turbines).

Name of Legislation	**Regional Approval for Renewable Energy Projects** (Planning Policy Statement 22: Renewable Energy)
Date of entry into force	2004
Summary of bill	Regional authorities have been given the authority to promote the use of renewable power sources when granting permission for new building and infrastructure developments. According to the Planning Policy Statement 22 (PPS22), which updates the Planning Policy Guidance Note 22 issued in 1993, the approval for alternative energy projects such as wind farms, and those involving biomass or solar panels, is simplified.
Driver for implementation	Renewable energy

Name of Legislation	**Energy Act 2004**
Date of entry into force	2004
Summary of bill	This bill sets up the energy framework for the UK. Regarding climate change mitigation, the Act is important in providing the framework for the development of offshore wind and other marine renewable energy sources outside territorial waters. Such measures were expected to contribute to meeting the country's 10% renewable energy target by 2010.
Driver for implementation	Energy supply and climate change
Energy - supply-side policies	The Offshore Production of the Energy part of the Energy Act 2004 puts in place a comprehensive legal framework for offshore renewable energy projects - wind, wave and tidal - beyond the UK's territorial waters. The Act establishes a Renewable Energy Zone (REZ), adjacent to the UK's territorial waters, within which renewable energy installations can be established. The Act enables the Crown Estate to award licences for wind farm sites in the REZ on much the same basis as it currently leases sites within territorial waters.
Energy - demand-side policies	The Act implemented a range of commitments made in the 2003 Energy White Paper, including those relating to energy efficiency, such as raising building and product standards, and creating an Energy Efficiency Action Plan for the UK.

Name of Legislation	**Renewables Obligation**
Date of entry into force	2002
Summary of bill	The Renewables Obligation (RO) is the current main mechanism for supporting large-scale generation of renewable electricity. Since its introduction, the RO has been subject to various reforms and improvements. It is a market-based mechanism, designed to provide a substantial incentive for all eligible forms of renewable electricity.
Driver for implementation	Renewable energy
Monitoring arrangements	The Office of Gas and Electricity Markets (Ofgem) is responsible for monitoring and enforcing compliance with the RO. Their functions include accrediting renewable generators and issuing of Renewable Obligation Certificates (ROCs).
Energy - supply-side policies	The RO works by placing an obligation on licensed electricity suppliers to source a specified and annually increasing proportion of their electricity sales from renewable sources, or pay a penalty. The obligation for 2009/10 is 9.7%, rising to 15.4% by 2015/6. Previously, 1 ROC was issued for each megawatt hour (MWh) of eligible generation, regardless of technology. As of 1 April 2009, the reforms introduced mean that new generators joining the RO now receive different numbers of ROCs, depending on their costs and potential for large-scale deployment. New projects in more expensive technologies like offshore wind now receive more support and those that are more economic like landfill gas, receive less. Generators can sell their ROCs to electricity supply companies who use them to demonstrate compliance with the Obligation. This enables generators to receive a premium on top of the sale of the electricity. In April 2010, further changes included the RO being extended from its current end date of 2027 to 2037 for new projects, in order to provide greater long-term certainty for investors, and an increase in support for offshore wind projects meeting certain criteria.

Name of Legislation	**Preferential Tax Regimes for Biofuels**
Date of entry into force	2002
Summary of bill	A reduced excise duty rate was introduced for biodiesel in July 2002 and bio-ethanol in 2005, set at GBP 0.20 lower than the rate applicable to diesel and unleaded petrol. Producers of bio-blend and bio-ethanol blend also benefit from the reduced rate of excise duty, as the proportion of biodiesel or bio-ethanol in the blend bears the lower rate of excise duty.
Driver for implementation	Biofuel

Name of Legislation	**Bio-energy Capital Grants Scheme**
Date of entry into force	2002
Summary of bill	The Bio-energy Capital Grants Scheme supports biomass-fuelled heat, and combined heat and power projects in the industrial, commercial and community sectors in England. Six rounds of funding have been provided since the Scheme was launched in 2002. Earlier rounds focused support on large-scale biomass power stations. The emphasis in later rounds has been to support small and medium sized projects.
Driver for implementation	Biofuel/carbon reduction
Energy - supply-side policies	The Bio-energy Capital Grants Scheme promotes the efficient use of biomass for energy, and in particular the use of energy crops by stimulating the early deployment of biomass-fuelled heat and electricity generation projects. It awards capital grants towards the cost of installing equipment in complete biomass-fuelled projects in the industrial, commercial and community sectors. The main policy aims of the Scheme are to: -Deliver capacity on the ground to create an initial market for biomass fuel, installation equipment and services; -To stimulate the UK renewables industry; -Provide learning benefits that will accelerate the industry and achieve more efficient and cost effective use of biomass for heat and electricity.

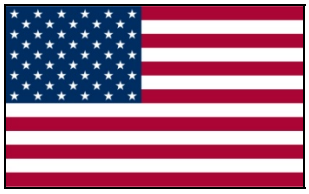
Name of Legislation	**Company Car Tax Reform**
Date of entry into force	2002
Summary of bill	In April 2002, the UK Company Car Tax system was revised to be carbon-based. All company cars first registered after January 1998 are taxed on a percentage of their list price according to one of 21 carbon dioxide emission bands, measured in grams per kilometre (g/km).
Driver for implementation	Transport/energy efficiency
Transport polices	The reform was intended to remove the perverse incentive in the existing system to reduce the tax due by driving unnecessary, extra business miles and to provide a significant incentive to company cars drivers to choose more fuel-efficient vehicles. To further promote environmentally friendly vehicles, Budget 2006 announced that the threshold for the minimum percentage charge rate for calculating the company car tax benefit in kind would be reduced from 140g CO_2/km to 135g CO_2/km in 2008-09. A new rate of 10% for cars of 120g CO_2 and below was introduced from 2008-09.

Name of Legislation	**Energy Efficiency Commitment (2002 - 2005)**
Date of entry into force	2002 (ended, replaced by CERT)
Summary of bill	The Energy Efficiency Commitment (EEC) is a major policy to encourage consumers to make domestic energy efficient improvements. This includes measures such as insulation, energy efficient boilers, appliances and light bulbs. It places an obligation on the suppliers of gas and electricity to promote improvements in energy efficiency through measures provided to domestic consumers. There is a focus on low-income consumers. In 2005, the new EEC included in the UK's Revised Climate Change Programme superseded this original EEC Standards of Performance. This new EEC is slated to run until 2008.
Driver for implementation	Energy efficiency
Emission reduction targets	The overall target for EEC 2002-2005 improvements in energy efficiency was 62 fuel-standard terawatt (TWh) hours and was expected to save around 0.4 MtC per year by 2005. Together with other policies on household energy efficiency, the estimate of total savings is 2.6-3.7 MtC by 2010 and 4.5 MtC by 2020.

Name of Legislation	**Climate Change Agreements**
Date of entry into force	2001
Summary of bill	Climate Change Agreements (CCAs) allow energy intensive business users to receive an 80% discount from the Climate Change Levy, in return for meeting energy efficiency or carbon saving targets. The first agreements took effect on 1 April 2001 and were to run until 31 March 2013. In 2004, the eligibility criteria for the UK's Climate Change Agreements (CCAs) were extended to cover other energy intensive sectors of industry not originally included within the arrangements for CCAs. Those sectors already eligible for CCAs were unaffected by the changes. It was announced in PBR 2007 that the Climate Change Agreement scheme would be extended by 4 years to 2017, subject to state aid approval. This is to provide industry with greater certainty for the medium term, and enable CCAs to continue to contribute significantly to the UK's Climate Change Programme.
Driver for implementation	Climate Change
Emission reduction targets	CCAs have delivered substantial carbon savings. At the end of the third target period, in 2006, operators reduced their emissions by 4.5MtC when compared to the CCA base year. For the same period, it is estimated that businesses achieved energy savings worth around GBP 1,500 million against baselines.

Name of Legislation	**Climate change levy**
Date of entry into force	2001
Summary of bill	The levy applies to electricity, gas, solid fuel and liquefied gases used for lighting, heating and power in the business and public sectors.
Driver for implementation	Climate Change
Putting a price on carbon	The levy was designed to be broadly revenue neutral in concept: at the time of introduction it formed part of a "Levy Package" where the revenue collected is recycled back to business through a 0.3% reduction in National Insurance Contributions and also a system of enhanced capital allowances for investments in energy saving technologies. Electricity produced from qualifying renewable sources and energy used and generated in approved combined heat and power schemes are exempt from the levy. There is also a reduced (20%) rate for energy-intensive businesses that enter into voluntary agreements to reduce their energy use and/or emissions.

4.16 United States of America



4.16.1 Fact Box

Greenhouse Gas emissions incl. LULUCF ($MtCO_2e$) excl. LULUCF ($MtCO_2e$) Change from base year	 6,016 6,925 +15.3%
Latest reporting year	2008
Importance as an emitter	top 3
Copenhagen Accord pledge (for 2020)	in the range of 17% from 2005, in conformity with anticipated U.S. energy and climate legislation
Flagship legislation	**No federal climate change legislation yet.** Legislation with most meaningful measures: *American Recovery and Reinvestment Act (2009)*

4.16.2 Legislative Process

The United States has a bicameral legislature or Congress composed of the Senate and the House of Representatives. Bills may be introduced by a member of either chamber. The first stage in the approval of a bill involves consideration by a Committee. If reported by the Committee, the bill reaches the floor of the full house. Once a bill is approved by one house, it is sent to the other, which may pass, reject, or amend it. In order for a proposed bill to become law, both houses must agree on identical versions of the bill and the President must sign. If the President vetoes a bill, the veto can be overturned if a two-thirds majority of both chambers vote to do so.

With regards to climate change legislation, it is mostly folded into US energy policy. In this sense, the US tends to assume a regulatory approach to tackling climate change as opposed to a legislative one; initiatives tend to be centred on the Environmental Protection Agency (EPA) and the Department of Energy (DOE). Although the passing of energy and climate change bills through Congress amount to a time-consuming and complex process, US legislation on the issue tends to be rather comprehensive, precise, and with clear financial commitments and monitoring mechanisms. Additionally, US Members of Congress seem particularly active when it comes to proposing legislation on renewable energy and energy efficiency. The Senate Committee on Energy and Natural Resources saw over 30 bill proposals relevant to

tackling climate change introduced for its consideration in 2009-2010. These proposals have tended to convey a preoccupation with securing American leadership in renewable energy and energy efficiency technologies, as well as with guaranteeing that climate provisions do not affect trade competitiveness vis-à-vis emerging markets, most notably China and India.

Finally, it is useful to note that although this project covers federal legislation only, there is a myriad of policies and legislation on climate change at the state level. For instance, California is a leading state in this domain with the *Global Warming Solutions Act*, the *Pavley Law* and its stringent air quality targets for motor vehicles, and the *California Environmental Quality Act* with its greenhouse gas emissions provisions. The development of state-level climate legislation was particularly acute during the Bush years, corresponding with a relative lack of federal action [11].

4.16.3 Climate Change Legislation and Regulation

Climate change

The United States' GHG emission reduction targets are relatively modest when compared to other advanced economies, as they amount to less than a 5% reduction by 2020 below 1990 levels. The country's current UNFCCC commitment of reducing emissions by 17% by 2020 in relation to 2005 levels is accompanied by the observation that the final target will be reported to the UNFCCC Secretariat in light of enacted legislation.

There have been a number of attempts to pass a comprehensive climate change bill in the previous (111th) Congress (Table 3). The most significant of these was the *American Clean Energy and Security Bill* (ACES), referred to as the 'Waxman-Markey Bill', which passed the House of Representatives in June 2009. This bill was rejected by the Senate, which subsequently developed several competing versions of a climate bill, none of which enjoyed enough support to pass into law.

The Senate proposal with the broadest support- the *American Power Act* (known as the 'Kerry-Lieberman Bill') - set out a pathway for a 30% reduction in 2025 and a 42% reduction in 2030, in line with the goal to reduce emissions 83% by 2050, all with reference to a 2005 baseline. It further included a comprehensive cap-and-trade system and conferred a role for forest offsets from national and international projects in mitigation strategies.

All of the draft Senate legislation failed to generate enough support and never reached the Senate floor for a vote. As a result, Senate Majority Leader Harry Reid (Democrats) proposed a limited Energy Bill with a focus on the Gulf of Mexico oil spill, the promotion of natural gas vehicles, home energy renovations and financing for the Land

[11] Gerrard, M.B., 2009. Comment on developing a comprehensive approach to climate change mitigation policy in the United States: Integrating levels of government and economic sectors. Environmental Law and Policy Annual Review, August 2009. [URL: http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=162333].

and Water Conservation Fund. Even this attempt failed to generate support and, following the mid-term elections in November 2010 and the beginning of the 112th Congress, all of the draft bills have expired and the ACES bill, which was passed by the House of Representatives, has been deleted from the statute books.

Although the Obama Administration and Environment Protection Agency (EPA) spokespersons have consistently said that they would prefer that Congress pass legislation to address climate change, the EPA began to develop regulations using its existing authority under the Clean Air Act. On December 15, 2009, the agency finalized an "endangerment finding" under Section 202 of the Clean Air Act, which requires it to regulate pollutants for their effect as greenhouse gases for the first time. Relying on this finding, EPA finalized GHG emission standards for cars and light trucks on April 1, 2010. The implementation of these standards has, in turn, triggered permitting requirements and the imposition of Best Available Control Technology for new major stationary sources of GHGs as of January 2, 2011.

However, the beginning of work to regulate GHG emissions under the Clean Air Act has raised some opposition in Congress: legislation was introduced in both the House of Representatives and the Senate in the 111th Congress—but not enacted—aimed at preventing the EPA from implementing these requirements, and similar legislation has been introduced in the 112th. The bills have taken several forms, including resolutions of disapproval for EPA regulatory actions under the Congressional Review Act, stand-alone legislation that would forestall specific EPA regulations, and restrictions on the EPA's spending authority. However, the President has said that he will veto any proposals that contain a prohibition on EPA action on GHGs and, given that the Senate has rejected several amendments to legislation restricting the EPA's ability to regulate GHGs, it is unlikely that the EPA's ability to regulate GHGs will be affected in the 112th Congress. Meanwhile, the EPA has itself promulgated regulations and guidance delaying the applicability of requirements for stationary sources and focusing its regulatory efforts on the largest emitters while granting smaller sources at least a 6-year reprieve. Most commentators agree that comprehensive climate change legislation in the US is unlikely before 2018 and congressional attention in the short-term is likely to focus on renewable or clean energy legislation, rather than legislation to address greenhouse gas emissions.

Table 3: Main draft climate change-related legislation in the 111th US Congress:

Bill	Main Features	Status
The American Power Act	The bill would have set goals for economy-wide emission reductions from 2005 levels: 4.75% by 2013, 17% by 2020, 30% by 2025, 42% by 2030, and 83% by 2050.	Discussion draft released by Senators Kerry (D-MA) and Lieberman (I-CT) on May 12, 2010; failed to reach a floor vote.
American Clean Energy and Security Act **("Waxman-Markey") (H.R. 2454)**	This Act set economy-wide targets of 20% below 2005 levels by 2020 and 83% by 2050; 20% renewable energy by 2020; provisions for offsets from agriculture and forestry.	Passed by the House of Representatives on 26 June 2009 (219-212); stalled in the Senate.

Renewable Energy and Energy Efficiency

Efforts to include climate related measures in the American legislative process are by no means limited to climate change legislation. Measures related to renewable energy and energy efficiency are at the core of the US legal response to climate change. They mostly include financial incentives and tax breaks for the development of clean energy technology and promotion of behavioural change among businesses and consumers.

In addition, there seems to be an underlying engagement with making a transition to a low-carbon economy mirrored in different kinds of legislation that may not be directly concerned with climate related issues. For example, the US stimulus package, known as the *American Recovery and Reinvestment Act 2009*, allocates a USD 94 billion to renewable energy technologies, energy efficiency, low-carbon vehicles, smart grids, and mass transit. This trend is also observed in other legislation. Namely, the energy provisions in the *Duncan Hunter National Defense Authorisation Act for Fiscal Year 2009* and the renewable energy provisions in the 2008 *Farm Bill*.

Furthermore, the US is continuously revising energy efficiency and renewable energy legislation. For instance, the *American Recovery and Reinvestment Act 2009* supersedes the tax provisions of the *Energy Improvement and Extension Act 2008*; the *Energy Storage and Technology Advancement Act 2007* partially supersedes the *Energy Policy Act 2005*; and *Executive Order (E.O.) 13514, 2009: Federal Leadership in Environmental, Energy, and Economic Performance* supersedes *E.O.13423, 2007: Strengthening Federal Environmental, Energy, and Transportation Management*.

US: Flagship Legislation

Name of Legislation	***American Recovery and Reinvestment Act***
Date of entry into force	February 17, 2009
Summary of bill	The bill authorises a stimulus package that supports new and existing renewable energy and energy efficiency programmes. The bill supersedes the tax provisions of the *Energy Improvement and Extension Act 2008* as well as part of the *Emergency Economic Stabilisation Act 2008*.
Driver for implementation	Economic stimulus, climate change, renewable energy and energy efficiency
Monitoring arrangements	The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy will monitor performance in accordance with Risk Mitigation Plans (RMPs). For large grant programs such as the Energy Efficiency and Conservation Block Grant (EECBG), weatherisation assistance, and State Energy Programs (SEP), the DOE will provide assistance to national labs to help measure and verify results. Grant recipients must submit a plan of how they will use funds within 18 months and disburse funds within 36 months. The DOE will perform in-site monitoring annually in each state.
Energy - supply-side policies	The bill allocates USD 16.8 billion to energy efficiency and renewable energy programmes. It foresees the extension of credit for electricity produced from renewable sources. The limitation on the issuance of new clean renewable energy bonds is increased by USD 1.6 billion. On completing the 2009 'National Electric Transmission Congestion Study', the Secretary of Energy shall include an analysis of renewable energy sources constrained by lack of adequate transmission capacity. The bill amends the *Energy Policy Act of 2005* to create the 'Temporary Programme for Rapid Deployment of Renewable Energy and Electric Power Transmission Projects' that includes incremental hydropower and cutting edge biofuel projects. No limitation shall be placed on funding for the purchase and installation of energy efficiency and renewable energy equipment and materials.

Name of Legislation	***American Recovery and Reinvestment Act***
Energy - demand-side policies	USD 2.7 billion is destined to the DOE's 'Energy Efficiency and Conservation Block Grant Program', created without funding by the *Energy Independence and Security Act 2007*, to finance energy efficiency and conservation projects and programs through the concession of grants to states, territories, local governments, and Native American tribes. An additional USD billion is allocated to state energy offices to support weatherisation of low-income homes. USD 2 billion in grants is made available to US-based advanced battery manufacturing facilities.
Transport polices	USD 400 million is allocated to state and local grant programs supporting advanced vehicles.
Research and development	Over USD 80 billion is destined to clean energy research, development and deployment, USD 50 billion of which is to be granted for direct appropriation and USD 30 billion in the form of tax-based incentives. USD 277 million is granted to Energy Frontier Research Centers to develop cost-effective alternative energy technologies. USD 6 billion is allocated to the 'Innovative Technologies Loan Guarantee Program', established by the *Energy Policy Act*, to accelerate the deployment of commercial clean energy technologies. USD 2.5 billion is given for discretionary clean energy research and development managed by the DOE, including USD 800 million for next generation biofuels, USD 400 million for geothermal technologies, and support for several research projects. Grants over USD 110 million to the US National Renewable Energy Laboratory for advancing wind energy technologies, building new energy efficient facilities, and upgrading the Laboratory's Integrated Bio-refinery Research Facility.
Mainstreaming climate change	Allocates USD 500 million to a grant programme supporting clean energy workforce training managed by the Department of Labor and USD 100 million to support more workforce training that is managed by the DOE Office of Electricity Delivery and Energy Reliability.

US: Other Relevant Legislation

Name of Legislation	***Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance***
Date of entry into force	October 5, 2009
Summary of bill	The E.O. aims to make GHG emission management a priority for federal agencies, thus establishing reporting requirements with detailed targets and deadlines. The focus is on transportation, overall energy use and procurement policies. All Federal agencies are required to develop, implement, and annually update a Strategic Sustainability Performance Plan that prioritises agency actions based on life-cycle return on investment. Section 16 also directs agencies to work on climate change adaptation. Supersedes *E.O.13423: Strengthening Federal Environmental, Energy, and Transportation Management.*
Driver for implementation	Climate change, energy efficiency
Monitoring arrangements	Each Federal Agency must report a percentage GHG emissions reduction target for 2020 relative to a 2008 baseline to the White House's Council of Environment Quality (CEQ) Chair and Office of Management and Budget (OMB) Director. Additionally, each agency must produce an inventory of absolute GHG emissions on transportation, energy use and procurement for the fiscal year 2010 and then annually thereafter.
Energy - supply-side policies	Requires all Federal agencies to improve electronic product/service efficiency and stewardship as well as to follow pollution prevention and waste reduction requirements.
Transport polices	Requires all Federal agencies to improve fleet and transportation management.
Mainstreaming climate change	Requires all Federal agencies to enhance efforts towards sustainable buildings and communities.
Adaptation	Section 16 directs government agencies to work on climate change adaptation, including: • The appointment of an Adaptation Specialist

- Establishment of an Agency-wide Climate Change Adaptation Policy and Mandate by June 2011
- Participation in Climate Change Adaptation workshops and education of all employees throughout 2011
- Identification and analysis of climate vulnerabilities that would interfere with the Agency's mission (by March 2012)
- Implementation of the Adaptation Plan by September 2012

Name of Legislation	***Duncan Hunter National Defense Authorisation Act for Fiscal Year 2009 - Energy Provisions***
Date of entry into force	October 15, 2008
Summary of bill	Authorises defence spending for fiscal year 2009 and includes several provisions aimed at energy efficiency, renewable energy, and use of alternative sources of energy in the armed forces.
Driver for implementation	Renewable energy, energy efficiency
Energy - supply-side policies	Section 333 of the bill requires the Department of Defense (DoD) to consider the use of wind and solar energy for expeditionary forces to reduce the need to deliver fuel to battle areas, where electricity is typically produced by engine-driven generators. A report examining the feasibility of solar and wind energy would have to be submitted 120 days following enactment. Section 334 requires the DoD to conduct a study on the use of alternatives to reduce the life-cycle emissions of alternative and synthetic fuels (including coal-to-liquid fuels).

Name of Legislation	***Food, Conservation, and Energy Act of 2008*** **(2008 Farm Bill) -** ***Title IX-Renewable Energy Provisions***
Date of entry into force	June 18, 2008
Summary of bill	Title IX includes provisions on agricultural subsidies, energy, conservation, nutrition and development.
Driver for implementation	Renewable energy
Energy - supply-side policies	Expands the Biorefinery Assistance Programme by providing loan guarantees (2008-2010) of USD 320 million for the creation of commercial-scale biorefineries as well as grants to build demonstration-scale biorefineries. Allocates USD 55 million to support renewable biomass use in biorefineries instead of fossil fuels. Creates the Rural Energy for America Programme (REAP), which is worth USD 285 million and promotes the use of hydroelectric source technologies. Creates the Biomass Crop Assistance Programme to support crop conversion to bioenergy. Expands the Biobased Market Programme by allocating USD 11 million to a federal procurement programme and a voluntary labeling program. Allocates USD 345 million to the Bioenergy Programme for Advanced Fuels to support the production of advanced biofuels. Expands the Feedstock Flexibility Programme for Bioenergy Producers by subsidising the use of sugar for ethanol production through federal purchases of surplus sugar.
REDD/Land Use policies	Authorises the Forest Service to conduct a comprehensive research and development programme on forest biomass for energy generation.
Research and development	Allocates USD 258 million to the Biomass Research and development Initiative to provide competitive grants, contracts and financial assistance to eligible entities to carry out research and development and demonstration of biofuels and biobased products.
Mainstreaming climate change	Provides USD 1 million per year (2008-2012) to the Biodiesel Fuel Education Programme for the allocation of competitive grants to educate public and private actors operating vehicle fleets as well as the public at large about the benefits of biodiesel fuel use.

Name of Legislation	***Energy Independence and Security Act of 2007***
Date of entry into force	December 19, 2007
Summary of bill	Introduces measures to expand the production of renewable fuels, reduce US dependence on oil, increase energy security and address climate change.
Driver for implementation	Climate change, renewable energy, energy efficiency, energy security
Energy - supply-side policies	Sets a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel by 2022, and provides incentives for the development of renewable energy technologies (solar, wind, geothermal, ocean, biomass, or landfill gas).
Energy - demand-side policies	Includes provisions on lighting: phasing out the use of incandescent light bulbs by 2014, improving lighting efficiency by more than 70% by 2020, setting an energy efficient standard, and promoting consumer education and lamp labelling. Also includes provisions for energy efficiency in appliances, buildings (i.e.: ensuring that all new federal buildings are carbon neutral by 2030), and transport. Further establishes provisions for funding of research on carbon capture and storage and hydrogen technologies.
Transport Policies	Includes the first increase in fuel economy standards in 30 years. Automakers are required to boost fleet-wide fuel economy to 35 miles per gallon (14.8 km per litre) by 2020. This was superseded by an agreement brokered by the President to settle automakers' court cases against the State of California. The agreement established a standard of 35.5 miles per gallon by 2016.
Research and development	Creates the Renewable Energy Innovation Manufacturing Partnership Programme to support research and development and deployment of renewable energy technologies (solar, wind, biomass, geothermal, energy storage, and fuel cell systems).
Mainstreaming climate change	Requires all lighting in federal buildings to use Energy Star products or products designated under the Federal Energy Management Programme (FEMP) by the end of 2013; requires all Federal agencies to purchase devices

	that limit standby power use; requires the Department of Housing and Urban Development (HUD) to update energy efficiency standards for all public and assisted housing by applying the International Energy Conservation Code.

Name of Legislation	***Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management***
Date of entry into force	January 26, 2007
Summary of bill	Demands Federal agencies to conduct their transportation and energy-related activities in an environmentally, economically and fiscally sound, and integrated way. Sets more demanding targets than the *Energy Policy Act 2005* and supersedes *E.O. 13123* and *E.O. 13149*.
Driver for implementation	Climate change, renewable energy, energy security
Energy - supply-side policies	Promotes renewable energy generation projects in Federal agencies and determines that each agency should ensure half of the statutorily required renewable energy consumed in a fiscal year comes from new renewable sources.
Energy - demand-side policies	Determines that each Federal agency should reduce energy intensity by 3% annually until the end of fiscal year 2015 or 30% by the end of fiscal year 2015, relative to energy use in 2003.
Transport polices	Determines that if an agency operates a fleet of at least 20 motor vehicles it must ensure a 10% annual increase in total fuel consumption that is non-petroleum-based relative to 2005. Each agency must equally ensure the use of plug-in hybrid (PIH) vehicles when these are commercially available at a reasonably comparable life-cycle cost to non-PIH vehicles.
Mainstreaming climate change	Requires each Federal agency to: 1) improve energy efficiency and reduce GHG emissions, 2) procure energy from new renewable sources, 3) adhere to sustainable environmental practices (i.e.: acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products), 4) reduce the fleet's total consumption of petroleum products.

Name of Legislation	***Energy Policy Act 2005*** **(Energy Bill)**
Date of entry into force	August 8, 2005
Summary of bill	A statute that provides tax incentives and loan guarantees for energy production of various types. Supersedes the *National Energy Plan* and is partially superseded by the *Energy Independence and Security Act 2007*.
Driver for implementation	Climate change, renewable energy, energy efficiency, air pollution
Energy - supply-side policies	Provides USD 4.3 billion tax breaks for nuclear power; USD 2.7 billion to extend the renewable electricity production credit; and USD 1.6 billion in tax incentives for investment in clean coal facilities. Grants loan guarantees for innovative technologies such as advanced nuclear reactors and clean coal. Provides subsidies to wind energy, promotes the competitiveness of geothermal energy vis-à-vis fossil fuels and allocates USD 50 million annually to a biomass grant programme. Includes ocean energy sources as separate renewable technologies. Provides tax credits for electricity generation from wind, closed-loop biomass, open-loop biomass, geothermal energy, solar energy, small irrigation power, municipal solid waste and refined coal. Regulates renewable energy development in the Outer Continental Shelf (OCS).
Energy - demand-side policies	Provides USD 1.3 billion tax breaks for conservation and energy efficiency.
Transport polices	Provides USD 1.3 billion tax breaks for alternative motor vehicles and fuels (ethanol, methane, liquefied natural gas, propane). Provides up to USD 3400 tax credit for hybrid vehicle owners.
Research and development	Requires Federal facilities to draw part of their energy from renewable sources. Provides tax breaks for those making energy conservation improvements to their homes. Requires that Federal Fleet vehicles capable of operating on alternative fuels use these fuels exclusively.

5 Information Sources

5.1 Country Fact Boxes

World Resources Institute, 2010. Climate Analysis Indicators Tool (CAIT), Version 7.0. World Resources Instituted, Washington DC. [URL: http://cait.wri.org/]. Accessed 4 March 2010.

United Nations Framework Convention on Climate Change (UNFCCC), 2011. Greenhouse Gas data from UNFCCC, 1990-2008. [URL: http://unfccc.int/ghg_data/ghg_data_unfccc/items/4146.php].

UNFCCC, 2009. Copehagen Accord. Draft decision -/CP.15, Fifteenth session of the Conference of the Parties,Copenhagen,December2009.[URL:http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf].

5.2 Brazil

Baracui, P.L., Moura, T.F., Frohlich, M.F. and Sabbag, B.K., 2009. Brazil: Recent developments in environmental law. Barbosa, Müssnich and Aragão Advogados, article on Mondaq website. [URL: http://www.mondaq.com/article.asp?articleid=74154].

Chamber of Deputies [Câmara dos Diputados], 2011. Legislative activity section of website [in Portuguese]. [URL: http://www2.camara.gov.br/atividade-legislativa].

Cortez, H., 2010. Regulamentação de política nacional sobre mudança climática deve começar a sair em agosto. Article on Ecodebate website [in Portuguese]. [URL: http://www.ecodebate.com.br/2010/05/06/regulamentacao-de-politica-nacional-sobre-mudanca-climatica-deve-comecar-a-sair-em-agosto/].

Embassy of the Republic of Brazil, Berlin, 2010. Communication to UNFCCC on Brazil's commitments for UNFCCC COP15 (Copenhagen). 29 January 2010. [URL: http://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/brazilcphaccord_app2.pdf].

Enterprise for Energy Research, 2007. Plano Nacional de Energia - PNE 2030. Article on Ministr of Mines and Energy website [in Portuguese]. [URL: http://www.epe.gov.br/Estudos/Paginas/Plano%20Nacional%20de%20Energia%20%E2%80%93%20PNE/Estudos_12.aspx?CategoriaID=346].

International Energy Agency, 2011. Relation with member countries - Brazil. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=BR].

Ministry of the Environment, ND. Brazilian Ministry of the Environment website, legislation page [in Portuguese]. [URL: http://www.mma.gov.br/sitio/index.php?ido=legislacao.index&tipo=4].

Ministry of Mines and Energy, BD. Brazilian Ministry of Mines and Energy website, legislation page [in Portuguese]. [URL: http://www.mme.gov.br/mme/menu/legislacao.html].

President of the Republic of Brazil, 2010. Law No. 12.305, Establishing the National Policy on Solid Waste, 2 August 2010. [URL: http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2010/Lei/L12305.htm].

Sant'Anna, L.F.H., Spitzeck, M.H. , Rabinovici, J., ND. Environment - Brazil. Article on Latin Lawyers website. [URL: http://www.latinlawyer.com/reference/article/40585/brazil/]

Senate of Brazil, 2009. Law No. 12.187, Establishing the National Policy on Climate Change, 29 December 2009. [URL: http://www6.senado.gov.br/legislacao/ListaPublicacoes.action?id=260531].

UNFCCC, 2011. Greenhouse gas inventory data website [URL: http://unfccc.int/di/DetailedByParty/Event.do?event=go].

5.3 Canada

Environment Canada, 2011. Environment Canada website. [URL: http://www.ec.gc.ca].

Footitt, A., 2007. Climate change policy and Canada's oil sand resources: An update and appraisal of Canada's new regulatory framework for air emissions. Report by Tyndall Centre for Climate Change Research, prepared for WWF. [URL: http://www.wwf.org.uk/filelibrary/pdf/oilsands_report.pdf].

International Energy Agency, 2011. Relation with member countries - Canada. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=CA].

Library of the Canadian Parliament, 2011. Library of the Canadian Parliament website. [URL: http://www2.parl.gc.ca/Sites/LOP/VirtualLibrary/index-e.asp].

The office of the Hon. Bryon Wilfert MP, Member of Parliament for Richmond Hill. Website available online [URL: http://bryonwilfert.ca/]\

5.4 China

Department of Climate Change, National Development and Reform Commission, ND. China Climate Change Info-Net website [in English]. [URL: http://www.ccchina.gov.cn/en/].

Government of China, 2007. China's National Climate Chang Program. National Development and Reform Commission, People's Republic of China. [URL: http://en.ndrc.gov.cn/newsrelease/P020070604561191006823.pdf].

State Council Information Office, 2008. China's policies and actions for addressing climate change. [URL: http://china.org.cn/government/news/2008-10/29/content_16681689.htm].

5.5 European Union

Agence de l'Environnement et de la Maîtrise de l'Energie, 2011. Agence de l'Environnement et de la Maîtrise de l'Energie website [in French]. [URL: http://www.ademe.fr].

European Energy Agency, 2010. Annual European Union greenhouse gas inventory 1990–2008 and inventory report 2010. Submission to the UNFCCC Secretariat, European Energy Agency Technical report No 6/2010. [URL: http://www.esauk.org/Summary_EU_GHG_inventory_2010.pdf].

European Union, 2011. EUROPA - official website of the European union. [URL: http://europa.eu/].

European Union, ND. European Law website portal. [URL: http://eur-lex.europa.eu].

Institute for European Environmental Policy (IEEP), 2010. IEEP website, climate change and energy section. [URL: http://www.ieep.eu/topics/climate-change-and-energy/].

5.6 France

Agence de l'Environnement et de la Maîtrise de l'Energie, 2011. Agence de l'Environnement et de la

Maîtrise de l'Energie website [in French]. [URL: http://www.ademe.fr].

Assemblée Nationale, ND. Assemblée Nationale website [in French]. [URL: http://www.assemblee-nationale.fr/].

International Energy Agency, 2011. Relation with member countries - France. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=FR].

Legifrance, 2011. Legifrance website [in French]. [URL: http://www.legifrance.gouv.fr].

Ministère de L'Écologie, du Développment Durable, des Transports et du Logement, 2011. Ministère de L'Écologie, du Développment Durable, des Transports et du Logement website [in French]. [URL: http://www.developpement-durable.gouv.fr].

Réseau Action Climat-France, ND. Réseau Action Climat France website (in French] [URL: http://www.rac-f.org/]

5.7 Germany

German Bundestag (ND). German Bundestag website [English version]. [URL: http://www.bundestag.de/htdocs_e/bundestag/function/index.html]. Accessed: 4 March 2011.

International Energy Agency, 2011. Relation with member countries - Germany. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=DE].

Koch, H.-J., 2010. Climate change law in Germany. Journal for European Environmental and Planning Law, 7 (4): 411-426.

5.8 India

Bureau of Energy Efficiency, 2011. Indian Bureau of Energy Efficiency website. [URL: http://www.bee-india.nic.in/]

Centre for Science and Environment, ND. India environmental portal website. [URL: http://www.indiaenvironmentportal.org.in/node/255279]

Indian Renewable Energy Development Agency. ND. Section of website on wind energy. [URL: http://www.ireda.gov.in/homepage1.asp?parent_category=2&category=21].

International Energy Agency, 2011. Relation with member countries - India. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=IN].

Library of Congress, 2004. Country profile: India. December 2004. [URL: http://lcweb2.loc.gov/frd/cs/profiles/India.pdf].

Ministry of Environment and Forests, 2011. Indian Ministry of Environment and Forests website. [URL: http://moef.nic.in/]

Ministry of Environment and Forests, 2010. India: Taking on climate change. Post-Copenhagen domestic actions. Ministry of Environment and Forests, Government of India. [URL: http://www.indiaenvironmentportal.org.in/files/India%20Taking%20on%20Climate%20Change.pdf].

Ministry of New and Renewable Energy, 2011. Indian Ministry of New and Renewable Energy website. [URL: http://www.mnre.gov.in/].

Ministry of Power, 2011. Indian Ministry of Power website. [URL: http://www.powermin.nic.in/].

Parliament of India, 2011. Parliament of India website. [URL: http://parliamentofindia.nic.in/].

Pew Centre on Global Climate Change, 2011. Pew Centre on Global Climate Change website. [URL: http://www.pewclimate.org/].

Pew Centre on Global Climate Change and The Energy and Resource Institute (TERI), 2008. Climate change mitigation measures in India. International Brief 2, September 2008. Pew Centre on Global Climate Change and TERI, New Delhi. [URL: http://www.pewclimate.org/docUploads/India-FactSheet-09-08.pdf].

Srivastava, L., 2009. India's integrated energy policy. Article on mydigitalfc.com, 13 January 2009. [URL: http://www.mydigitalfc.com/opinion/india%E2%80%99s-integrated-energy-policy-641].

World Resources Institute, ND. Sustainable Development Policies and Measures (SD-PAMs) database: India. [URL: http://projects.wri.org/sd-pams-database/india/].

5.9 Indonesia

Agence Françoise de Développement (AFD), ND. AFD and the Climate Change Programme Loan (CCPL). [URL: http://www.afd.fr/jahia/webdav/site/afd/shared/PORTAILS/PAYS/EUDN_INDONESIE/Fiche_AFD_CCPL_eng.pdf].

Anon, ND. Indonesia drafts rules on forest clearing ban. Article on carbonpositive website, 7 July 2010. [URL: http://www.carbonpositive.net/viewarticle.aspx?articleID=2041].

Bratasida, L., 2009. Renewable energy development in Indonesia. Presentation to side event at the 17th meeting of the United Nations Commission on Sustainable Development, 14 May 2009, New York. [URL: http://www.globalbioenergy.org/fileadmin/user_upload/gbep/docs/2009_events/CSD_side_event_NY/Machmud_-_GBEP_CSD_side_event_140509.pdf].

Butler, R. A., 2010. Indonesia's plan to save its rainforests. Article on Mongabay website, 14 June 2010. [URL: http://news.mongabay.com/2010/0614-indonesia_purnomo_saloh.html].

Creagh, S., Supriatna, Y., 2010. Q+A: Indonesia issues draft rules on forest clearing. Article on Planet Ark website. [URL: http://www.planetark.org/enviro-news/item/58687].

International Energy Agency, 2011. Relation with member countries - Indonesia. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=ID].

Ministry of Forestry, 2010. Indonesian Ministry of Forestry website [in English]. [URL: http://www.dephut.go.id/index.php?q=en/node/6496]. Accessed 5 March 2011

President of the Republic of Indonesia, 2008. Presidential Regulation on National Council for Climate Change. [URL: http://www.bkpm.go.id/file_uploaded/environment.doc].

5.10 Italy

Anon, ND. Legislation Italy. Article on World Law Guide Lexadin website. [URL: http://www.lexadin.nl/wlg/legis/nofr/eur/lxweita.htm].

Darlington, R., 2010. A short guide to the Italian political system. Article on author's website. [URL: http://www.rogerdarlington.me.uk/Italianpoliticalsystem.html].

European Energy Agency, 2010. Annual European Union greenhouse gas inventory 1990–2008 and

inventory report 2010. Submission to the UNFCCC Secretariat, European Energy Agency Technical report No 6/2010. [URL: http://www.esauk.org/Summary_EU_GHG_ inventory_2010.pdf].

International Energy Agency, 2011. Relation with member countries - Italy. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=IT].

Ladu, R., 2001. Update to overview of the sources of Italian law. Published online at LLRX.com website. [URL: http://www.llrx.com/features/ladu2.htm].

Ministry of Economic Development, 2011. Italian Ministry of Economic Development website. [URL: http://www.sviluppoeconomico.gov.it/].

Ministry of the Environment, 2011. Italian Ministry of the Environment website [in Italian]. [URL: http://www.minambiente.it/].

Ministry of Infrastructure and Transport, 2011. Italian Ministry of Infrastructure and Transport website. [URL: http://www.mit.gov.it/mit/site.php].

National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), 2011. ENEA website. [URL: http://www.enea.it/].

5.11 Japan

International Energy Agency, 2011. Relation with member countries - Japan. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=JP].

Ministry of Justice, 2011. Japanese Ministry of Justice website [in English]. [URL: http://www.moj.go.jp/ENGLISH/].

Ministry of the Environment, 2011. Japanese Ministry of the Environment website [in English]. [URL: http://www.env.go.jp/en/].

Torney, D. and Kamal Gueye M. (2009). *Climate change mitigation policies in selected OECD countries: Trade and development implications for developing countries.* International Centre for Trade and Sustainable Development (ICTSD) Programme on Competitiveness and Sustainable Development, Series on Climate Change and Competitiveness Issue Paper No.8. ICTSD, Geneva. [URL: http://ictsd.org/downloads/2010/01/climate-change-mitigation-policies-in-selected-oecd-countries.pdf].

United Nations, 1998. Compendium of energy conservation legislation in countries of the Asia and Pacific region. United Nations Economic and Social Commission for Asia and the Pacific, Bangkok. [URL: http://www.unescap.org/esd/energy/publications/compend/cec.htm].

5.12 Mexico

Bionero, 2008. Qué quiere Alberto Cárdenas Jiménez con su propuesta de Ley sobre cambio climático? [What does Alberto Cárdenas Jiménez want with his proposed law on climate change law] [in Spanish]. Bionero website, 29 April 2010. [URL: http://www.bionero.org/cambio-climatico/bfque-quiere-alberto-cardenas-jimenez-con-su-propuesta-de-ley-sobre-cambio-climatico].

Government of Mexico, 2008. Law for the Promotion and Development of Bioenergy. [URL: http://www.diputados.gob.mx/LeyesBiblio/pdf/LPDB.pdf].

Government of Mexico, 2008. Law for the Sustainable Use of Energy (LASE). [URL: http://www.diputados.gob.mx/LeyesBiblio/pdf/LASE.pdf].

Government of Mexico, 2008. Law for the Use of Renewable Energies and for Financing the Energy Transition (LAERFTE). [URL: http://www.diputados.gob.mx/LeyesBiblio/pdf/LAERFTE.pdf].

Government of Mexico. 2003. General Law on Sustainable Forest Development. [URL: http://www.diputados.gob.mx/LeyesBiblio/pdf/259.pdf].

Instituto Nacional de Ecología, 2011. Climate change portal for Mexico website [in Spanish]. [URL: http://cambio_climatico.ine.gob.mx/].

Instituto Nacional de Ecología, 2011. Instituto Nacional de Ecología website [in Spanish]. [URL: http://www.ine.gob.mx/index.php].

International Energy Agency, 2011. Relation with member countries - Mexico. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=MX].

Krishnamurthy, K., 2010. Mexico proposes ambitious law on climate change. Article on Climatico website, 23 July 2010. [URL: http://www.climaticoanalysis.org/post/mexico-proposes-ambitious-law-on-climate-change-2/].

5.13 Russia

Anon, ND. Legislation Russia. Article on World Law Guide Lexadin website. [URL: http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwerus.htm].

CMS Legal, 2009. New energy efficiency legislation in Russia. CMS Russia Newsletter, December 2009. CMS Russia, Moscow. [URL: http://www.cmslegal.ru/New-Energy-Efficiency-Legislation-in-Russia-12-07-2009].

CMS Legal, ND. CMS Legal Russia website. [URL: http://www.cmslegal.ru/].

Government of Russia, 2009. Press conference following the 24th EU-Russia summit [in Russian]. Transcript of press conference on Kremlin website, 18 November 2009. [URL: http://www.kremlin.ru/transcripts/6034].

Gutbrod, M.B., Sitnikov, S.L., Kalinin, M.V., 2010. New developments in Russian legislation on saving energy and increasing energy efficiency. Baker & McKenzie Legal Alert. Baker & McKenzie, Moscow. [URL: http://www.bakermckenzie.com/ALRussiaLegislationSavingEnergyIncreasingEfficiencyJan10/].

Herbert Smith LLP, 2009. Focus on Russia. Herbert Smith in association with Gleiss Lutz and Stibbe, October 2009. [URL: http://www.herbertsmith.com/NR/rdonlyres/026117AE-497D-4C19-9F0F-7C5CBB21A7CA/12931/7685_FocusonRussiaD3.pdf].

International Energy Agency, 2011. Relation with member countries - Russian Federation. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=RU].

Jurist, ND. Russia. Jurist - The legal education network website. [URL: http://jurist.law.pitt.edu/world/russia.htm].

Korppoo, A., 2009. The Russian debate on climate doctrine: Emerging issues on the road to Copenhagen. UPI Briefing Paper 33, 5 June 2009. [URL: http://www.upi-fiia.fi/fi/publication/79/].

Korppoo, A., Moe, A., 2007. Russian JI procedures: More problems than solutions? Climate Strategies (policy brief), Fridtjof Nansen Institute, Norway. [URL: http://www.ncsf.ru/resources/materials/70.pdf].

Larsen, A.H., 2009. Russian climate policy. Fact sheet published online by Norges Naturvernforbund. [URL: http://naturvernforbundet.no/getfile.php/Dokumenter/rapporter/2009/Fact-Sheet-Russia.pdf].

Law Library of Congress, 2010. Legal research guide: Russia. [URL: http://www.loc.gov/law/help/russia.php#sources].

PFC Energy, 2007. Using Russia's associated gas. Report by PFC Energy prepared for the Global Gas Flaring Reduction Partnership and the World Bank. PFC Energy, Washington DC. [URL: http://siteresources.worldbank.org/INTGGFR/Resources/pfc_energy_report.pdf].

Tissot, D., 2010. New opportunities for participation in Joint Implementation projects. Brief prepared by CMS Legal, Moscow. [URL: http://www.cmslegal.ru/New-opportunities-for-participation-in-Joint-Implementation-projects-01-28-2010].

5.14 South Africa

Department of Environmental Affairs, 2008. Long-term mitigation scenarios: Strategic options for South Africa. [URL: http://www.environment.gov.za/HotIssues/2008/LTMS/LTMS.html].

International Energy Agency, 2011. Relation with member countries - South Africa. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=ZA].

Muir, A., 2009. Climate change law and policy from a South African conservation perspective. Presentation at the Climate Action Partnership workshop on: The policy project, research interface and the road to adaptation. 12-13 October 2009, Cape Town, South Africa. [URL: http://www.cap.org.za/workshop_02/day_1_session_1/Climate%20Change%20Law%20and%20Policy_Andrew%20Muir.pdf].

National Energy Regulator of South Africa (NERSA), 2009. NERSA website. [URL: http://www.nersa.org.za/default.aspx].

National Treasury of the Republic of South Africa, 2009. Taxation Laws Amendment Bills. [URL: http://www.treasury.gov.za/comm_media/press/2009/2009060101.pdf].

Republic of South Africa, 2009. Taxation Laws Amendment Bill (B10 - 2009). [URL: http://www.pmg.org.za/files/bills/090901b10-09.pdf].

Republic of South Africa, 2008. National Energy Act 2008. Government Gazette 24 November 2008. [URL: http://www.info.gov.za/view/DownloadFileAction?id=92826].

Stein, R., Levetan, S., Christie, L., Fritelli, C., 2009. Environment: South Africa - Climate change, renewables and energy. Practical Law Company (PLC) Cross-border Environment Handbook 2009/10. Practical Law Company. [URL: http://www.ens.co.za/newsletter/briefs/South-Africa-climate-change.pdf].

van der Merwe, C., 2010. Climate policy to go before Cabinet this month. Article in Engineering News, 3 August 2010. [URL: http://www.engineeringnews.co.za/article/climate-policy-to-go-before-cabinet-this-month-2010-08-03].

van der Merwe, C., 2010. South Africa to complete green paper by year end. Article in Engineering News, 21 January 2010. [URL: http://www.engineeringnews.co.za/article/sa-aims-to-complete-climate-change-policy-by-year-end-2010-01-21].

van der Merwe, C., 2009. South Africa starts coming to grips with economic impacts of climate change. Article in Engineering news, 4 September 2009. [URL: http://www.engineeringnews.co.za/

article/south-africas-climate-change-policy-2009-08-25].

5.15 South Korea

Ahn, M.-C., 1998. The energy conservation programme of the Republic of Korea. In: Compendium of energy conservation legislation in countries of the Asia and Pacific region. United Nations Economic and Social Commission for Asia and the Pacific, Bangkok. [URL: http://www.unescap.org/esd/energy/publications/compend/ceccpart2chapter3.htm].

International Energy Agency, 2011. Relation with member countries - Repulic of Korea. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=KR].

Ministry of Government Legislation, 2010. Ministry of Government Legislation website [in English]. [URL: http://www.moleg.go.kr/english/korLawEng].

The Presidential Committee on Green Growth (ND). Green growth Korea website [in English]. [URL: http://www.greengrowth.go.kr/english/].

5.16 United Kingdom

Anon, ND. Political system in the UK. [URL: http://www.nriol.com/welcome2uk/politics-in-uk.asp]. Accessed 4 March 2010.

Department of Energy and Climate Change (DECC), 2011. DECC website. [URL: www.decc.gov.uk/]. Last

Department of Environment, Food and Rural Affairs (DEFRA), 2011. DEFRA website. [URL: www.defra.gov.uk/].

International Energy Agency, 2011. Relation with member countries - United Kingdom. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=UK].

Parliament of the United Kingdom, 2011. UK Parliament website. [URL: http://www.parliament.uk].

5.17 United States of America

Anon, 2009. Bingaman: Clean-energy bill clears first hurdle. Post on US Senator (New Mexico) Jeff Bingamen's website, 17 June 2009. [URL: http://bingaman.senate.gov/news/20090617-01.cfm].

Baker, L., 2010. Levin publishes clean energy tax bill. Tax-News.com, New York, 29 July 2010. [URL: http://www.tax-news.com/news/Levin_Publishes_Clean_Energy_Tax_Bill____44559.html].

Crook, C., 2010. Action on carbon is down the drain. Financial Times [online edition], 25 July 2010. [URL: http://www.ft.com/cms/s/0/19abeff6-981c-11df-b218-00144feab49a.html].

Gerrard, M.B., 2009. Comment on developing a comprehensive approach to climate change mitigation policy in the United States: Integrating levels of government and economic sectors. Environmental Law and Policy Annual Review, August 2009. [URL: http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=162333].

Gonzalez, G., 2010. Renewables sector fights to resuscitate RES in Senate. Environmental Finance website, 29 July 2010. [URL: http://www.environmental-finance.com/news/view/1257].

govtrack.us, 2009. H.R. 2454: American Clean Energy and Security Act of 2009. govtrack.us website. [URL: http://www.govtrack.us/congress/bill.xpd?bill=h111-2454].

International Energy Agency, 2011. Relation with member countries - United States. International Energy Agency website. [URL: http://www.iea.org/country/m_country.asp?COUNTRY_CODE=US].

Mintzer, I., Leonard, A. J., Valencia, I. D., 2010. Counting thegGigatonnes: Building trust in greenhouse gas inventories from the United States and China. World Wildlife Fund, Washington DC. [URL: http://www.worldwildlife.org/climate/Publications/WWFBinaryitem16605.pdf].

Senate Committee on Energy and Natural Resources (ND). Legislative calendar (online). [URL: http://energy.senate.gov/public/index.cfm?FuseAction=Legislation.ViewBySubcommittee&Congress_ID=111&Subcommittee_ID=ce189d44-42c8-4565-b062-b72410945a6b].

United States Library of Congress (2011) Library of Congress website. [URL: http://thomas.loc.gov].

United States Library of Congress, 2009. Summary and status of the American Clean Energy Leadership Act of 2009. United States Library of Congress, Washington DC. [URL: http://thomas.loc.gov/cgi-bin/bdquery/z?d111:SN01462:@@@D&summ2=m&].

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