

1 INTRODUCTION

As the world's largest economy, the United States (US) is also the largest consumer of fossil energy sources and the largest per capita emitter of greenhouse gases (GHGs);¹ and emissions have continued to grow, largely as a result of an expanding transportation sector and reliance on coal in the energy sector: according to data released in December 2008, domestic US GHG emissions amounted to 7,282.4 Mt CO_{2eq} in 2007, a figure that was 16.7% higher than emission levels in 1990.² Given this overall trend, the US has been widely portrayed as a laggard in the regulation of climate change.³ Over the past decade, criticism has not only been levelled against the federal strategy to address domestic GHG emissions, which has been largely based on voluntary commitments, intensity targets, and funding for technology research and development;⁴ at the international level, US positions have faced intense scrutiny and scepticism ever since it withdrew from the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC).⁵

A number of recent developments may reverse this perception in the near term, however. Public opinion has noticeably shifted in the recent past: according to nationwide surveys, an overwhelming majority of Americans consider global warming a serious or very serious problem, and well over half believe that global warming should be one of the highest priorities for government leaders.⁶ Growing concern about the risks arising from climate change and high oil prices have also brought climate and energy issues to the policy forefront,⁷ where the reality of climate change is now widely recognised, and the need for action among policymakers has altered the dynamics of the political debate.⁸

¹ Cate Hight and Gustavo Silva-Chávez, *Change is in the Air: The Foundations of the Coming American Carbon Market Climate Report N° 15* (Paris: Mission Climat of Caisse des Dépôts, 2008), 4: in 2004, the US emitted almost twice as much per person as did Russia, six times as much as China and twelve times as much as India.

² Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2007* (Washington, DC: EIA, 2008).

³ For further discussion, see Ulf Moslener and Bodo Sturm, "A European Perspective on Recent Trends in US Climate Policy", 18 *European Environment* (2008), 257-275.

⁴ David Campbell, *U.S. Climate & Energy Policy: An Overview* (Washington, DC: RGIT, 2008), 3-5.

⁵ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto (Japan), 10 December 1997, in force 15 February 2005, 37 I.L.M. 22 (1998); on the rejection of the Kyoto Protocol by the United States, see Michael Lisowski, "Playing the Two-Level Game: US President Bush's Decision to Repudiate the Kyoto Protocol", 11 *Environmental Politics* (2002), 101-119.

⁶ Camilla Adelle and Sirini Withana, *EU and US Public Perceptions of Environmental, Climate Change and Energy Issues* (Brussels: IEEP, 2008), 8: a New York Times/CBS News Poll, conducted in April 2007, indicates that over 90% of the 1052 people surveyed considered global warming to be a serious or very serious problem, while 52% of those surveyed state that global warming should be one of the highest priorities for government leaders, and 78% of those polled maintained that action to counter the effects should be taken immediately.

⁷ Joseph E. Aldy, Camilla Bausch, and Michael Mehling, *Climate Change and Energy Security: Lessons Learned*. Washington, DC: American Institute for Contemporary German Studies, 2008, 7.

⁸ See Tim Profeta and Cathleen Kelly, *The US Climate Policy Debate: How Climate Politics are Moving Forward on Capitol Hill and in the White House* (Washington, D.C.: The German Marshall Fund of the United States, 2008), 3.

Accordingly, the regional, state and local levels have seen a number of vibrant initiatives unfold over recent years.⁹ Meanwhile, a newly appointed administration and changed majorities in Congress are likely to create the most favourable conditions in over a decade for ambitious legislation at the federal level. Indeed, a pioneer of market mechanisms for pollution control,¹⁰ the US is once again exploring emissions trading as a policy instrument to address GHG emissions; a series of legislative proposals in both houses of Congress and the ambitious climate policy agenda embraced by the incoming president, Barack Obama, all feature economy-wide cap-and-trade schemes as their central approach to mitigate GHG emissions.¹¹

Emerging trading schemes in the US offer the opportunity of a future trading link to the European Union emissions trading scheme (EU ETS). Defined as a mechanism through which market participants in one trading scheme can use carbon units issued under another scheme to meet domestic compliance obligations,¹² linking promises greater diversity of abatement options, improved market size and liquidity, and ultimately a more efficient allocation of resources.¹³ It should come as no surprise, therefore, that European decision makers have expressed an interest in the benefits of linking. Already in late 2006, the EU Council of Environment Ministers stated “its commitment to developing a strong global carbon market by linking the EU ETS with other emissions trading schemes at national or regional level”;¹⁴ earlier, the European Commission had published a communication titled “Building a Global Carbon Market”, in which it called for consideration of linkages between the EU ETS and “mandatory emission trading schemes in third countries capping absolute emissions at national or regional level”, be they “planned or in operation”.¹⁵ Similar interest has also been voiced in a number Member States; the German foreign minister Frank-Walter Steinmeier, for instance, called for a “powerful new trans-Atlantic market” as a way for Europe and the US to assert leadership in global efforts to mitigate climate change.¹⁶

⁹ See below, Section 2.2.

¹⁰ See, for instance, the overview of trading schemes provided by A. Denny Ellerman, Paul L. Joskow & David Harrison, Jr., *Emissions Trading in the US: Experience, Lessons, and Considerations for Greenhouse Gases* (Arlington, Va.: Pew Center on Global Climate Change, 2003), 8-31.

¹¹ For further details, see below, Section 2.1.

¹² Erik Haites, *Harmonisation between National and International Tradable Permit Schemes*, CATEP Synthesis Paper, OECD Doc. CCNM/GF/SD/ENV(2003)2/FINAL (Paris: OECD, 2003), 5.

¹³ Richard Baron and Cedric Philibert, *Act Locally, Trade Globally: Emissions Trading for Climate Policy* (OECD, Paris 2005), 123: “The economic case for linking is clear. Linking various systems and emissions targets under a single emissions trading umbrella would help deliver a common environmental goal at least-cost, as each participant would now have access to a broader range of mitigation options.”

¹⁴ European Council of Environment Ministers, Council Conclusions of the 2773rd Environment Council Meeting, Brussels, 18 December 2006, para 4.

¹⁵ European Commission, Building a Global Carbon Market – Report Pursuant to Article 30 of Directive 2003/87/EC, COM(2006)676 final.

¹⁶ Strategy Paper of the German Foreign Ministry, cited by Peter Ehrlich, “Berlin plant Klimapakt mit US-Staaten”, *Financial Times* of 5 July 2007.

Interest in an operational link between different trading schemes has also been expressed in the US. Not only are there plans to create domestic links between the emerging carbon markets in the US, but in California, an Executive Order issued by the Governor explicitly calls for the development of a “program that permits trading with the European Union ... and other jurisdictions.”¹⁷ Moving one step further, several schemes currently under consideration or already in force allow for introduction of allowances from other emissions trading schemes,¹⁸ including the EU ETS.¹⁹ Informal contacts between US state officials and representatives of the European Commission and different Member States have created opportunities to exchange information and explore linking options,²⁰ and the Californian Governor and British Prime Minister signed a partnership to cooperate in the development of effective climate policies, *inter alia* with a view to “evolve market mechanisms”.²¹

Reflecting the high level of interest in linking, more than 15 national and regional governments, including the European Commission, several EU Member States, and a number of US states, agreed to launch an International Carbon Action Partnership (ICAP) in October 2007 with the express aim of creating a “forum to discuss relevant questions on the design, compatibility and potential linkage of regional carbon markets”.²² A recent study forecasts a global carbon market worth €2 trillion by 2020, largely consisting of linked national and regional markets in Europe and North America.²³

Yet current research on the benefits and conditions of linking also collectively affirms that differences in the design of emissions trading schemes can hamper the prospects for a market linkage; technical solutions may help overcome such divergences, but tend to lessen the benefits of linking or affect the environmental integrity of underlying markets.²⁴ Needless to say, understanding the differences between trading schemes and their potential incompatibility is of vital importance when assessing the expediency of a trading link.

¹⁷ Executive Order S-20-06 by the Governor of the State of California, 17 October 2006, available at <<http://gov.ca.gov/index.php?/executive-order/4484>>, para. 5.

¹⁸ See, for instance, the Regional Greenhouse Gas Initiative Model Rule, 15 August 2006, available at <http://www.rggi.org/docs/model_rule_8_15_06.pdf>, Section XX-10.3 (b) (1).

¹⁹ Andrew S. Bergman, “Regional Greenhouse Gas Initiative: The First Mandatory Greenhouse Gas Trading Program in the United States”, 9 *ABA Sustainable Development, Ecosystems and Climate Committee Newsletter* (2006), 9-13, at 11.

²⁰ Joseph Kruger and William A. Pizer, *Regional Greenhouse Gas Initiative Prelude to a National Program?* (Washington, D.C.: Resources for the Future, 2006), 4.

²¹ Anon., “California-U.K. Emissions Deal Bypasses Bush”, *San Francisco Chronicle*, 1 August 2006, at A1.

²² See International Carbon Action Partnership (ICAP), Political Declaration, 29 October 2007, Lisbon, Portugal, available at <http://www.icapcarbonaction.com/docs/icap_declaration.pdf>; ICAP currently brings together US and Canadian members of the Western Climate Initiative, north-eastern US members of the Regional Greenhouse Gas Initiative, the European Commission and several EU Member States (France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the UK) as well as Australia, New Zealand and Norway. Japan is an observer. For commentary, see Martin Bergfelder, “ICAP – The International Carbon Action Partnership: Building a Global Carbon Market from the Bottom-up”, 2 *Carbon & Climate Law Review* (2008), 202-203.

²³ See Point Carbon, *Carbon 2008 – Post-2012 Is Now* (Oslo: Point Carbon, 2008), 17, assuming a market volume of 38 Gt and a carbon price of €50 in 2020; in a recent survey among stakeholders and observers in the carbon market, 73% of respondents expected such a global market by 2020, see Point Carbon, *Carbon Market Transactions in 2020: Dominated by Financials?* (Oslo: Point Carbon, 2008), 48.

²⁴ See, for instance, Erik Haites and Fiona Mullins, *Linking Domestic and Industry Greenhouse Gas Emission Trading Systems. Report prepared for the Electric Power Research Institute (EPRI), International Energy Agency (IEA) and the International Emissions Trading Association (IETA)* (Toronto: Margaree Consulting, 2001), available at <<http://www.iea.org/textbase/papers/2001/epri.pdf>>, 67.

Given the current interest in a transatlantic market link, this study provides an update of US developments in the area of emissions trading, and assesses one of the most important bills to date – arguably still the standard of reference for federal GHG legislation in the US – with a view to its compatibility with the EU ETS. A brief overview also addresses key features of other federal and regional proposals, followed by a more detailed assessment of the potential trade law implications of US action to regulate greenhouse gases.

2 OVERVIEW OF CURRENT AND EMERGING GHG EMISSION TRADING SCHEMES IN THE US

2.1 Federal Initiatives

Convening between 3 January 2007 and 3 January 2009, the 110th Congress of the United States witnessed a substantial increase in activity on the design of domestic climate change policy. More than 235 bills, amendments, and resolutions focused on climate change were presented during the 110th Congress, and committees and subcommittees have hosted more hearings on climate change than in any previous Congress.²⁵ In the House of Representatives, a Select Committee for Energy Independence and Global Warming was created on 8 March 2007, which, although without formal legislative authority, has been influential in focusing attention and facilitating debate on climate policy.²⁶

After the elections on 4 November 2008, the Democratic party – which has traditionally been more likely to favour ambitious GHG regulation – expanded its majority in both houses;²⁷ it also chairs all relevant committees with jurisdiction over GHG regulation, and the recent replacement of Representatives John D. Dingell (D-MI) and Frederick C. Boucher (D-VA) as Chairs of the Committee on Energy and Commerce and the Subcommittee on Energy and Air Quality, respectively, by Representatives Henry D. Waxman (D-CA) and Edward J. Markey (D-MA), implies that the House will be far more proactive in regulating greenhouse gases during the current 111th Congress.

The bills for GHG emissions trading schemes submitted in the 110th Congress will likely serve as the foundation for future policy deliberations. A number of proposed economy-wide bills would have set a 2050 emission target of 80% below 1990 levels, including proposals by Congressman Henry D. Waxman and Senators Bernard Sanders (D-VT) and Barbara L. Boxer (D-CA). Several bills would set 2050 targets of 1990 minus 60%, including the proposal by Senators John Kerry (D-MA) and Olympia Snowe (D-ME).²⁸

²⁵ See Annex I to this study and Pew Center on Global Climate Change, “Climate Action in Congress: U.S. Climate Change Legislation”, available at <http://www.pewclimate.org/what_s_being_done/in_the_congress>.

²⁶ See United States House of Representatives Select Committee for Energy Independence and Global Warming, *Final Staff Report for the 110th Congress*, 31 October 2008, available at: <<http://globalwarming.house.gov/tools/3q08materials/files/0064.pdf>>; the Select Committee was re-established for the 111th Congress pursuant to H.Res. 5 on 6 January 2009 by the Speaker of the House, Nancy P. Pelosi (D-CA).

²⁷ As of 26 January 2009, the party distribution in the 111th Congress is as follows: Democratic majorities of 55 to 41 in the Senate (with two independent Senators and two vacancies), and 256 to 178 voting members (with one vacancy) in the House of Representatives. Despite substantial Democratic majorities in both the Senate and the House, procedural requirements in the Senate call for 60 votes to close debate on a bill and proceed to vote on its substantive merits (cloture), and 67 votes to approve an international treaty (ratification).

²⁸ Aldy (supra, note 7), 20.

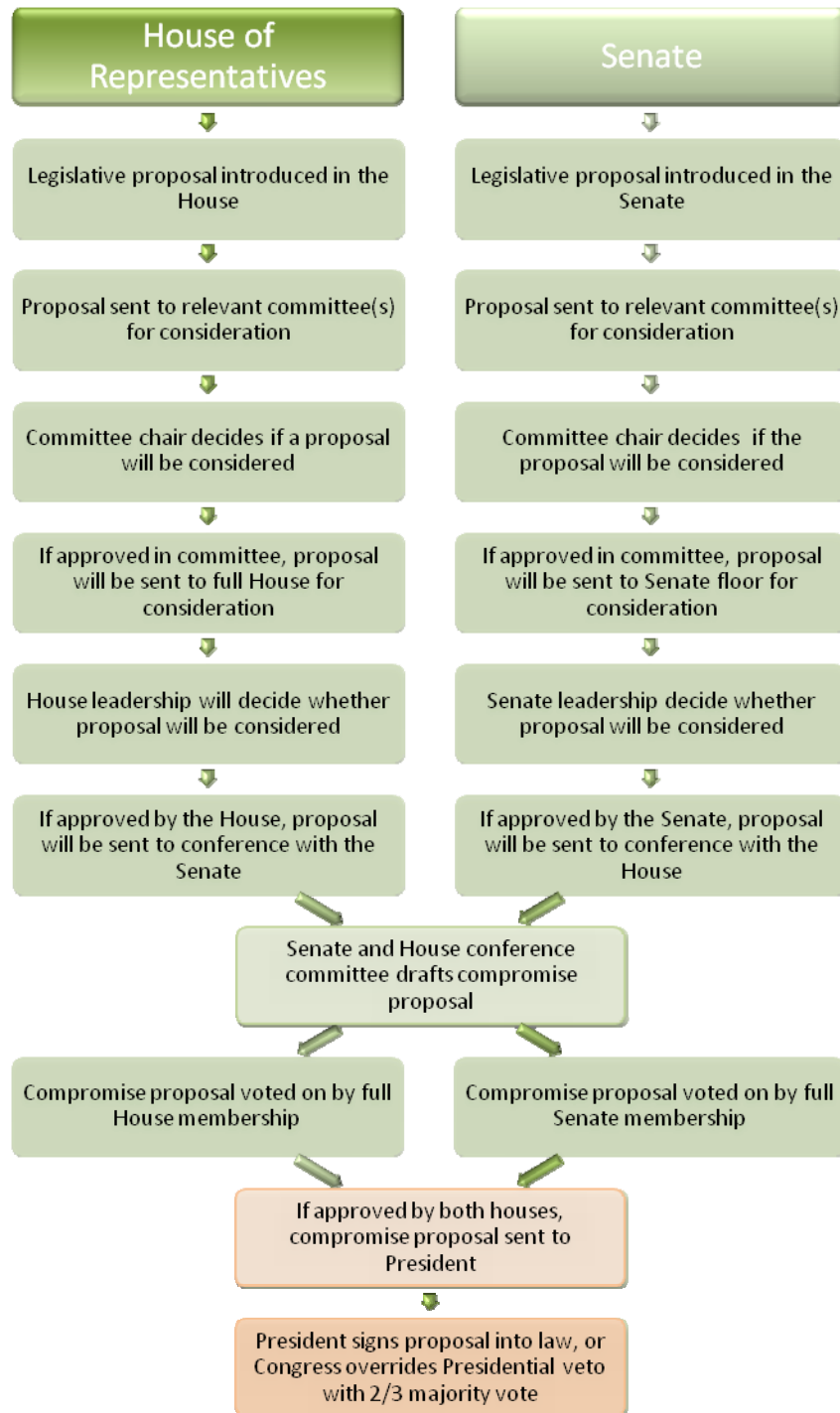
By far the most attention was given to a bill introduced on the floor of the US Senate on 18 October 2007 by Senators Joseph I. Lieberman (I-CT) and John W. Warner (R-VA).²⁹ Formally designated “America’s Climate Security Act”, the bill soon garnered several co-sponsors, and successfully cleared the first hurdle on 5 November 2007 by passing from the Senate Subcommittee on Private Sector and Consumer Solutions to Global Warming and Wildlife Protection³⁰ to the Senate Committee on Environment and Public Works, from which it was reported favourably by a narrow margin of votes on 5 December 2007.³¹

²⁹ For the full text of Senate Bill S.2191 of 18 October 2007 (“America’s Climate Security Act of 2007”), see <<http://www.govtrack.us/data/us/bills.text/110/s/s2191.pdf>>.

³⁰ Approval occurred with 4 to 3 votes.

³¹ The bill was reported favourably with 11 to 8 votes, and introduced as Senate Bill S.3036 (“Lieberman-Warner Climate Security Act of 2008”) on 20 May 2008, available at <<http://www.govtrack.us/data/us/bills.text/110/s/s3036pcs.pdf>>.

Figure 1: The Federal Legislative Process (based on: Hight et al., 2008)



On 6 June 2008, the US Senate voted on a procedural motion to close the debate on a revised version of the bill, which had been introduced as a substitute amendment on 4 June 2008 by the Chair of the Committee, Senator Boxer.³²

³² S.Amdt. 4825: In the nature of a substitute. An amendment to S.3036 [110th]: Lieberman-Warner Climate Security Act of 2008, available at <<http://thomas.loc.gov/cgi-bin/query/r?r110:fld001:S55050>>.

Ambitious in scope, the bill would have called for binding annual emission reductions of 4% below 2005 levels by 2012, 19% below 2005 levels by 2020, and 71% below 2005 by 2050;³³ it also would have established a GHG registry to monitor emissions in the US,³⁴ and created a market for carbon emission allowances with ample coverage and the ability of holders to freely trade, transfer, or sell allowances.³⁵ Concerns about the use of revenue from allowance auctioning and the lack of time to discuss amendments overshadowed the debate on the Senate floor; moreover, timing for the debate was arguably poor for a bill predicted to increase energy costs at a time when large segments of the population were preoccupied about record gasoline prices.

In the end, opponents of the bill blocked discussions at every procedural stage, including a request that the clerk of the Senate read the entire 491 pages of the bill aloud. Faced with such delaying tactics, the Majority Leader, Senator Henry M. Reid (D-NE), indicated that no constructive debate on the bill could be expected and called a procedural vote to “invoke cloture,” or close the debate. A favourable vote by three fifths of the Senate, or 60 Senators, would have been needed to proceed to a vote on actual passage of the bill, yet only 48 Senators expressed their support of cloture.³⁶ Moreover, ten Senators who had voted favourably for the procedural motion later signed a letter indicating that they had serious reservations about specific provisions of the bill and would not have voted favourably on its substance without major revisions.³⁷

³³ Section 201 of ACSA 2008, *supra* note 32; in absolute terms, this would have translated into a cap of 5,775 million units in 2012, falling to 1,732 million units in 2050. Emissions of hydrofluorocarbons (HFCs) would have been cut more rapidly, declining from 2012 levels by at least 15% in 2020, 45% in 2030, and 70% by 2040. Overall, the bill would have reduced total US emissions (from all sources, capped and non-capped) by up to 66% below 2005 levels by 2050, see Committee on Environment and Public Works, “A Summary of the Boxer Substitute Amendment to the Lieberman-Warner Climate Security Act”, available at http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=441a4c27-8df5-4008-8931-7e07e8914a51h

³⁴ Section 102 of ACSA 2008, *supra* note 32, sets out methods for avoiding the double-counting of emissions, protocols to prevent any avoidance of reporting requirements, and methods to verify and audit submitted data; it also established consistent policies for calculating carbon content and greenhouse gas emissions for each type of fossil fuel reported.

³⁵ Sections 401, 402, 411, 412 of ACSA 2008, *supra* note 32; an estimated 87% of US GHG emissions would be subject to the cap-and-trade program; about 2,100 large covered facilities would have been required to submit emissions allowances under the program, including: coal-fired power plants and other entities that use more than 5,000 metric tonnes of coal, natural gas processors and importers, petroleum processors and refiners, manufacturers and importers of more than 10,000 metric tons of GHGs (as measured in CO_{2eq}), and any entity that emits more than 10,000 metric tons (CO_{2eq}) of HFCs as a byproduct of the manufacture of hydrochlorofluorocarbons (HCFCs).

³⁶ More precisely, the cloture failed with 48 votes in favour and 36 votes against, and with six absent senators indicating support, see <http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=110&session=2&vote=00145>.

³⁷ In a letter to Senators Reid and Boxer dated 6 January 2008, Senators Debbie Stabenow (D-MI), Jay Rockefeller (D-WV), Carl Levin (D-MI), Blanche Lincoln (D-AR), Mark Pryor (D-AR), Jim Webb (D-VA), Evan Bayh (D-IN), Claire McCaskill (D-MO), Sherrod Brown (D-OH) and Ben Nelson (D-NE) stated: “As Democrats from regions of the country that will be most immediately affected by climate legislation, we want to share our concerns with the bill that is currently before the Senate... we cannot support final passage of the Boxer Substitute in its current form.”

Still, the bill is likely to be reintroduced in a revised version during the current 111th Congress, and arguably remains the standard of reference for GHG legislation by Congress in the US.

Meanwhile, in the House of Representatives, Edward J. Markey, Chairman of the Select Committee for Energy Independence and Global Warming and now also Chairman of the Subcommittee on Energy and Air Quality, introduced a climate change bill entitled the “Investing in Climate Action and Protection (iCAP) Act” on 4 June 2008.³⁸ Covering approximately 87% of US GHG emissions,³⁹ the bill would establish objectives for GHG emission reductions to 2005 levels by 2012, to 20% below 2005 levels by 2020, and to 85% below 2005 levels by 2050.⁴⁰ Moreover, the iCAP Act would auction 94% of allowances in 2012; the remaining 6% would be allocated to energy-intensive industries. By 2020, 100% of allowances would be auctioned. Companies also could use domestic offset programs approved by the Environmental Protection Agency (EPA) to cover 15% of their emissions, as well as an additional 15% from approved international offset programs. The bill would require more than half of the auction proceeds to be distributed to low- and middle-income households in the form of rebates and tax credits.

Another proposal meriting attention was introduced by Henry A. Waxman, the new Chairman of the Committee on Energy and Commerce, on 21 March 2007. Designated the “Safe Climate Act of 2007”,⁴¹ it would have imposed annual reductions in GHG emissions each year starting in 2010, reaching 80% below 1990 levels in 2050.⁴² It also would have created an emissions trading scheme with auctioned allowances, although the specification of details is left to the administration.⁴³ Proceeds from auctioning would have been deposited in a “Climate Reinvestment Fund”, dedicated to supporting technology research and development, compensating consumers for any energy cost increases, providing transition assistance for affected workers and regions, and protecting against harm from climate change.⁴⁴ No debate was ever held on either this bill or the proposed iCAP-Act during the previous session of Congress. Because all proposed bills are cleared from the books at the end of a session, either bill would have to be reintroduced in the current 111th Congress to proceed further in the legislative debate.

³⁸ H.R. 6186, introduced by Representative Edward J. Markey on 4 June 2008 (“Investing in Climate Action and Protection Act (iCAP)”), available at http://markey.house.gov/docs/energy_environment/icap_act_final.pdf.

³⁹ Pursuant to Section 700 (5) of the Clean Air Act, as amended by H.R. 6186, “covered entities” regulated under the cap would include power plants and large industrial facilities; entities that produce or import petroleum- or coal-based liquid or gaseous fuels; entities that produce or import hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or nitrogen trifluoride; natural gas local distribution companies; and geological carbon sequestration sites.

⁴⁰ Section 712 (d) of the Clean Air Act, as amended by H.R. 6186; in absolute figures, this would amount to a reduction from 6,098 million tonnes in 2012 to 930 million tonnes in 2050.

⁴¹ H.R.1590, introduced by Representative Henry A. Waxman on 21 March 2007 (“Safe Climate Act of 2007”), available at <<http://thomas.loc.gov/cgi-bin/query/z?c110:H.R.1590>>.

⁴² Section 701 of the Clean Air Act, as amended by H.R. 1590.

⁴³ Section 704 of the Clean Air Act, as amended by H.R. 1590.

⁴⁴ Ibid.

Both Representative Waxman and Senator Boxer, as chairs of the respective committees with jurisdiction on climate legislation in each house of Congress, have announced the introduction of comprehensive global warming bills in the first half of 2009.⁴⁵

Complementing this new intensity of effort in the legislature are ambitious policy proposals from the new administration. Following a campaign largely focused on the promise of change, the victory of the Democratic Senator from Illinois Barack H. Obama in the presidential election on 4 November 2008 heralded a major shift in the climate and energy policies of the United States administration. During the campaign, Senator Obama had already outlined a comprehensive “New Energy for America” plan he would implement if elected to the presidency.⁴⁶ It sets out the cornerstones of a sweeping energy reform and stimulus package aimed at creating new employment, reducing dependence on foreign energy imports, and limiting GHG emissions. Specific measures include the strategic investment of \$150 billion over 10 years to accelerate the commercialization of plug-in hybrid vehicles, promote the development of commercial scale renewable energy, encourage energy efficiency investments, and begin the transition to a new digital electricity grid.

Additionally, this plan calls for a minimum share of US electricity demand to be covered with renewable sources by specified dates,⁴⁷ and outlines design elements of an economy-wide cap-and-trade scheme to help reduce GHG emissions by 80% below 1990 levels by 2050. Full auctioning of GHG allowances under this scheme would minimize windfall profits for affected power generators and raise significant revenue, of which \$15 billion would be earmarked each year to support the development of energy efficiency improvements, more efficient biofuels and clean energy vehicles, and federal and state wildlife management. All remaining receipts would be used for rebates and other transition relief to avert any adverse impacts on low-income families. Clearly, a cap-and-trade scheme of this scope and ambition would become the centrepiece of US climate policy efforts, much as the EU ETS has become in Europe. Yet while Congressional action on cap-and-trade bill has been described as a preferable option by the new administration, it has also announced that it would instruct the Environmental Protection Agency (EPA) to move forward with executive rulemaking if Congress does not take action within 18 months. Aside from the long-term objective of reducing GHG emissions by 80% below 1990 levels by 2050, moreover, an interim target of returning to 1990 levels by 2020 has been announced, requiring a reduction by 17% below current levels. Initial appointments by the presidential transition team, such as Nobel laureate Steven Chu to the Department of Energy and former EPA Administrator Carol M. Browner to a newly created White House office on energy and environment, further signal determination to promote a more aggressive climate agenda and reengage in the international negotiation process geared towards adopting a successor regime to the Kyoto Protocol beyond 2012.

⁴⁵ Barbara L. Boxer, “Statement on Next Steps for Global Warming Legislation”, 15 January 2009, available at <http://epw.senate.gov/public/index.cfm?FuseAction=Majority.PressReleases&ContentRecord_id=dc4125d8-802a-23ad-472f-77e4f259b06e&Designation=Majority>.

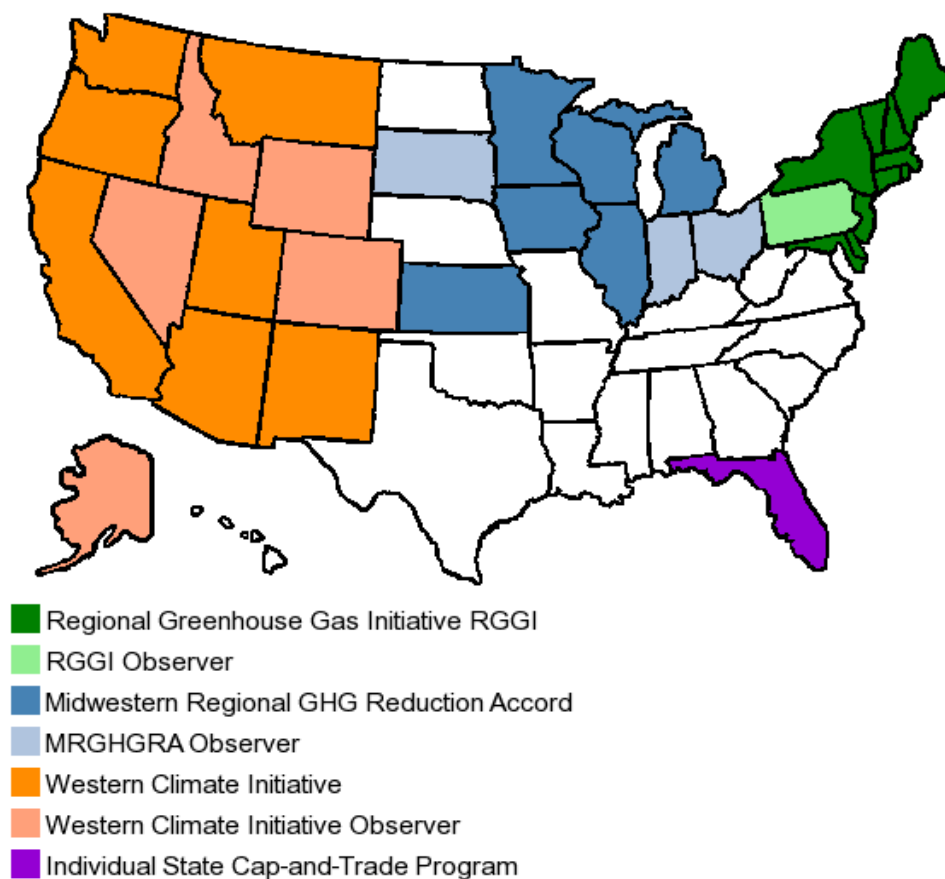
⁴⁶ Barack H. Obama (D-IL) and Joseph R. Biden (D-DE), “New Energy for America”, Lansing, MI, 3 August 2008, available at <http://www.barackobama.com/pdf/factsheet_energy_speech_080308.pdf>.

⁴⁷ These quantified targets are: 10% share of electricity generated from renewable sources by the year 2012, and 25% by the year 2025.

2.2 Regional Initiatives

A number of states have joined regional arrangements in partnership with other US states as well as Canadian provinces and Mexican border states. Compared to efforts at the state level, such regional initiatives can increase the efficiency of policy efforts by encompassing a broader geographic area, eliminating duplication of work, and creating more uniform regulatory environments. In recent years, a number of regional initiatives have developed to increase renewable energy generation, track renewable energy credits, and research and establish baselines for carbon sequestration. Given the benefits of coordinated action, emissions trading has also become a subject of regional cooperation. Three programmes, in particular, focus on the creation of a regional cap-and-trade scheme: the Regional Greenhouse Gas Initiative (RGGI) in the Northeast and mid-Atlantic, the Western Climate Initiative (WCI) on the West Coast, and the Midwest Regional Greenhouse Gas Reduction Accord. Although each of these agreements differs in coverage and scope, they all share the objective of harnessing carbon market for climate policy objectives.

Figure 2: Regional Climate Initiatives (Source: Pew Center on Global Climate Change)



2.2.1 Regional Greenhouse Gas Initiative (RGGI)

The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by ten US Northeastern and Mid-Atlantic states to limit GHG emissions. Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont are all signatory states to a Memorandum of Understanding (MoU) released on 20 December 2005 that describes the essential elements of the trading system.⁴⁸ Starting in 2009, these ten states have committed themselves to stabilising and later reducing CO₂ emissions from the power sector.⁴⁹ For the period between 2009 and 2014, the total emissions cap for all power producers in all ten states is set at 188 million short tons⁵⁰ per year; thereafter, the cap decreases by 2.5% each year until 2018.⁵¹ The total cap is broken down into state allocations agreed upon in the MoU.⁵²

Each of the participating states had to pass rules or laws to implement the trading scheme. In order to ensure consistency across states, a Staff Working Group (SWG) consisting of state officials issued a Draft Model Rule on 15 August 2006, providing a template for state legislation.⁵³ As a result, the individual CO₂ Budget Trading Programs in each of the ten participating states are linked through CO₂ allowance reciprocity. Accordingly, regulated entities will be able to use a CO₂ allowance issued by any of the ten participating states to demonstrate compliance with the state program governing their facility. Overall, the ten individual state programs will function as a single regional compliance market for carbon emissions, creating the first mandatory, market-based GHG emissions reduction program in the US.

⁴⁸ Regional Greenhouse Gas Initiative Memorandum of Understanding, 20 December 2005, available at <http://www.rggi.org/docs/mou_12_20_05.pdf>; Pennsylvania is an observer to the RGGI process.

⁴⁹ Fossil fuel fired electric generating units serving a generator of 25 MW or larger are required to comply with the CO₂ Budget Trading Program; once a unit triggers applicability and becomes a CO₂ budget unit, that unit will remain subject to the program, regardless of changes to the unit. A unit that commences operation on or after 1 January 2005 is considered fossil fuel fired provided that fossil fuel comprises more than 5% of its total annual heat input; a unit that commenced operation prior to 1 January 2005 is considered to be fossil fuel fired if fossil fuel comprises more than 50% of its total annual heat input. Regionally, units of this size and type are responsible for approximately 95% of CO₂ emissions from the electric generation sector.

⁵⁰ Unlike the metric tonne containing 1000 kilogrammes, or 2204 pounds, a short ton is a unit of weight equivalent to 2000 pounds, or 907.4 kilogrammes.

⁵¹ This puts the final RGGI cap, applicable during the final two years of the scheme (2018 and 2019), at 169 million short tons, or 90% of the initial cap.

⁵² The largest allocation – over 64 million short tons per year – goes to the State of New York, which has the largest population and economy in the region; conversely, the smallest allocation – just over 1.2 million short tons – goes to Vermont, a small state with one nuclear plant powering most of its area.

⁵³ RGGI Model Rule, *supra* note 18.

In terms of timing, the period between 2009 and 2018 is broken into trading periods of three years each, starting with the period from 2009 to 2012. Covered facilities may bank allowances within a trading period. They may also use domestic carbon offset allowances from specified GHG reduction projects⁵⁴ to meet up to 3.3% of their emissions obligation during each trading period, a limit that rises to 5% in the event of a “stage one trigger event” where allowance prices exceed \$7 on average for each short ton over a period of twelve months.⁵⁵

While the Model Rule creates a uniform framework for the Budget Trading Program, it also leaves states with flexibility in adopting provisions regarding applicability and source exemptions, allowance allocations and allowance set-asides, and permitting. Accordingly, there are important differences among states in how they choose to implement the model rule. One important difference is the portion of allowances allocated to emitters based on historical emissions as opposed to the portion auctioned by the state.⁵⁶

Under the MoU, participating states merely agreed to allocate a minimum of 25% of allowances to support consumer benefit programs. Individual states may choose how to allocate the remaining 75% of their allowances. Auctions are conducted in regular intervals on an electronic platform, pursuant to a uniform auctioning format.⁵⁷ In the first auction, held on 25 September 2008, 59 bidders participated, most of them utilities acquiring allowances for compliance purposes. All 12.5 million allowances offered sold at a clearing price of US\$3.07 per allowance. The December 2008 auction sold 31.5 million allowances at US\$3.48. It had 80 participants, again most of them compliance buyers.⁵⁸ A third auction has been scheduled for 18 March 2009. Differences between states also relate to the use of proceeds from auctions⁵⁹ and the number of allowances set aside for specific purposes.⁶⁰

⁵⁴ Offsets may be generated from five types of projects: landfill methane capture and destruction; reductions in emissions of sulfur hexafluoride; sequestration of carbon through afforestation; reduction or avoidance of CO₂ emissions from natural gas, oil, or propane end-use combustion through improvements in end-use energy efficiency; and avoided methane emissions from agricultural manure management operations.

⁵⁵ In the case of a “stage two trigger event,” in which prices exceed \$10 for a short on average for twelve months, generators may use offsets to satisfy 10% of their obligations and may purchase international offset credits or allowances.

⁵⁶ While most states chose to auction close to all of their allocation, Delaware is auctioning only 60% in 2009 to increase to 100% over 5 years.

⁵⁷ Allowances are available for sale on a quarterly basis in lot sizes of 1,000 allowances. The initial auctions offered allowances through a single-round, uniform-price, sealed-bid auction format, with flexibility to transition to a multiple round, ascending-price auction format to address evolving market conditions; for details on the auctioning process, such as participation, reserve prices and monitoring, see Charles Holt et al., “Auction Design for Selling CO₂ Emission Allowances under the Regional Greenhouse Gas Initiative”, 15 October 2008, available at <http://rggi.org/docs/rggi_auction_final.pdf>.

⁵⁸ The low participation of financial players is likely due to the precarious economic situation – banks and hedge funds do not want to take any risk. This means there will not be as active a secondary market as there could be.

⁵⁹ While most states will use the money for investment in renewable energy and energy efficiency programs, some, such as New Hampshire, have written in their rules that auction proceeds above an auction clearing price of \$6 per ton would be returned to electricity ratepayers.

⁶⁰ For instance, the state of Maryland has adopted a “trigger price” provision that comes into effect if the allowance price exceeds \$7 per short ton. If this trigger price is met, Maryland would have the option of setting aside up to 50% of its allowances for purchase by its own electric utilities at a price ceiling of \$7 per short ton; other states have set aside allowances for cancellation in recognition of voluntary efforts to participate in green power programs, which is typically done by paying a premium on their electricity bill or purchasing Renewable Energy Certificates (RECs).

2.2.2 Western Climate Initiative (WCI)

On 26 February 2007, the Western Climate Initiative (WCI) was launched to develop regional strategies to address climate change.⁶¹ It currently brings together Arizona, California, Montana, New Mexico, Oregon, Utah, and Washington, and the Canadian provinces of British Columbia, Manitoba, Ontario, and Quebec;⁶² these states and provinces have adopted a regional goal of lowering GHG emissions by 15% below 2005 levels by 2020.⁶³ A recommended design for an emission trading scheme was released on 23 September 2008.⁶⁴ Starting on 1 January 2012, it would cap emissions of six GHGs⁶⁵ from facilities with annual emissions of 25,000 metric tonnes CO_{2eq} or greater.⁶⁶ Initially, the scheme would only cover emissions from large downstream emitters, notably electricity,⁶⁷ industrial processes, and industrial and commercial sources. From 1 January 2015, however, coverage would extend to upstream emissions from fuel combustion for transportation purposes and at residential, commercial, and industrial facilities, to the extent that these are not already covered.⁶⁸

Once implemented, coverage could extend to nearly 90% of the emissions in the region, representing over 70% of the Canadian economy and 20% of the US economy.⁶⁹ Initially, at least 10% of the allowances will be auctioned, rising to a minimum of 25% by 2020. No more than 49% of emissions reductions may be achieved through offsets.⁷⁰ Participating states and provinces aspire to a higher auctioning percentage over time, possibly rising to 100%.⁷¹ The remainder is to be distributed by each partner jurisdiction as it sees fit, which may include further auctioning. If analysis indicates that allocations of free allowances to particular sectors should be treated uniformly to address competitiveness concerns, the distribution of allowances will be standardised as necessary.

⁶¹ For the original agreement signed by the Governors of Arizona, California, New Mexico, Oregon, and Washington, see “Western Regional Climate Action Initiative”, 27 February 2007, available at <<http://www.westernclimateinitiative.org/ewebeditpro/items/O104F12775.pdf>>.

⁶² An additional 13 jurisdictions participate as observers, including the US states of Alaska, Colorado, Idaho, Kansas, Nevada, and Wyoming; the Canadian province of Saskatchewan; and the Mexican border states of Baja California, Chihuahua, Coahuila, Nuevo Leon, Sonora, and Tamaulipas.

⁶³ See WCI, “Statement of Regional Goal”, 22 August 2007, available at <<http://www.westernclimateinitiative.org/ewebeditpro/items/O104F13006.pdf>>.

⁶⁴ WCI, “Design Recommendations for the WCI Regional Cap-and-Trade Program”, 23 September 2008, available at <<http://www.westernclimateinitiative.org/ewebeditpro/items/O104F20432.PDF>>.

⁶⁵ Covered emissions include the six primary greenhouse gases identified by the UNFCCC: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

⁶⁶ WCI, *supra* note 64, 3.

⁶⁷ Also included is electricity generation that occurs outside, but is delivered inside jurisdictions participating in the scheme.

⁶⁸ The point of regulation is set where the fuels enter commerce inside the participating states and provinces, for example the fuel distributors, see WCI, *supra* note 64, 3.

⁶⁹ WCI, “Overview: The Western Climate Initiative’s Cap-and-Trade Program Design Recommendations”, 23 September 2008, available at <<http://www.westernclimateinitiative.org/ewebeditpro/items/o104f19872.pdf>>.

⁷⁰ In other words, the number of offsets that could be used would equal approximately 1% of the overall cap in 2013, increasing to 7.35% of the cap by 2020, see Hight et al., *supra* note 1, 16; both domestic offsets and credits generated in developing countries through the CDM could be used for compliance.

⁷¹ WCI, *supra* note 64, 8.

To guard against the risk of setting the cap too high, the first 5% of allowances auctioned by each partner will have a minimum price. If part of the allowances is not purchased at or above the minimum price, a fraction will be retired.⁷²

2.2.3 *Midwestern Greenhouse Gas Accord (MGGA)*

On 15 November 2007, the governors of nine Midwestern states and one Canadian premier signed the Midwestern Greenhouse Gas Accord (MGGA) at the Midwestern Governors Association Energy Security and Climate Change Summit.⁷³ Currently, Iowa, Illinois, Kansas, Manitoba, Michigan, Minnesota, and Wisconsin are members, and Indiana, Ohio, Ontario and South Dakota are observers. Under the Accord, members pledge to establish targets for tracking and reducing emissions of six GHGs and finalising a multi-sector cap-and-trade programme as well as a model rule for its implementation in state laws.

Additionally, the accord states that a carbon market should be operational within 30 months of its signing, and calls for the future cap-and-trade programme to link to other regional or global carbon markets to reduce leakage and increase market efficiency. A set of preliminary recommendations issued by an Advisory Group on 1 November 2008 propose a reduction target “consistent with that recommended by the scientific community” of 60 to 80% below 2005 levels by 2050.⁷⁴ Will many of the recommendations are still under discussion, the proposed trading scheme will likely combine an upstream and a downstream approach, with a “hybrid approach” to allowance distribution, including “some auctioning, some free allocation, and some allocation at a small fixed fee”; compatibility with other trading schemes, including the EU ETS, is also mentioned as an objective.⁷⁵

2.2.4 *Mayors’ Climate Protection Agreement*

On 16 February 2005, the date when the Kyoto Protocol entered into force, the mayor of Seattle, Gregory J. Nickels, launched the US Mayors Climate Protection Agreement. Its objective was to encourage at least 141 US cities to adopt the reduction objective agreed to for the US under the Kyoto Protocol prior to its withdrawal: a GHG emissions reduction of 7% below 1990 emissions levels by the 2008 to 2012 period. Specifically, participating cities committed to:

- strive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
- urge their state governments, and the federal government, to enact policies and programs to meet or beat the GHG emission reduction target defined for the US under the Kyoto Protocol; and

⁷² WCI, supra note 64, 9.

⁷³ Midwestern Governors Association, “Midwestern Greenhouse Gas Accord”, 15 November 2007, available at <<http://www.midwesternaccord.org/midwesterngreenhousegasreductionaccord.pdf>>; since the original signature, an additional Canadian province has joined the MGGA.

⁷⁴ MGGA, “Preliminary Recommendations of the Advisory Group, 1 November 2008”, available at <<http://www.midwesternaccord.org/News%20Page/Accord%20Draft%20Recs%2011%201%2008.doc>>.

⁷⁵ Ibid., 2.7 and 3.5.

- urge the US Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system.⁷⁶

By 1 January 2009, more than 900 mayors, representing in excess of 80 million citizens, had signed the US Mayors Climate Protection Agreement. In 2007, moreover, the US Conference of Mayors launched the Mayors Climate Protection Center to administer and track the agreement.⁷⁷

While it appears that few signatories to the Agreement will achieve the Kyoto Protocol reduction target by 2012, the agreement has prompted several cities to launch policy initiatives aimed at reducing municipal GHG emissions, including energy efficiency improvements to city buildings and transportation fleets, expansion of public transportation networks, renewable energy mandates, new building codes with efficiency requirements for residential and commercial structures, urban development plans that discourage vehicle use and seek to establish “walkable” communities, and tax incentives and grants for community groups that take additional steps to reduce their GHG footprints.⁷⁸ On 22 June 2008, the US Mayors Conference released a survey which showed that high gasoline prices and the weak overall economy were burdening climate protection efforts in participating cities.⁷⁹ In the survey, financial resource constraints were cited as the largest obstacle to expanding energy efficiency and climate protection initiatives.

2.3 State Initiatives: The California Global Warming Solutions Act (AB32) and California Climate Exchange (CaCX)

Across the country, a majority of states have adopted or are currently developing strategies to reduce their GHG emissions.⁸⁰ Among these, California has traditionally been a frontrunner. As the eighth largest economy and the fifteenth largest emitter of GHGs worldwide, California is also responsible for annual emissions of 469 million MtCO_{2eq}.⁸¹ On 27 September 2006, the State of California adopted legislation with the intention of cutting state-wide GHG emissions to 1990 levels by 2020.⁸² The Global Warming Solutions Act of 2006, also known as Assembly Bill 32 (AB 32),⁸³ directs the California Air Resources Board (CARB) to establish a program for GHG emissions reporting and to monitor and enforce compliance with this program.

⁷⁶ US Mayors Climate Protection Agreement, as endorsed by the 73rd Annual US Conference of Mayors meeting, Chicago, 16 February 2005, available at <http://www.usmayors.org/climateprotection/documents/mcpAgreement.pdf>

⁷⁷ See <<http://usmayors.org/climateprotection>>.

⁷⁸ Hight et al., supra note 1, 12.

⁷⁹ The United States Conference on Mayors, “Survey on Mayoral Leadership on Climate Protection”, 22 June 2008, available at <<http://www.usmayors.org/climateprotection/climatesurvey07.pdf>>.

⁸⁰ For further details, see Pew Center on Global Climate Change, “What’s Being Done...In the States”, available at <http://www.pewclimate.org/what_s_being_done/in_the_states>.

⁸¹ Hight et al., supra note 1, 13.

⁸² As defined in the bill, “greenhouse gases” include CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

⁸³ California Global Warming Solutions Act of 2006 (AB32), 17 October 2006, adopted as Division 25.5 of the Health and Safety Code, available at http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_32&sess=cur&house=b&author=nunez

Although it does not mandate specific measures to reduce GHG emissions, AB 32 authorizes the state board to adopt market-based compliance mechanisms such as emissions trading.⁸⁴ With an Executive Order signed on 16 October 2006, moreover, the Governor of California, Arnold Schwarzenegger, specifically directed CARB to “collaborate with the Secretary for Environmental Protection and the Climate Action Team to develop a comprehensive market-based compliance program.”⁸⁵

Under AB 32, regulations to implement a cap-and-trade program need to be developed by 1 January 2011 in order for the program to begin in 2012. On 30 June 2007, a Market Advisory Committee (MAC) issued a final report recommending design options for a trading scheme and stated that “[l]inkages with other mandatory GHG trading systems should be encouraged”.⁸⁶ Key recommendations from the report include broad coverage of all major GHG-emitting sectors of the economy into the cap-and-trade program, a “first-seller approach” to capping emissions associated with imported electricity, and a mixed approach of free allocation and auctioning of allowances.

A Scoping Plan approved by CARB on 11 December 2008 takes up these recommendations and specifies the relationship of a cap-and-trade scheme to other GHG reduction actions, such as direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, and voluntary actions.⁸⁷ It identifies cap-and-trade as an important component of the plan, covering 85% of Californian emissions.⁸⁸ Given the participation of California in the WCI, however, specific details on the design of the trading scheme and rule development will be coordinated with the timeline for developing a regional cap-and-trade programme.

On 30 May 2007, the private Chicago Climate Exchange (CCX)⁸⁹ announced it would form a California Climate Exchange (CaCX) to develop and trade financial instruments relevant to AB32.⁹⁰ Among the objectives of this exchange listed by CCX are ensuring “price transparency and efficient, exchange-based systems for maximum success” and accomplishing “linkage with other national, regional and global markets.” Product development is to be finalised for operation in accordance with the evolution and requirements of an emissions trading scheme once implemented under AB32.

⁸⁴ See Part 5, Section 38570, of AB 32.

⁸⁵ Executive Order S-20-06 by the Governor of the State of California, 17 October 2006, available at <<http://gov.ca.gov/index.php?/executive-order/4484>>.

⁸⁶ Market Advisory Committee (MAC), “Recommendations for Designing a Greenhouse Gas Cap-and-Trade System for California”, 30 June 2007, available at <http://www.climatechange.ca.gov/documents/2007-06-29_mac_final_report.pdf>.

⁸⁷ CARB, “Proposed Scoping Plan: A Framework for Change”, 15 October 2008, approved 11 December 2008, available at <<http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf>>.

⁸⁸ *Ibid.*, 30-31.

⁸⁹ For further details on CCX, see below, Section 2.4.

⁹⁰ CCX, “Chicago Climate Exchange, Inc. (CCX) announces formation of the California Climate Exchange (CaCX)”, 30 May 2007, available at <<http://www.chicagoclimatex.com/news.jsf?story=1401>>.

2.4 Voluntary Initiatives: The Chicago Climate Exchange (CCX)

Operating since 30 September 2003, the Chicago Climate Exchange (CCX) is the first and largest voluntary GHG emissions cap-and-trade scheme in North America. Although participation is voluntary, compliance with emission reduction objectives is binding under private law once a member joins.⁹¹ Accordingly, companies joining the exchange commit themselves to reducing their aggregate emissions of six GHGs by a specified amount during a limited period.⁹² Members who cannot achieve the reduction target through internal abatement measures can meet their compliance commitment by purchasing Carbon Financial Instruments (CFI)⁹³ through an electronic trading system from other CCX members; overall, trading is structured in three parts:

- the Trading Platform, which is a marketplace for executing trades among Registry Account Holders;
- the Clearing and Settlement Platform, which processes all transaction information; and
- the Registry, which is the official database for Carbon Financial Instruments owned by Registry Account Holders.

Overall, 23 Mt of CO_{2eq} were traded on the CCX Trading Platform in 2007.⁹⁴

Offsets from projects implemented through the CCX offset programme can also be used to comply with reduction targets, although total use of offsets for compliance is limited to no more than 50% of the required reductions.⁹⁵ CCX employs independent verification to ensure compliance.⁹⁶ Currently, CCX has more than 400 members, ranging from major corporations to state and municipalities, educational institutions, and agricultural entities.⁹⁷

⁹¹ For details, see <<http://www.chicagoclimatex.com/content.jsf?id=25>>.

⁹² In Phase I, which ran between 2003 and 2006, emission reduction targets were 1% per year, below an average baseline period of 1998 to 2001. Phase II extends the reduction period through 2010, with an additional 2% reduction commitment for Phase I members and a total of 6% reduction commitment by 2010 for new Members joining in Phase II.

⁹³ Each CFI represents 100 metric tonnes of CO₂ equivalent.

⁹⁴ Hight et al., *supra* note 1, 11.

⁹⁵ Offsets are issued to owners or aggregators of eligible offset projects that sequester, destroy or displace GHGs; they are issued after mitigation occurs and required verification documentation is presented to CCX. Eligible project categories for which CCX has developed standardised rules include agricultural methane, coal mine methane, landfill methane, agricultural soil carbon, rangeland soil carbon management, forestry, renewable energy and ozone depleting substance destruction. Other project types are subject to approval on a project-by-project basis, and may include energy efficiency and fuel switching and Clean Development Mechanism (CDM) eligible projects.

⁹⁶ Although CCX is not a regulated exchange, the Financial Industry Regulatory Authority (FINRA) independently verifies all baseline and annual emissions reports for Phase I and Phase II programme years for accuracy and completeness, and to ensure compliance with the CCX Emission Reduction Schedule. Moreover, it monitors CCX trading activity and reviews all verifier reports for offset projects.

⁹⁷ For the current membership list, see <<http://www.chicagoclimatex.com/content.jsf?id=64>>. In terms of absolute emissions, membership amounts to an aggregate baseline of 365 MtCO_{2eq}, or approximately 5% of US annual GHG emissions.

Between 2003 and 2006, a majority of CCX members met and exceeded their emissions reduction commitments: emissions from the group declined by 9% in 2003, 12.1% in 2004, 9.7% in 2005 and 5.9% in 2006, for a total emissions reduction of 128 Mt CO_{2eq}.

3 CASE STUDY: THE CLIMATE SECURITY ACT OF 2008

As mentioned earlier, the bill introduced by Senators Lieberman and Warner on 18 October 2007, although ultimately defeated on the Senate floor in a procedural motion, remains the standard of reference for federal cap-and-trade legislation as the only bill to be approved both by the relevant Subcommittee and the Committee on Environment and Public Works. While the design of future legislative proposals in the current 111th Congress remains unclear, it is likely that major structural elements of the defeated Climate Security Act of 2008 will be retained. For that reason, the following case study will address a number of features relevant for any prospective efforts to create a transatlantic trading link between federal climate legislation and the EU ETS, informing the subsequent section on compatibility of US initiatives. Particular attention is devoted to the contentious issue of border adjustment measures to offset competitive disadvantages. It merits noting that the assessment is based on the substitute amendment introduced on 4 June 2008 by Senator Boxer with Senators Lieberman and Warner.⁹⁸

3.1 Allocation Method

A central feature of any emissions trading scheme is the mechanism for distribution of allowances. On this issue, ACSA 2008 contains a separate title setting out a “Federal Program to Prevent Economic Hardship”.⁹⁹ It outlines a complex process to distribute allowances, with a decreasing share of free allocation in the form of “transition assistance” for specified sectors, and an increasing share of auctioning. Conditions for free allocation are outlined in great detail. Between 2012 and 2030, 18% of the allowance account or less are to be allocated free of cost to fossil-fuel powered electricity generators,¹⁰⁰ 11% or less to manufacturers,¹⁰¹ 2% or less to fuel producers or importers,¹⁰² and a specified share to rural electric cooperatives.¹⁰³ From 2012 to 2017, 5% of allowances are to be allocated for free to early actors, decreasing to 1% in 2018 through 2025.¹⁰⁴

⁹⁸ ACSA 2008, *supra* note 32.

⁹⁹ Sections 501 to 585 of ACSA 2008; this Title reflects extensive revisions from the earlier version of the bill.

¹⁰⁰ Sections 551 and 552 of ACSA 2008; from 2012 to 2030, the EPA is charged with distributing free allowances to owners and operators of fossil fuel-fired electricity generators. 18% of all allowances will be allocated from 2012 through 2015, declining to 2.75% of all allowances by 2030.

¹⁰¹ Sections 541 and 542 of ACSA 2008; ACSA 2008 directs the EPA to distribute allowances to carbon-intensive manufacturing facilities free of cost between 2012 and 2030. 11% of all allowances are earmarked for such allocation from 2012 through 2021, 10% in 2022, and declining by 1% each year thereafter until 2030, when the free allocation would represent 1% of all allowances. Eligible manufacturing facilities include iron, steel, pulp, paper, cement, rubber, chemicals, glass, ceramics, SF₆, or aluminium and other ferrous metals. No more than 10% of the allowances may be distributed in this way to US manufacturers of petroleum-based liquid or gaseous fuel.

¹⁰² Sections 561 to 572 of ACSA 2008; between 2012 and 2017, 2% of all allowances are to be distributed for free to owners and operators of petroleum-based fuel refineries, falling to 1% from 2018 through 2030; likewise, from 2012 to 2030, the EPA is mandated with distributing 0.75% of all allowances for free to owners and operators of natural gas processing plants, as well as natural gas producers in Alaska and the Outer Continental Shelf.

¹⁰³ Section 552(c) of ACSA 2008; the EPA can distribute up to 5% of the allowances available in this subtitle to rural electric cooperatives, 15% of which should be distributed as part of a pilot programme to Virginia and Montana to determine the benefits realized by rate-payers and the use of low GHG technologies.

¹⁰⁴ Section 702 of ACSA 2008.

Likewise, from 2012 to 2025, 3% of all allowances will be allocated to carbon capture and sequestration activities, dropping to 1% from 2031 to 2050.¹⁰⁵ Roughly 30.5% of allowances are to be set aside between 2012 and 2050 for other entities, including states, load-serving entities and others.

As for auctioning, starting in 2012, 21.5% of allowances are to be auctioned, increasing to 69.5% by 2031 and onward. Proceeds from these auctions should be used for energy technology development, assistance for low- and middle-income energy consumers, climate change adaptation efforts in the US and programs to support energy independence and national security. Procedurally, auctioning occurs through the Environmental Protection Agency (EPA), which applies different methodologies. ACSA 2008 establishes a minimum reserve price for allowances sold each year at the regular auctions. In 2012, the minimum reserve price is set at \$10, adjusted for the price of inflation between calendar years 2013 and 2027.¹⁰⁶

Auction revenues are earmarked for a number of purposes, including worker training and assistance and consumer relief. Specifically, ACSA 2008 establishes a Climate Change Worker Training and Assistance Fund, funded by the proceeds of the auction of 1% of all allowances from 2012-2017, 2% from 2018-2027, 3% from 2028-2030, 4% from 2031 to 2038, and holding at 3% from 2039 and each year thereafter through 2050. 30% of these funds would be used for energy efficiency and renewable energy worker training program, 60% for the climate change worker adjustment program, and 10% for workforce training and safety.¹⁰⁷ Also, ACSA 2008 establishes a Climate Change Consumer Assistance Fund (CCCAF) funded by auctioning 3.5% of all allowances in 2012, increasing to 15% in 2034 and each year thereafter through 2050. No disbursements from this fund would be made except by an appropriations act. The subtitle includes a Sense of the Senate statement that the CCCAF should be used to fund a tax initiative to protect consumers, especially consumers in greatest need, from increases in energy costs and other costs.¹⁰⁸

¹⁰⁵ Section 1011 of ACSA 2008.

¹⁰⁶ See Section 524 of ACSA 2008: "REGULAR AUCTION RESERVE PRICE.

(a) In General.--At any regular auction, there shall be a regular auction reserve price below which the Administrator shall not sell any emission allowance.

(b) Regular Auction Reserve Price in 2012.--At any regular auction that takes place during calendar year 2012, the regular auction reserve price per emission allowance shall be \$10.

(c) Regular Auction Reserve Price in Subsequent Years.--For each of calendar years 2013 through 2027, the regular auction reserve price at any regular auction that takes place during the calendar year shall be equal to the product obtained by multiplying--

(1) the regular auction reserve price that applied to each regular auction conducted during the preceding calendar year; and

(2) the sum of--

(A) the annual rate of United States dollar inflation for the calendar year (as measured by the Consumer Price Index); and

(B) 1.05."

¹⁰⁷ Sections 531 to 536 of ACSA 2008.

¹⁰⁸ Sections 581 to 585 of ACSA 2008.

3.2 Sectoral Arrangements

Coverage envisioned in ACSA 2008 is very comprehensive. As an economy-wide bill, it has been designed to cover the large coal consumers, natural gas and petroleum processors, producers and importers, and producers of HCFC refrigerants. In its introductory section, ACSA 2008 further specifies covered entities as:

- entities that use more than 5000 metric tonnes of coal annually in the US;
- natural gas processing plants (except in Alaska);
- entities that produce natural gas in Alaska;
- importers of natural gas;
- manufacturers or importers of petroleum-based liquid or gaseous fuel, petroleum coke, or coal-based liquid or gaseous fuel;
- entities that manufacture or import more than 10,000 metric tonnes of CO_{2eq} aside from HFCs; and
- entities that emit more than 10,000 metric tons CO_{2eq} of HFCs as a byproduct of the manufacture of HCFCs.¹⁰⁹

ACSA 2008 chooses a hybrid approach, with downstream regulation of electric utilities and large sources, and upstream regulation of transportation fuels. Accordingly, the latter are included by requiring any entity that has annual production or imports of petroleum- or coal-based transportation fuel in excess of 10,000 CO_{2eq} when used to submit allowances based on the carbon content of the fuel. Finally, with a view to emissions from sources other than fossil fuels, the bill also requires entities with an annual production or import of non-fuel chemicals resulting in emissions of more than 10,000 CO_{2eq} to participate. A separate trading system is established for HFCs.¹¹⁰

3.3 Cost Containment

The bill attempts to limit the possibility of runaway carbon prices through provisions on banking, borrowing, “emergency off-ramps”, and “cost containment options”. Banking is unrestricted, with no expiration of allowances. This is stated succinctly.¹¹¹ Borrowing may take place, through detailed rules to be developed later.¹¹² The limit is 15% of allowances needed for annual surrender, borrowed from a period no further in the future than 5 years hence. Repayment will be with interest of 10% per year.

A separate section deals with Emergency off-ramps.¹¹³ Pursuant to this section, the Carbon Market Efficiency Board (CMEB), also established by the legislation, will be allowed to enact certain measures “to ensure functioning, stable, and efficient markets for emission allowances”.

¹⁰⁹ Section 4 (16) of ACSA 2008.

¹¹⁰ Sections 1501 to 1503 of ACSA 2008.

¹¹¹ Title V.A of ACSA 2008.

¹¹² Title V.B of ACSA 2008.

¹¹³ Title V.C of ACSA 2008.

These include increasing:

- the amount of borrowing allowed;
- the repayment period of borrowed allowances;
- the amount of foreign allowances permitted;
- the amount offset allowances generated.

These are *not* to be done at entity-level, but are adjustments to the whole system, and there are restrictions on the scope of applicability noted.

Another measure foreseen is the auctioning of allowances reserved for the purpose of cost containment (“cost containment auctions”, as opposed to “regular auctions”). These are to take place every December, 2012 through 2027.¹¹⁴ The price is to be between \$22 and \$30 in the first auction, determined by the President based on a methodology noted in the bill, and subsequent auction prices will be increased above this by a factor of 1.05 plus the inflation rate every year.¹¹⁵ The source of allowances is a pool of 6 million allowances taken from the 2030 to 2050 allotment. Any allowances not sold at regular auction are added to the pool.¹¹⁶ Other provisions on quantity limits, use of proceeds and discontinuation pertain as well.

3.4 Offsets

Domestic offsets are limited to 15% of allowances.¹¹⁷ International offsets, additional to those allowed under the sections on that issue (see below), will be allowed when domestic offsets are less than 15% of allowances, so that domestic and additional international allowances summed together may not exceed 15%.

These offset credits may be carried over into a subsequent year, but only by the amount between 15% and the amount below this that was actually retired – e.g. if 14% of allowances retired in one year were offsets, then 1% may be carried over into the subsequent year; if 13% were offsets, 2% may be carried over, etc. This prevents large numbers of offsets from being generated, in excess of the 15% limit, and rolled over into a subsequent year. Under the permitted system, offsets in the subsequent year will be allowed to exceed the 15% limit by the amount rolled over.¹¹⁸ There is also a linkage with RGGI offsets, which can be traded in at a discount to be determined by the administrator.

Offset rules established through the bill are meant to “ensure that those offsets represent real, verifiable, additional, permanent, and enforceable reductions in GHG emissions or increases in sequestration”.¹¹⁹ For biological sequestration projects, any reversal of sequestration has to be compensated.

Sections 313 – 320 establish the rules of the domestic offset programme. These are summarized as follows:

¹¹⁴ Section 532 of ACSA 2008.

¹¹⁵ Section 533 of ACSA 2008.

¹¹⁶ Section 535 of ACSA 2008.

¹¹⁷ Section 312 of ACSA 2008.

¹¹⁸ Section 312.3 of ACSA 2008.

¹¹⁹ Section 312.C.2 of ACSA 2008.

Eligible project types: these are to be revised “from time to time”:

- agricultural and rangeland sequestration and management practices, of which several are listed;
- capture and reduction of fugitive emissions from facilities not covered by reduction obligations already;
- methane capture and combustion at non-agricultural facilities;
- “other actions” that avoid or reduce emissions;
- combinations of practices; and
- those submitted by petition for approval.

This list, while seemingly specifying project types, is nearly all-inclusive, given the options for “other actions” and ad-hoc approvals.

Requirements of each project type: within three years the administrator is to develop rules for each category which “specify requirements for determining the eligibility of a project, for determining additional emission reductions or sequestrations from such project, for preventing emissions leakage associated with such project, for preventing the reversal of sequestrations from such project, and for monitoring, verifying, and reporting the operation of such project”.

The rules are meant to achieve the following:

- avoid double counting or crediting government-subsidised projects;
- determine the boundaries and leakage;
- establish scientifically sound monitoring, measuring and quantification;
- establish the baseline;
- determine uncertainties;
- determine that the project is additional;
- a method to compensate for leakage;
- assessing the risk of reversal;
- a means of excluding land with changes in sequestration within the previous 10 years; and
- an annual reporting protocol.

Technologies and associated performance benchmarks can also be established, valid for five years. Each methodology will be tested to ensure consistent results before it is approved. There is some further detail on how to establish the methodologies noted procedures for project developers and registration of reductions, verification and issuance, and tracking of reversals in sequestration projects, among other details.

The rules for international project offsets and international allowances are covered in sections 321 and 322. International project offsets are to be limited in quantity to 5% of allowances. If less than 5% the gap can be made up with international allowances (credits from other trading systems). International allowances are capped at 5% minus the amount of domestic offset allowances distributed in a year¹²⁰.

A similar carry-over provision to the one in the domestic offset section is outlined here: the difference between any retired in one year and the 5% cap may be carried over. Section 322 permits linking to international trading systems, provided they adhere to rules in accordance with the UNFCCC. The programme to be linked to should be mandatory and have absolute emissions limits, as well as being similar in stringency to the system in the US.

In addition, offsets from forestry projects up to 10% of allowances are allowed in a separate section (1325), under title IX subtitle B, addressing international deforestation and forest degradation.

3.5 Technology and Research & Development

Aside from transitional support offered to fossil fuel power plants and carbon intensive industries, specific technologies are also singled out for extra funding to develop improved technologies and practices. The agriculture and forestry program in section 332 rewards innovative and additional reductions to those in the agriculture and forestry sector through distribution of allowances held back for that purpose – equivalent to 0.25% of allowances per year. These are not to be distributed to projects already earning offset credit.

Title VIII describes support to energy efficiency. Allowances will be set aside for this purpose, an amount to be determined by the new Climate Change Technology Board. Entities that achieve reductions through innovative practice will receive allowances, divided into categories: buildings, appliances, and manufacturing.

Renewable energy support will receive 4% of allowances per year from 2012 to 2030, and 1% from 2031 to 2050. They are to be distributed to owners, operators and developers of facilities that include:

- solar;
- wind;
- geothermal;
- incremental hydropower;
- biomass;
- ocean waves;
- landfill gas;
- livestock methane; and
- fuel cells powered with a renewable energy source.

¹²⁰ Note that this unusual succession of caps seems incorrect, as it refers to “domestic allowances...pursuant to this section”, while the section is on international offsets, and domestic allowances are permitted up to 15%, not 5%, so this could be either an error or a logical leap that is simply hard to follow.

Low-carbon electricity and advanced research is addressed in Title IX. 1.75% of allowances will be devoted to a low-carbon electricity fund, between 2012 and 2021, 2% between 2022 and 2030, and 1% between 2031 and 2050. The climate change technology board has use of the funds to provide competitive financial incentives.

A Carbon capture and sequestration technology fund, designed to “kick-start” the technology, is designated as the recipient of 1% of allowances through 2050, with the Climate Change Technology Board deciding how it is used. In addition, CCS plants actually deployed will receive “bonus” allowances equal to several multiples of their avoided emissions – starting at double the rate in 2012, declining to parity in 2025, then to 0.5 from 2031 to 2039. The allowances reserved for this purpose start at 3% in 2012, rising to 4% from 2026 to 2030, then down to 1% from 2031 to 2050. This form of subsidy is available to a facility for up to 10 years. The bill mandates further definition of a legal framework, an assessment of storage capacity and the feasibility of needed pipelines, as well as rules on liability.

In transport technology, 0.5% of allowances are dedicated to commercialisation and diffusion of fuel-efficient medium and heavy trucks, buses and vans. 1% of allowances will fund the Climate Change Transportation technology fund, which will support a program developed in a previous energy bill (the Energy Independence and Security Act of 2007). 1% of allowances will support cellulosic biofuels development and diffusion.

Although not supported by auction revenue, the new low-carbon fuel standard in subtitle D supports renewable transport fuels by mandating reductions in the GHG emissions per unit of energy.

3.6 Oversight and Enforcement

Under ACSA 2008, the non-compliance penalty for failure to submit one or more allowances is equal to the greater of \$200 or 3 times the market value of allowances for each allowance not submitted. In addition, operators need to submit the missing allowances in the following calendar year. As regards market oversight, ACSA 2008 establishes a Carbon Market Working Group to “enhance the integrity, efficiency, orderliness, fairness, and competitiveness of the development by the United States of a new financial market for emission allowances”.¹²¹ This Working Group is to be chaired by the Administrator of the EPA and include the Secretary of the Treasury, the Chairman of the SEC, the Chairman of the Commodity Futures Trading Commission, the FERC Chairman, and other officials appointed by the President.

This working group will have the power to issue recommendations and promulgate regulations to enhance the integrity, efficiency, orderliness, fairness, and competitiveness of the development of the emissions trading market, based on core principles which include: preventing the concentration of market power within the control of a limited number of individuals or entities; preventing abuse of material, non-public information; providing for transparency; and preventing excessive speculation that could cause sudden or unreasonable fluctuations or unwarranted changes in the price of emission allowances.¹²² Additionally, the CMEB mentioned earlier¹²³ can provide general market monitoring and reporting to Congress.

¹²¹ See Section 411 of ACSA 2008: “FINDING

Congress finds that it is necessary to establish an interagency working group to enhance the integrity, efficiency, orderliness, fairness, and competitiveness of the development by the United States of a new financial market for emission allowances, including by ensuring that—

(1) the market--

(A) is designed to prevent fraud and manipulation, which could potentially arise from many sources, including--

(i) the concentration of market power within the control of a limited number of individuals or entities; and

(ii) the abuse of material, nonpublic information; and

(B)(i) is appropriately transparent, with real-time reporting of quotes and trades;

(ii) makes information on price, volume, and supply, and other important statistical information, available to the public on fair, reasonable, and non-discriminatory terms;

(iii) is subject to appropriate recordkeeping and reporting requirements regarding transactions; and

(iv) has the confidence of investors;

(2) the market--

(A) functions smoothly and efficiently, generating prices that accurately reflect supply and demand for emission allowances; and

(B) promotes just and equitable principles of trade;

(3) the need of market participants and regulators for transparency is balanced against legitimate business concerns regarding the release of confidential, proprietary information;

(4) the market is subject to effective and comprehensive oversight and integrates strong enforcement mechanisms, including mechanisms for cooperation with other national and international oversight regimes;

(5) an appropriate interagency forum exists--

(A) for ongoing assessment of emerging regulatory matters and information-sharing; and

(B) to ensure regulatory coordination of the market;

(6) the market establishes an equitable system for best execution of customer orders; and

(7) the market protects investors and the public interest.”

¹²² Section 412 of ACSA 2008.

¹²³ See above, Section 3.3.

3.7 Border Adjustment Measures

Following proposals by industry and labour unions, the use of offsetting measures at the border (border adjustment measures, or BAMs) has received a great deal of attention in policy and academic circles, with various bills including such provisions.¹²⁴ Border adjustment measures in ACSA 2008 are included in a section that has as its goals, *inter alia*, to promote “a strong global effort to significantly reduce greenhouse gas emissions” and to ensure “that greenhouse gas emissions occurring outside the United States do not undermine the objectives of the United States in addressing global climate change”.¹²⁵ The section establishes an international reserve allowance program, which requires US importers of covered goods from covered countries to purchase international reserve allowances from the Administrator of the EPA.¹²⁶ A separate reserve is created for the allowances that need to be purchased.¹²⁷

In order for goods to enter into the country, US importers are required to provide a written declaration, which includes a “compliance statement”, stating that the good is covered by the international reserve allowance requirement or that the good originates from an exempted country.¹²⁸ If the latter proves impossible, the importer is required to state in which countries components of the good were produced, to provide an estimate of the required allowances, and to submit this number of allowances or a financial deposit to cover their purchase.¹²⁹ The price of the international reserve allowance is determined through the price of domestic emission allowances.¹³⁰ Within 180 days, the Administrator is obliged to assess how much allowances were in fact required; excess allowances or deposits are refunded, while in case of insufficient allowances the importer is required to submit further allowances.¹³¹ The bill thus presents an administrative burden to foreign producers, requiring them to track the carbon embedded in the goods transported to the US.

It is possible for an importer to submit a “foreign allowance or similar compliance instrument” distributed by a foreign cap-and-trade scheme instead of an international reserve allowance.¹³² In order to qualify, cap-and-trade schemes 1) need to place a quantitative limitation on the total GHG emissions and achieve that limitation through emissions trading; 2) satisfy any requirements the Administrator may set for the enforceability of the cap-and-trade program; and 3) amount to a “comparable action”.¹³³ Although the last two requirements can only be met once the US scheme is in place, the allowances distributed by the EU ETS are an obvious candidate for this provision.

¹²⁴ See below, Section 5.1.3.

¹²⁵ Section 1302 of ACSA 2008.

¹²⁶ Section 1306 (a) (1) of ACSA 2008.

¹²⁷ Section 1306 (a) (2) of ACSA 2008.

¹²⁸ Section 1306 (c) (1-2) of ACSA 2008.

¹²⁹ Section 1306 (c) (3) of ACSA 2008.

¹³⁰ Section 1306 (a) (4) of ACSA 2008.

¹³¹ Section 1306 (c) (4) of ACSA 2008.

¹³² Section 1306 (e) (1) (A) of ACSA 2008.

¹³³ Section 1306 (e) (1) (B) of ACSA 2008.

Interestingly, the proceeds of the sale of allowances are to be used for a program “to mitigate negative impacts of climate change on disadvantaged communities in foreign countries.”¹³⁴ However, the bill does not clarify which countries would benefit from such a program, and whether these countries would include the countries covered by the international reserve allowance program.

3.7.1 Country Coverage

The requirement for US importers to surrender allowances applies only to countries that have not taken “comparable action”, and that are not exempted. Altogether, these countries are identified in an “excluded list”.¹³⁵ Countries not on this list are covered by the program.¹³⁶

According to the bill, “comparable action” refers to “any greenhouse gas regulatory programs, requirements, and other measures adopted by a foreign country [in a particular calendar year] that, in combination, are comparable in effect to actions carried out by the United States through Federal, State, and local measures to limit greenhouse gas emissions”.¹³⁷ The determination of whether a country has undertaken comparable action is delegated to an International Climate Change Commission (ICCC).¹³⁸ First, the ICCC needs to decide whether the foreign country has taken action that the emission reductions or limitations (percentage wise) in a given period are the same or greater than the emission changes in the US.¹³⁹ Second, if the ICCC finds that a country has not taken comparable action on this basis, it still needs to consider whether that country has implemented, verified, and enforced 1) “[t]he deployment and use of state-of-the-art technologies in industrial processes, equipment manufacturing facilities, power generation and other energy facilities, and consumer goods ... , and implementation of other techniques or actions, that have the effect of limiting greenhouse gas emissions of the foreign country;” and 2) “[a]ny regulatory programs, requirements, and other measures ... to limit greenhouse gas emissions.”¹⁴⁰

A couple of remarks are in place. First, the initial determination of whether a country has taken comparable action effectively would require any foreign country to adopt the same kind of GHG emission caps as the US. Second, however, the second paragraph moderates this provision by providing an “escape clause” for those countries that did not reduce or limit their emissions to the same extent, but still have policies and/or legislation in place that limit GHG emissions. The text in the clause covers a broad range of activities that could be implemented in a foreign country. However, even if these policies are in place, it does not mean that the ICCC would decide that a country is taking comparable action: it merely needs to consider them in deciding upon that. Third, the bill does not require a foreign country to adopt the same kind of policies as the US, as long as the results over a given period are similar. However, it is unclear how the policies with quantified emission reduction objectives could be compared to other policies of a more qualitative nature.¹⁴¹

¹³⁴ Section 1306 (a) (8) of ACSA 2008.

¹³⁵ Section 1306 (b) (2) (A) of ACSA 2008.

¹³⁶ Section 1306 (b) (3) (A) of ACSA 2008.

¹³⁷ Section 1301 (4) (A) of ACSA 2008.

¹³⁸ Section 1305 (a) of ACSA 2008.

¹³⁹ Section 1301 (4) (B) (i) of ACSA 2008.

¹⁴⁰ Section 1301 (4) (B) (ii) of ACSA 2008.

¹⁴¹ Ibid.

Fourth, in determining “comparable action”, the Commission is instructed to take into account “net transfers to and from the United States and the other foreign country of greenhouse gas allowances and other emission credits.”¹⁴² This would mean, for example, that if participants in the US trading scheme use credits from accepted offset projects in China for compliance purposes, this would be accounted for. Fifth, the ICCC needs to ensure that the determination of comparable action complies with “applicable international agreements,” which include notably the UNFCCC and the WTO agreements.¹⁴³ Sixth, the provision is not entirely clear whether comparability is about the *intended* effects (i.e. stated emission reduction objectives) or the *real* effect of measures (i.e. actual emission reductions achieved) adopted in both the United States and in foreign countries. Related to this, it is unclear how the program could account for policies aimed at long-term emission reductions, such as policies aimed at technological innovation.¹⁴⁴

The bill provides for a few more exemptions. First, the poorest (least-developed) countries are exempted from the provision.¹⁴⁵ Second, countries with low emissions (0.5% of global GHG emissions or less) are also excluded.¹⁴⁶ The rationale of these exemptions seems straightforward: the first can be seen as a solidarity exemption, whereas the second exemption can be justified in terms of effectiveness of the allowance requirement provision.

3.7.2 Coverage of Goods

The goods covered by the bill are determined by the Administration. They include primary products or manufactured items for consumption, which generate a “substantial quantity of direct greenhouse gas emissions or indirect greenhouse gas emissions,”¹⁴⁷ and which are “closely related to a good the cost of production of which in the United States is affected” by the Act.¹⁴⁸ Primary products include, *inter alia*, iron and steel, aluminium, cement, glass, pulp, paper, chemicals, and industrial ceramics.¹⁴⁹ Manufactured items for consumption are to be determined by the ICCC, on the basis of administrative feasibility and necessity to achieve the objectives.¹⁵⁰ It may thus be possible to include finished goods, such as automobiles and appliances, although the inclusion of such goods will likely pose huge administrative challenges given the possible different countries of origin of the various components of the finished good.¹⁵¹ Furthermore, broadening the scope of the program could also make it easier to obscure the origin of the good.¹⁵²

¹⁴² Section 1301 (4) (B) (iii) of ACSA 2008.

¹⁴³ Section 1301 (4) (B) (iv) of ACSA 2008.

¹⁴⁴ See Trevor Houser et al., *Leveling the Carbon Playing Field: International Competition and US Climate Policy Design* (Washington, D.C.: Peterson Institute for International Economics/World Resources Institute, 2008), 39.

¹⁴⁵ Section 1306 (b) (2) (A) (ii) of ACSA 2008.

¹⁴⁶ Section 1306 (b) (2) (A) (iii) of ACSA 2008.

¹⁴⁷ Indirect emissions refer to the emissions stemming from electricity consumption during the manufacturing of a good. Section 1301 (10) of ACSA 2008.

¹⁴⁸ Section 1301 (7) of ACSA 2008.

¹⁴⁹ Section 1301 (15) (A) of ACSA 2008.

¹⁵⁰ Section 1301 (13) (C) of ACSA 2008.

¹⁵¹ Peter R. Orszag, *Issues in Designing a Cap-and-Trade Program for Carbon Dioxide Emissions*, Testimony before the Ways and Means Committee, US House of Representatives (18 September 2008), 18.

¹⁵² *Ibid.*

