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Linking the EU Emissions Trading System to a Future US Emissions Trading Scheme

Briefing

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2009

Linking the EU Emissions Trading System to a Future US Emissions Trading Scheme

EUROPEAN PARLIAMENT

DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICIES

ENVIRONMENT, PUBLIC HEALTH AND FOOD SAFETY

Update of the study 'Linking the EU Emissions Trading System to a Future US ETS'

Briefing

Abstract

As the world's largest economy, United States is also the largest consumer of fossil energy sources and the largest per capita emitter of greenhouse gases. A newly appointed administration and changed majorities in Congress have created more favourable conditions for federal climate action. As in the European Union, emission trading is a central feature in legislation currently before the US Congress, and has already been implemented at the regional level through the Regional Greenhouse Gas Initiative (RGGI).

Emergence of such trading systems in the US offers the opportunity of a future trading link to the EU Emissions Trading Scheme (EU ETS), which in turn would promise greater diversity of abatement options, improved market size and liquidity, and ultimately a more efficient allocation of resources. Subject to further conditions, existing and proposed trading systems in the US already provide for the unilateral recognition of foreign allowances, including EU ETS allowances (EUAs). Yet a full bilateral trading link allowing open market flows across the Atlantic raises additional challenges. Research has shown that differences in certain design features of ET systems can undermine the benefits of a potential market link.

The Waxman-Markey bill shows that few aspects of the trading system outlined in this bill would prompt incompatibility with the EU ETS. In the near term, mitigation targets are significantly weaker than those adopted in Europe, suggesting that carbon prices will initially differ across the Atlantic; yet reduction objectives become more stringent over time, improving the prospects for a functional market link.

Monitoring and enforcement structures appear sufficiently effective to afford the necessary confidence in a functioning market. More problematic are generous provisions on the eligibility of domestic and international offsets, and a low trigger price for auctions from a strategic reserve that would increase supply in the market. A US dominant climate concern has centred on the international competitiveness of its domestic industry. A transatlantic market link may be an ambitious challenge.

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EXECUTIVE SUMMARY

As the world's largest economy, the United States is also the largest consumer of fossil energy sources and the largest per capita emitter of greenhouse gases. Although the climate and energy policies adopted over the past decade have been insufficient to reverse continued emissions growth, a number of recent developments may cause this situation to change. A newly appointed administration and changed majorities in Congress have created more favourable conditions for federal climate action, while the regional, state and local levels continue to see numerous initiatives to mitigate global warming. As in the European Union, emissions trading – the creation of a market for greenhouse gas emission allowances – is a central feature in legislation currently before the US Congress, and has already been implemented at the regional level through the Regional Greenhouse Gas Initiative (RGGI).

Emergence of such trading systems in the US offers the opportunity of a future trading link to the European Union emissions trading scheme (EU ETS), which in turn would promise greater diversity of abatement options, improved market size and liquidity, and ultimately a more efficient allocation of resources. Subject to further conditions, existing and proposed trading systems in the US already provide for the unilateral recognition of foreign allowances, including EU ETS allowances (EUAs). Yet a full bilateral trading link allowing open market flows across the Atlantic raises additional challenges. Research has shown that differences in certain design features of emissions trading systems can undermine the benefits of a potential market link.

Relevant design features include the stringency and nature of emission reduction targets, cost containment provisions, rules on domestic and international offsets, and provisions on market oversight and enforcement. Drawing on the most advanced legislation to date, the Waxman-Markey bill adopted by House of Representatives in June 2009, an analysis shows that few aspects of the trading system outlined in this bill would prompt incompatibility with the EU ETS. In the near term, mitigation targets are significantly weaker than those adopted in Europe, suggesting that carbon prices will initially differ across the Atlantic; yet reduction objectives become more stringent over time, improving the prospects for a functional market link. Monitoring and enforcement structures appear sufficiently effective to afford the necessary confidence in a functioning market. More problematic are generous provisions on the eligibility of domestic and international offsets, and a low trigger price for auctions from a strategic reserve that would increase supply in the market.

A dominant concern in the US climate debate has centred on the international competitiveness of its domestic industry. As a result, any climate legislation adopted at the federal level is highly likely to include far-reaching measures to offset any competitive disadvantages arising from greenhouse gas regulation. While such measures – notably output-based rebates for domestic industries and border adjustments on foreign imports – do not preclude a transatlantic market link, they reflect far-reaching preoccupation with the cost of climate policy. Given the current political debate, this sensitivity to the economic impacts of greenhouse gas mitigation efforts is also likely to weaken the outcome of the current legislative process. A transatlantic market link may therefore be an ambitious challenge in the near term.

1. CLIMATE CHANGE AND THE UNITED STATES

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 also 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 developments have the potential to affect 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 now 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. Unlike the European Union, where climate policy has found entrance into the political agenda of all major parties, global warming remains a distinctly partisan issue in the US. Regional differences between the Midwest and the coastal states reverberate at the federal level, and powerful interest groups continue to portray emission reductions as costly and economically harmful.[8] With public concern focused on the ongoing economic crisis and a divisive health care debate, support for GHG mitigation action remains volatile. Still, a fundamental shift has nonetheless marked the political debate, with decision makers no longer questioning the existence of climate change and instead focusing on the adequacy of different policy responses.

In more progressive regions, states and cities, this shift has already given rise to a diverse array of mitigation actions. Among these is the Regional Greenhouse Gas Initiative (RGGI), a cooperative effort between ten states in the Northeast and mid-Atlantic to implement an emissions trading system for CO_2 emissions from the electricity sector.

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[1] Cate Hight and Gustavo Silva-Chávez, *Change is in the Air: The Foundations of the Coming American Carbon Market Climate Report Nº 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, D.C.: 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.

Emission permit auctioning began in September 2008, and the first three-year compliance period began on 1 January 2009. Similar programs are evolving in the West with the Western Climate Initiative (WCI) and in the Midwest with the Midwestern Greenhouse Gas Accord (MGGA) launched at the Midwestern Governors Association Energy Security and Climate Change. At the level of individual states, California stands out with its adoption of the ambitious Global Warming Solutions Act in 2006. Even cities have shown remarkable initiative by spearheading a Climate Protection Agreement through the US Conference of Mayors, thereby committing participating cities to the reduction objective agreed to for the US under the Kyoto Protocol.

At the federal level, the victory of Barack H. Obama in the presidential election on 4 November 2008 heralded a major shift in the climate and energy policies of the US administration. During the campaign, Senator Obama had already outlined a comprehensive "New Energy for America" plan he would implement if elected to the presidency, setting out the cornerstones of a sweeping energy reform aimed at creating new employment, reducing dependence on foreign energy imports, and limiting GHG emissions. With the adoption of the "American Recovery and Reinvestment Act" on 17 February 2009, the newly elected President successfully sponsored an unprecedented economic stimulus plan mandating new investments and tax credits exceeding US$ 65 billion in the energy sector alone. Moreover, in the absence of Congressional action, he has since ordered the Environmental Protection Agency (EPA) to regulate carbon dioxide and other greenhouse gases under the existing Clean Air Act as mandated by the US Supreme Court in 2007.[9]

Rules adopted under this mandate have the potential to impose new limits on greenhouse gases from industry, the manufacturing sector and vehicles starting at 2010. In May 2009, the administration announced a plan to integrate federal fuel economy standards under the Energy Policy and Conservation Act, called CAFE standards, with federal vehicle emissions standards under the Clean Air Act, increasing these to an average of 35.5 miles per gallon by 2016. Overall, this would translate into an emissions limit of 250 g of CO_2 per mile (155 g per km) by 2016.[10] Finalisation of this rule is anticipated by March 2010, and application would begin on 1 October 2012. In April 2009, moreover, the EPA proposed an "endangerment finding" under Section 202 of the Clean Air Act concluding that anthropogenic climate change threatens the environment and public health;[11] it is expected to finalize the endangerment finding in upcoming months, paving the way for the foregoing CAFE emissions standards and also other regulations limiting greenhouse emissions at new and many existing industrial sources. And finally, a rule on "Mandatory Reporting of Greenhouse Gases" issued on 22 September 2009 will require approximately 13,000 US facilities to report greenhouse gases in combustion or process emissions exceeding 25,000 tons annually.[12] The rule covers emissions starting 1 January 2010, and requires certification of the emissions inventory and penalties for failing to report. With these various measures, the administration is signalling its intention to move quickly to regulate larger emissions sources unless Congress intervenes with sufficiently ambitious legislation.

[9] *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497 (2007).

[10] Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards (15 September 2009).

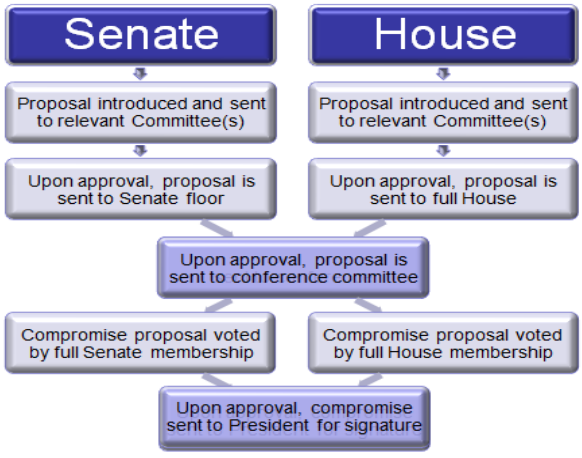
[11] Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Proposed Rule, 74 Fed. Reg. 18,886 (24 April 2009) (proposed rule).

[12] Mandatory Reporting of Greenhouse Gases: Final Rule, __ Fed. Reg. __ (issued 22 September 2009) (final rule); Mandatory Reporting of Greenhouse Gases: Proposed Rule, 74 Fed. Reg. 16,448 (10 April 2009) (proposed rule).

Prospects for Congressional legislation have also improved with the latest elections, although significant challenges remain. In the current 111th Congress, the Democratic party – which has traditionally been more likely to favour ambitious GHG regulation – has been able to expand its majority in both houses;[13] it also chairs all relevant committees with jurisdiction over GHG regulation. After the previous legislative period had already witnessed a substantial increase in climate policy activity, the House of Representatives set a new milestone on 26 June 2009 with the adoption of the "Clean Energy and Security Act of 2009 (ACES)" by a narrow margin of 219 to 212 votes.[14] Also known as the Waxman-Markey Bill after its authors, Representatives Henry A. Waxman of California and Edward J. Markey of Massachusetts, this bill places limits on greenhouse gas emissions from a large section of the US economy, and creates renewable electricity and energy efficiency standards. Specifically, it requires electric utilities to meet 20% of their electricity demand through renewable energy sources and energy efficiency by 2020, establishes energy-saving standards for new buildings and appliances, and mandates CO_2 emission reductions from major domestic sources by 17% by 2020, 42% by 2030, and 83% by 2050 over 2005 levels. An economy-wide emissions trading system is established to help achieve these objectives at least cost.

Following passage in the House, a counterpart bill now needs to be adopted by the US Senate before both versions can be reconciled in a Conference Committee (see fig 1). In contrast to the House of Representatives, where the Committee on Energy and Commerce held sole responsibility for initiating climate legislation, jurisdiction in the Senate is divided across a number of committees. Following initial delays, a legislative draft for the central part of the Senate climate bill was introduced by Senators Barbara L. Boxer and John F. Kerry on 30 September 2009. Titled the "Clean Energy Jobs & American Power Act", this bill largely retains the features set out in the House bill, although it calls for a slightly more ambitious 20% emission reduction by 2020 over 2005 levels. Important and politically sensitive aspects – such as the details of allowance allocation to covered facilities – have been left unspecified in this initial draft and deferred to a Committee mark-up later in October. With policy makers currently focused on the debate over health care reform, however, and ongoing concern about the costs of climate policy and its potential impacts on the competitiveness of domestic industry, the likelihood of a bill passing the full Senate before the end of the year remains low.

Figure 1: The Federal Legislative Process



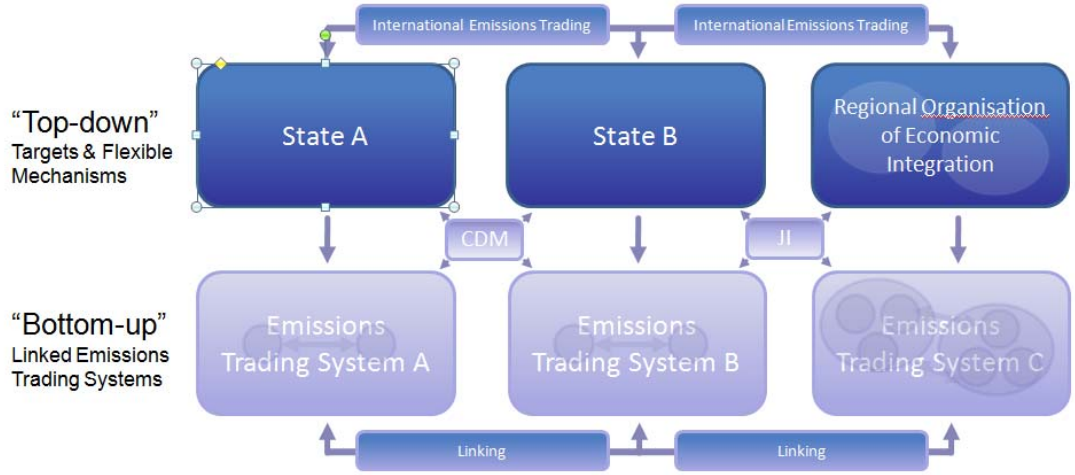
[13] As of 24 September 2009, the party distribution in the 111th Congress was as follows: Democratic majorities of 58 to 40 in the Senate (with two independent Senators), and 256 to 177 voting members (with two vacancies) in the House of Representatives. Despite substantial Democratic majorities in 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).

[14] American Clean Energy and Security Act of 2009, A bill to create clean energy jobs, achieve energy independence, reduce global warming pollution and transition to a clean energy economy, 111th Congress, 1st Session, H.R. 2454, 26 June 2009, available on the Internet at <energycommerce.house.gov/Press_111/20090701/hr2454_house.pdf>.

2. LINKING CARBON MARKETS ACROSS THE ATLANTIC

Given the successful launch of a regional trading system in the Northeast US and the prospect for a federal trading system in the future, new interest has been generated around the notion of a transatlantic trading link to the 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,[15] linking promises greater diversity of abatement options, improved market size and liquidity, and ultimately a more efficient allocation of resources.[16] In a global carbon market evolving on two overlapping levels (fig. 2), with quantified mitigation commitments agreed multilaterally through an international treaty ("top-down") and emissions trading systems deployed domestically facilitating bi- and multilateral trading links ("bottom-up"), the cost of emissions reductions could be lowered by up to 70%.[17]

Figure 2: A Dual-layer Approach to the Global Carbon Market



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";[18] 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".[19] On 28 January 2009, moreover, the European Commission announced that "[d]omestic carbon markets can and should be linked to build … a robust OECD-wide carbon market by 2015, to be further extended to economically more advanced developing countries by 2020."[20]

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[15] 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.

[16] 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."

[17] Mark Lazarowicz, *Global Carbon Trading: A Framework for Reducing Emissions* (London: DECC/OCC, 2009), 6.

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

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

[20] European Commission, *Towards a Comprehensive Climate Change Agreement in Copenhagen*, COM(2009)39 final of 28 January 2009, 11.

And the revised EU ETS Directive contains an explicit mandate to link to "compatible mandatory greenhouse gas emissions trading systems with absolute emissions caps established in any other country or in sub-federal or regional entities."[21]

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."[22] Moving one step further, several schemes currently under consideration or already in force allow for introduction of allowances from other emissions trading schemes,[23] including the EU ETS.[24] 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,[25] 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".[26]

Reflecting the high level of interest in stronger integration through bilateral or multilateral 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".[27] 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.[28]

[21] Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, Art. 25 (1a).

[22] 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.

[23] 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).

[24] 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.

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

[26] Anon., "California-U.K. Emissions Deal Bypasses Bush", San Francisco Chronicle, 1 August 2006, at A1.

[27] 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.

[28] 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.

3. LINKING TO A FEDERAL CLIMATE BILL: KEY ISSUES

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;[29] technical solutions may help overcome such divergences, but tend to lessen the benefits of linking or affect the environmental integrity of underlying markets. While not all characteristics of each trading scheme need to be identical or even similar to facilitate a link, certain differences can become serious obstacles. Price containment measures, such as price caps and unconstrained borrowing, as well as relative commitments and ex-post adjustments of allowances are arguably the most challenging to overcome, as they can compromise the environmental integrity of the trading system in its entirety and cause negative economic or distributional impacts.[30] Other critical issues include the relative stringency of provisions on monitoring, reporting, verification and enforcement, and the eligibility of offset credits that may be used for compliance within the trading system.

Needless to say, understanding the differences between trading schemes and their potential incompatibility is of vital importance when assessing the feasibility of a transatlantic trading link. In bills previously introduced into the US legislative process, many of these features differed significantly from the trading system currently operating in Europe. Markedly less ambitious mitigation objectives in the near term and various measures to intervene against unexpected price developments would have rendered a transatlantic link unlikely. In the case of the recently adopted Waxman-Markey bill, however, this assessment has changed in a number of ways. Most importantly, the Waxman-Markey bill sets out absolute GHG reduction targets that are manifestly more stringent than those in earlier bills, although they are measured against emission levels in 2005 as the base year (see figure 3) and are hence weaker in the near term than the reduction goals entered by the European Union.

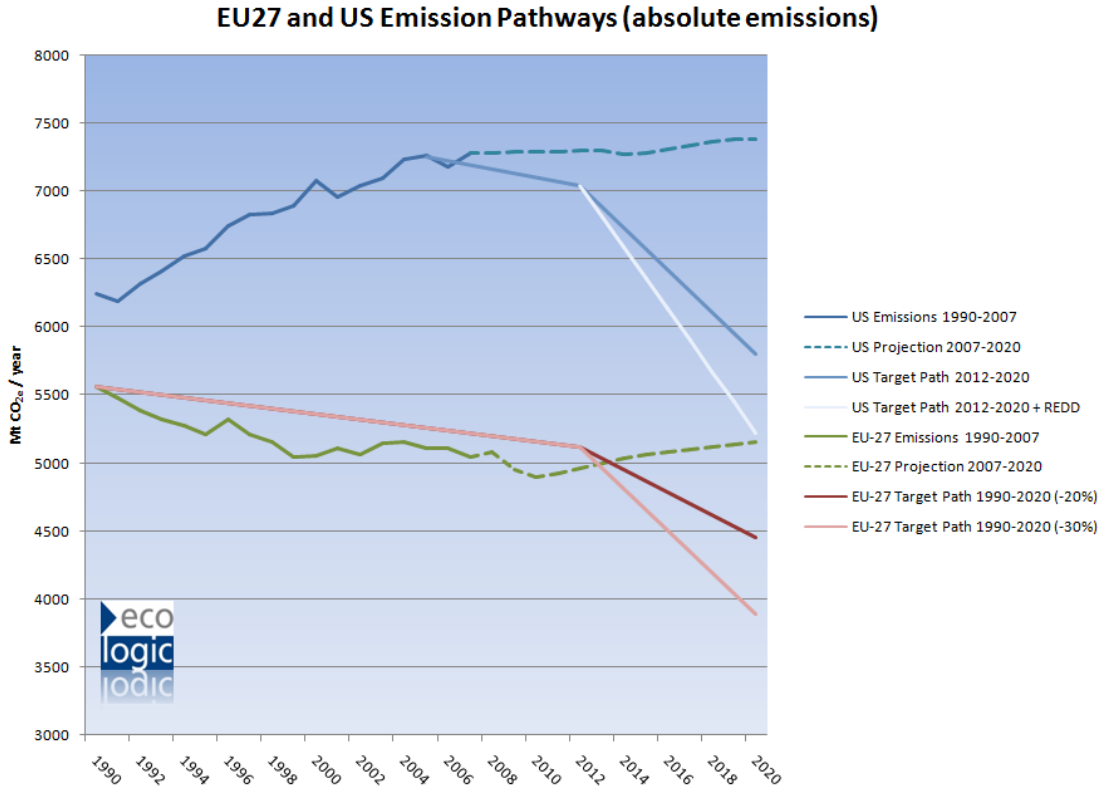
Unlike some of its predecessors, moreover, the Waxman-Markey bill imposes no price ceiling, nor does it foresee an increased allowance supply through extensive borrowing from future trading periods. Instead, the bill creates a strategic reserve of allowances that are available for auction if allowance prices exceed 160% of their three-year average, a feature unlikely to find application except in the event of a sudden and dramatic price increase. While this could theoretically increase the supply of allowances and temporarily affect price developments in the market, it would not have the effect of a “contagious” price ceiling that would categorically limit prices in linked trading systems.

Certain differences remain in the types of eligible offsets, with the Waxman-Markey bill setting out more generous provisions on the recognition of credits from land-use and forestry projects as well as reduced deforestation; yet here, as well, strict quality requirements and defined – albeit generous – quantitative restrictions may serve to compensate the differences and sustain compatibility between systems.

[29] See, for instance, Andreas Tuerk, Michael Mehling, Christian Flachsland, and Wolfgang Sterk, “Linking Carbon Markets: Concepts, Case Studies and Pathways”, 9 *Climate Policy* (2009), 341-357.

[30] M.J. Mace et al., *Analysis of Legal and Organisational Issues Arising in Linking the EU Emissions Trading Scheme to other Existing and Emerging Emissions Trading Schemes. Study Commissioned by the European Commission, DG Environment, Climate Change and Air* (London: FIELD et al., 2008), available at <http://www.field.org.uk/files/Linking%20emission%20trading%20schemes_0.pdf>, 51.

Figure 3: EU-27 and US emission pathways



Rules on governance and oversight suggest high market integrity and adequate enforcement of compliance obligations, raising few concerns that the US market might be insufficiently robust in terms of monitoring, reporting and verification. With no outright "deal-breakers" in the current Waxman-Markey bill, determining whether the foregoing differences are pronounced enough to preclude a future transatlantic market link remains an essentially political question.

4. CONCLUSIONS

Linking of emissions trading schemes has been described as the "the *de jure* or *de facto* post-2012 international architecture" for climate mitigation.[31] And indeed, with negotiations on a global climate regime perpetually threatened by diplomatic stalemate, linking provides an optional "fallback in case of multilateral collapse"[32] driving a bottom-up process in which "various domestic emissions trading schemes ... transform themselves into a global emissions market in a progressive and organic manner".[33] Whether a mere complement to international trading or the foundation of a global carbon market, therefore, linking is certain to play a part in the future climate regime.

Given the prospective scope of emerging carbon markets in North America, US would seem a natural linking partner for the EU ETS to harness the economic benefits of emissions trading across geographic and political boundaries. Joint carbon markets across the Atlantic could even form the first step towards a reference price for carbon in a global market expected to reach several trillion US$ annually.[34] Yet as was mentioned earlier, variations in the design of emissions trading schemes can hamper the prospects for a market linkage, resulting in unwanted distributional impacts,[35] and possibly also compromising the integrity of the underlying trading schemes as instruments of climate policy. Clearly the design features of different schemes merit careful attention prior to linking.

It is as yet unclear whether draft climate legislation currently introduced in the Congress can garner sufficient support to be adopted during the 111th Congress, prior to the mid-term elections in 2012, and whether federal action will pre-empt emerging or existent initiatives at the regional and state level.[36] If the bill passed in the House of Representatives in June 2009 is an indication, such federal legislation might reflect a sufficient level of ambition to be politically acceptable to the EU. Yet preoccupation with the cost of a federal climate policy, intensified by current recession, will likely see inclusion of a price corridor and other cost containment options – such as generous rules on agricultural and forestry offsets – in the counterpart bill currently under discussion in the Senate.

Also, uncertainties remain as to how the US will position itself in the international efforts to negotiate a climate regime for the period beyond 2009, and whether it will commit itself to quantified and binding emission reductions. Without comparable reduction commitments entered on both sides of the Atlantic, carbon prices are likely to evolve along separate pathways, and any attempt to link these markets would result in one-sided trading flows. Active transatlantic cooperation has the best prospects of identifying and realising opportunities for transatlantic emissions trading, as well as finding global climate agreement.

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[31] Robert N. Stavins, "Linking Tradable Permit Systems: Opportunities, Challenges, and Implications", 7th Annual Workshop on Greenhouse Gas Emission Trading, 9 October 2007, Paris, France, available at <http://www.iea.org/Textbase/work/2007/ghget/Stavins.pdf>.

[32] Kristian Tangen and Henrik Hasselknippe, "Converging Markets" 5 *International Environmental Agreements: Policy, Law & Economics* (2005), 52; as described more recently by Christian Flachsland et al., *Developing the International Carbon Market: Linking Options for the EU ETS* (Potsdam: Potsdam Institute for Climate Impact Research (PIK), 2008), 8: "if no agreement on a global trading system is achieved within UNFCCC negotiations by 2009, linking offers an opportunity to keep and build political momentum for constructing a global carbon market in the mid- to long term."

[33] Christian Egenhofer and Noriko Fujiwara, *The Contribution of Linking Emissions Markets to a Global Climate Change Agreement: Feasibility and Political Acceptability*, Final Report of a Study Prepared for the Economic and Social Research Institute, Cabinet Office, Government of Japan, 9, available at <http://www.esri.go.jp/jp/prj-2004_2005/kankyou/kankyou17/02-1-p.pdf>.

[34] Point Carbon, *Carbon 2008 – Post-2012 Is Now* (Point Carbon, Oslo 2008) 17, forecasting a global carbon market worth €2 trillion by 2020, assuming a market volume of 38 Gt and a carbon price of €50 in 2020.

[35] Once linked, schemes with a lower carbon price relative to other schemes will see an increase in demand, creating upward pressure on their domestic carbon pricing; although this may give rise to unwanted distributional impacts, the net effect of linking will usually remain positive for all linked schemes.

[36] Franz Litz and Kathryn Zyla, *Federalism in the Greenhouse - Defining a Role for States in a Federal Cap-and-Trade Program* (Washington, DC: WRI, 2008).

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