Prospects for a Transatlantic Carbon Market

What Next after the US Midterm Elections?

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Abstract

Linking emissions trading systems throughout the Organisation for Economic Co-operation and Development (OECD) by 2015 is a declared objective of the European Union (EU). Yet for the foreseeable future, the main partner of such a linked market, the United States (US), has seen emissions trading become politically unfeasible at the national level. Attention has therefore shifted to the regional level, where emissions trading initiatives are slowly progressing. In April 2011, for instance, the European Commissioner for Climate Action confirmed plans to link the EU Emissions Trading Scheme (EU ETS) to a future Californian market.

Against the background of recent developments at the federal and state level, the following paper analyses the prospects for a transatlantic carbon market. It assesses whether the only carbon trading system currently operating in the United States – the Regional Greenhouse Gas Initiative (RGGI) – is attractive enough to warrant such a link, and whether the Western Climate Initiative (WCI) or some of its participating jurisdictions, including California, may become viable linking partners in coming years. At the federal level, finally, it examines the likelihood that the Environmental Protection Agency (EPA) might implement some form of market-based instrument as it regulates greenhouse gas emissions.

While the paper affirms that a transatlantic carbon market link between the EU ETS and a federal trading system in the United States has become unrealistic for the foreseeable future, it sees potential for an earlier link to regional US trading systems, including a Californian trading system. An integrated OECD-wide carbon market, however, is unlikely to emerge in the short and medium term. Initially, therefore, an international bottom-up climate architecture – which is the more likely scenario after the climate summits of Copenhagen and Cancún – will not be centred around a global carbon market. Emissions trading and linked carbon markets may be one of the more important strands of a new regulatory landscape, but probably not serve as the backbone of international efforts.

Abbreviations

CDM Clean Development Mechanism
CER Certified Emission Reduction
EPA Environmental Protection Agency
EU European Union
EU ETS European Union Emissions Trading System
OECD Organisation for Economic Co-operation and Development
RGGI Regional Greenhouse Gas Initiative
UNFCCC United Nations Framework Convention on Climate Change
WCI Western Climate Initiative
1. Introduction

On 22 July 2010, the Democratic leadership of the United States Senate conceded failure to pass comprehensive climate legislation during the 111th Congress. As a result, any hopes to see a national US emissions trading system in the foreseeable future suffered a decisive and potentially fatal blow. Although the House of Representatives had formally adopted the Clean Energy and Security Act of 2009 (H.R. 2454, 2009) on 26 June 2009, mandating the creation of an extensive carbon market by 2012, this bill did not enter into force without passage of corresponding legislation in the Senate. When the 112th Congress convened on 3 January 2011, the legislative docket was cleared, erasing all previous progress and requiring both houses to commence efforts anew in the current legislative period. Given the outcome of the recent midterm elections, however, prospects for successful climate legislation on the federal level have been greatly diminished going forward: not only was “cap-and-trade” a highly divisive and politicized issue in the electoral campaign, the new Republican majority in the House of Representatives and strong conservative gains in the Senate and in various states have arguably closed the window of opportunity for federal emissions trading for several years. Many of the newly elected Republican legislators question whether there even is a climate problem.

Still, despite the bleak outlook for emissions trading at the federal level, the United States – which pioneered this policy instrument in the first place – may nonetheless see the emergence of a sizeable carbon market based on several regional and state initiatives. Already, a regional trading system for the electricity-producing sector has been operational in ten Northeast and Mid-Atlantic states since 1 January 2009, and efforts to create a more ambitious regional market are underway on the West Coast. Indeed, the failure of federal climate legislation may even instil new momentum and energy into the development of regional policy frameworks. Yet politics are also a complicating factor at the regional level: recent gubernatorial elections in some of the affected states cast doubt on their continued participation in these regional initiatives, limiting the size and possibly future ambition of attendant carbon markets. Conversely, in California, the most populous and economically largest US state, the midterm elections provided an endorsement for strong climate action. As a result, this traditional frontrunner of environmental regulation might once again serve as a model for subsequent policy change at the national level. And finally, despite being politically weakened as a result of his party’s electoral losses, President Barack H. Obama has recently confirmed his commitment to the campaign pledge of a sustainable energy future, announcing far-reaching regulation of a range of different greenhouse gas emitters in various sectors. Although unlikely, it has been suggested that such regulatory efforts could result in the adoption of a limited trading system at the federal level or in individual states.1

When it comes to emissions trading, the US policy landscape therefore clearly remains diverse and in parts uncertain. This has important implications for the stated intention of the European Union to link emissions trading systems across the Organisation for Economic Co-operation and Development (OECD) by 2015. It remains unclear whether expected carbon

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1 For further details, see below, Section 3.5.
markets in the United States will be sufficiently robust to allow a transatlantic link to the emissions trading system already in place in the European Union (EU ETS). Whether such a trading link remains a viable option after the failure to pass federal US climate legislation and the changed political dynamics after the US midterm elections is analysed in this policy paper, as are potential consequences for the development of a global carbon market.
2. Emissions Trading Across the Atlantic: Backbone of a Global Carbon Market?

2.1 Concept and Benefits of Linking

Creating a trading link between the EU ETS and other domestic or regional emissions trading systems is a strategic goal of the European Union, which it has repeatedly expressed in official communications (see, for example European Commission, 2010) and facilitated through a formal mandate in the legislation establishing the EU ETS (EATD, Art. 25). As recently as April 2011, for instance, the European Commission confirmed plans to link the EU ETS across the Atlantic to the emerging Californian carbon trading system (Carus, 2011).

But the idea of linking emissions trading systems has not only attracted interest in the European Union: most existing or emerging carbon markets provide for some form of linkage to other systems. Conceptually, such links are either indirect via acceptance of a common offset credit, or direct links conditional on an explicit decision by at least one of the linked jurisdictions. Moreover, direct links can be distinguished by whether they allow trading in one or more directions. Under a unilateral link, entities in one system can purchase and use trading units from another system for compliance, but not vice versa. Administrators of a system can establish such a unilateral link by agreeing to accept allowances or credits issued by another system for compliance purposes. In a full bilateral link, by contrast, allowances can be freely traded between both systems, and allowances from each system are equally valid for compliance in both systems. Administrators in both systems will typically have to cooperate to create a full bilateral link and specify the conditions of trading across systems. A hybrid solution, finally, consists of reciprocal unilateral links, where each system unilaterally accepts allowances from the other, without however rendering the ability for bilateral trade a condition of that link (Mehling and Haites, 2009). While all major emissions trading systems currently in operation contain a unilateral link to other emissions trading markets, usually a market for credits from offset projects such as the Clean Development Mechanism (CDM), bilateral linking has not yet been explored at a significant scale. Norway, which now is a full participant in the EU ETS, initially operated an autonomous trading system. It joined the EU ETS by adopting the relevant EU legislation, a situation that is somewhat different from linking two functionally independent systems. Also, Switzerland may link its system to the EU ETS from 2013, but the related political discussions are still underway.

A link between emissions trading systems promises a number of benefits, notably by lowering the cost of achieving specified emission mitigation objectives. In theory, the more systems link, the larger the potential efficiency gains. First and foremost, linking promises a wider range of abatement costs by expanding the range of available mitigation options. To the extent that this promise is fulfilled, greenhouse gas mitigation can hence be achieved more cost-effectively as emissions are reduced where reductions are least expensive. Another important benefit of linking can be its ability to lessen pressures on the competitiveness of sectors impacted through the convergence of carbon prices in the linked systems (see Blyth and Bosi 2004; Anger 2008). The degree of economic efficiency gained from international or interregional allowance trading is correlated to the divergence in mitigation cost within each trading system prior to their linkage, but can potentially be significant (Lazarowicz, 2009).
The greater the difference, the greater the potential gain in economic efficiency. Furthermore, a trading link also creates a larger, more liquid carbon market, thereby reducing volatility and the likelihood of market manipulation. At the same time, however, linking can also propagate volatility in one system to other systems, and generally will reduce the amount of control administrators have over their own system (Tuerk et al. 2009a).

2.2. The Strategic Role of a Market Link across the Atlantic

Following the US decision to withdraw from the Kyoto Protocol, bilateral engagement with the United States has been an important strategic focus of the European Union. One pathway to strengthened climate cooperation across the Atlantic could consist in the integration of domestic emissions trading systems in both regions through unilateral or bilateral market linkages. More broadly, transatlantic carbon trading could also provide impetus for an international climate policy architecture centred on increased bilateral and regional cooperation among major emitters. Aside from the European Union and the United States, a number of other industrialised countries, including Australia, Canada, Japan, New Zealand, Norway, and Switzerland, have already introduced or have been considering domestic emissions trading systems. Given that Europe and the US alone account for roughly 80 percent of the emissions of these countries, it is clear why a transatlantic market link would form the logical nucleus of any larger trading regime (Sterk and Kruger, 2009, Tuerk et al., 2009b).

Reflecting the North American preference for domestically driven climate cooperation, many observers have suggested that the path to re-integrating the US into international climate negotiations might lead through emissions trading. In their view, the US would first develop a national carbon market and then negotiate links with other countries, as opposed to first adopting an international commitment and then establishing a trading system (see e.g. Kruger and Pizer, 2004). Over time, a link between existing and emerging carbon markets could also underpin the pursuit of a comprehensive global climate agreement by laying the groundwork for cooperation through an iterative process that involves the unilateral definition of mitigation objectives and policy actions. The status of the current international negotiations for a new climate agreement indicates that initially, such bottom-up cooperation is likely to be politically more feasible than an overarching international regime, yet it could facilitate intensifying cooperation as domestic stakeholders develop capacity for climate mitigation and learn to harness the attendant benefits arising from innovation, new employment, greater energy security and more efficient, sustainable economies. In the event that multilateral negotiations fall victim to persistent diplomatic gridlock, however, a carbon market evolving from the bottom up could provide a fallback option for international climate engagement in case no global agreement materializes (Sterk and Schüle, 2009). Establishing bilateral and regional cooperation alongside multilateral negotiations is hence a strategy pursued by both the US and the EU, while a more domestically driven approach to international climate cooperation has already found its reflection in both the Copenhagen Accord and the Cancún Agreements embodying the latest diplomatic outcomes.

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2 Major developing countries – such as China, India, Brazil and Mexico – have also declared their intention to harness market mechanisms for climate mitigation in the medium term, see Hood, 2010, p. 29-30.

3.1 Introduction

As was widely expected, the US midterm elections of 2 November 2010 resulted in a solid victory of the Republican Party, which successfully captured a majority in the House of Representatives and eroded the majority of the Democratic Party in the Senate. Likewise, gubernatorial elections in six states saw Democratic incumbents be replaced with a Republican contender, and a majority of states now have a Republican governor. These election results are very likely to dampen any prospects for decisive action on climate change, both at the federal level and in a majority of states. Already during the election campaign, climate change had featured heavily in many races, with past support for climate policies – and notably for the emissions trading system proposed by congressional Democrats – frequently held against candidates by their conservative rivals. Surveys suggest that a majority of newly elected members of Congress deny the existence of anthropogenic climate change (ThinkProgress, 2010). Indeed, the very notion of emissions trading may have become politically untenable in broad segments of the US population after a heated and highly partisan debate over the perceived economic risks of this policy instrument.

While all this clearly lessens the probability of a federal emissions trading system in coming years, election outcomes in a number of progressive states, especially along the particularly on the East and West Coasts, have potentially strengthened frontrunner efforts to promote climate action, including carbon markets. In California, the election of a strong advocate of climate policy as governor went hand in hand with the rejection of a referendum that would have halted implementation of that state’s climate legislation. Despite some uncertainties, moreover, regional climate initiatives built around cross-jurisdictional emissions trading systems are also likely to continue evolving, although with reduced overall participation. In sum, therefore, the climate policy landscape in the United States is certain to evolve along a less streamlined and central trajectory, with an emissions trading system unlikely to emerge at the federal level anytime soon, but regional carbon markets evolving at varying speeds in different groups of states. In the following subsections, we provide both an update and analysis of current emissions trading initiatives in the United States.

3.2 Regional Greenhouse Gas Initiative (RGGI)

The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by ten US North-East and Mid-Atlantic states to implement a regional cap-and-trade system. RGGI, which represents the first mandatory GHG emissions trading scheme in the US, began operations in 2009. Emissions from fossil-fuel electricity generators larger than 25 MW are restricted under the cap, with a goal of stabilizing these emissions between 2009 and 2014 and reducing them by 10 percent by 2019. Each participating state receives an emissions budget and is free to determine how to allocate 75 percent of the corresponding allowances among covered participants. At least 25 percent of the allocated allowances must be assigned to consumer benefit or strategic energy purposes, such as new technologies, yet in practice most of the allowances are auctioned (RGGI, 2008). The system allows the use of five types of offsets for compliance, one of which is carbon sequestration resulting from afforestation projects. The
extent to which covered entities may use offset credits to meet obligations is restricted, with restrictions dependent on allowance prices. Offsets are restricted to 3.3 percent of a generation unit’s emissions during an initial control period. If the 12-month rolling average of allowance prices exceeds 7 USD per ton, units may use offset credits to meet up to 5 percent of their obligation; if the 12-month rolling average exceeds US 10 USD, plants may offset up to 10 percent of emissions. In the event that up to 10 percent of emissions can be offset, participants may also use credits from the EU ETS and the flexibility mechanisms under the Kyoto Protocol (RGGI, 2008). Offsets thus serve as a safety valve to limit costs of the system. Because of the modest initial target, reduced electricity demand due to the recession and lower than expected natural gas prices, the market has been oversupplied with allowances and the price has fallen to near the system floor-price of USD 1.86/tCO₂ (IEA, 2010). Accordingly, no offsets have yet been purchased by covered entities to assist with their compliance obligations. Participants are, however, in discussions about reviewing and potentially tightening the RGGI cap,³ in which case the ambition of the system would become more closely aligned with the EU ETS, but also the potential for offset usage would increase.

### 3.3 Western Climate Initiative (WCI) and California

The WCI is comprised of seven Western states and four Canadian provinces that have developed a comprehensive strategy for reducing global warming pollution 15 percent below 2005 levels by 2020, including a regional carbon market set to begin in 2012. Cap-and-trade will be the central policy instrument for mitigation, complemented by additional policies for specific sectors and activities. The WCI regional cap-and-trade program will be composed of the individual jurisdictions’ cap-and-trade programs implemented through state and provincial regulations. Five WCI partner jurisdictions are currently working toward starting their programs in 2012: California, New Mexico, British Columbia, Ontario, and Quebec. These partners represent approximately two thirds of the total emissions in the WCI jurisdictions. In 2015, the WCI market could comprise up to 750 million tons (Point Carbon, 2010). Each partner jurisdiction implementing a cap-and-trade program will issue emission allowances to meet its jurisdiction-specific emissions goal. The total number of available allowances serves as the cap on emissions. A regional allowance market is created by the partner jurisdictions accepting one another’s allowances for compliance. The allowances can then be sold between and among covered entities as well as by third parties. In July 2010, the WCI released a detailed program design, including the framework for cap-and-trade systems in the participating jurisdictions, as well as complementary policies such as energy efficiency programs and vehicle emissions standards. The program design recognizes, however, that variations in jurisdictional authority, regulatory procedures, and administrative requirements will result in different approaches to implementation. In principle, it provides that the participating states can apply cost containment measures in their cap-and-trade systems, including allowance reserves, limited borrowing, and auction floor prices, but excludes hard price caps and unlimited borrowing as contained in some of the earlier proposals for a federal US cap-and-trade system (WCI, 2010). Also, the WCI program design defines criteria for offsets. The WCI Partner jurisdictions recommend that the use of offsets certificates and approved compliance instruments from other programs (such as another cap-and-trade

³ The RGGI model rule requires a review of the entire program, including the effectiveness of the cap, by 2012, and modelling for this review has already been commissioned and published.
system) not exceed 49 percent of the aggregate required emissions reductions across all the partner jurisdictions’ programs (WCI, 2010).

The WCI program recommendations are designed to facilitate linking among the WCI partner jurisdictions as well as linking with jurisdictions participating in other programs. Prior to linking, a partner jurisdiction will have the opportunity to review each jurisdiction’s program to assess its consistency with the program design. The WCI partner jurisdictions are also actively exploring linkages with other government approved cap-and-trade systems. Jurisdictions participating in the three regional climate initiatives currently evolving in North America – WCI, RGGI, and the Midwestern Greenhouse Gas Reduction Accord – have been working cooperatively to share experiences in the design and implementation of regional cap-and-trade programs, inform federal decision making on climate change policy, and explore the potential for further collaboration among the three regional programs. This work will provide a potential roadmap for developing bilateral or multilateral linkages (WCI, 2010).

3.4 California

The approval of the design of a cap-and-trade system by the Californian Air Resources Board (CARB) in December 2010 paved the way for its implementation from 2012. The system would include electricity production (as well as imports) and large industrial facilities (>25,000 metric tonnes of carbon dioxide per year). In line with the overall WCI design starting in 2015, distributors of transportation fuels, natural gas, and other fuels will be included. The system will establish a declining aggregated emissions cap on included sectors.

The cap starts at 165.8 million allowances in 2012, which is equal to the emissions forecast for that year. The cap declines approximately 2 percent per year in the initial period (2012–2014). In 2015, the cap increases to 394.5 million allowances to account for the expansion in program scope. The cap declines at approximately 3 percent per year between 2015 and 2020. The 2020 cap is set at 334.2 million allowances; allowances will be distributed through a mix of direct allocation and auctioning. The system will allow an offset limit of 8% of the compliance obligation and allows REDD and sector-based credits. In California, a greater volume of offsets can be used compared to the WCI program design, since early use of a cost containment reserve may lower the cap in later years.

CARB would accept credits from external credit-issuing programs through a linkage agreement. In addition, the system will include a tiered price reserve. Approximately 5% of total allowances between 2012 and 2020 will be placed in reserve (1% for 2012–14; 4% for 2015–17; 7% for 2018–20). And of the total allowances available, one-third would be available at 40 USD/metric ton, one-third at 45 USD, and one-third at 50 USD (increasing by 5% plus inflation each year). Linking to other WCI states is a short term goal of the Californian system. Recommendations are likely to be brought to the Board already in 2011 for possible linkage with the programs being developed by the four other WCI Partners that are currently working to implement programs by January 2012 (CARB, 2010).

A temporary setback was incurred in March 2011 when the San Francisco Superior Court enjoined CARB from further implementation of the trading system, stating that it did not
sufficiently consider alternatives to the cap-and-trade system it eventually decided on.\textsuperscript{4} Under the terms of the injunction, CARB will have to amend the environmental review document, a measure it has already announced along with an appeal of the Court decision (Diniz, 2011).

3.5 EPA Regulation: Still Hope for Federal Emissions Trading?

Notwithstanding the outcome of the congressional midterm elections, President Barack H. Obama has affirmed the US commitment to reduce greenhouse gas emissions by 17% below 2005 levels until 2020, as pledged under the Copenhagen Accord and the Cancún Agreements (Light, 2010; Cappiello, 2010). At the federal level, attention has therefore shifted to the Environmental Protection Agency (EPA) and its regulatory powers to limit greenhouse gas emissions. Established on 2 December 1970 as an independent agency of the US government, the EPA implements federal legislation on a broad range of environmental subject matters, frequently adopting substatutory regulations and supervising their implementation by federal and state authorities. On the issue of climate change, however, the EPA had not become significantly involved until a landmark decision of the Supreme Court in the case of Massachusetts et al. v. Environmental Protection Agency et al. declared that greenhouse gases are pollutants and hence fall within the jurisdiction of the EPA (Supreme Court, 2007). By 7 December 2009, the EPA had formally adopted an Endangerment Finding under Section 202 of the Clean Air Act stating that anthropogenic climate change threatens the environment and public health (EPA, 2009), a prerequisite for the adoption of rules to limit greenhouse gas emissions from mobile and stationary sources. Based on this mandate, the agency has already elaborated federal vehicle emission and fuel economy standards for the transport sector as well as a mandatory rule on greenhouse gas reporting for large stationary emitters. New or substantially modified emitters are also subject to a permitting requirement under the Clean Air Act, with a Tailoring Rule ensuring that these requirements apply only to the largest stationary sources of greenhouse gases (EPA, 2010a).\textsuperscript{5}

While this system of operating permits allows the EPA to elaborate guidance for implementing state authorities on how to define best available control technologies (BACTs) for each covered source, it does not provide the means to specify greenhouse gas emission standards, let alone a federal emission limitation or reduction target. As the EPA has itself attested, however (EPA, 2008\textsuperscript{a}), the Clean Air Act provides additional pathways through which to regulate greenhouse gas emissions from stationary sources, including, most importantly, national ambient air quality standards (NAAQS) and performance standards for new and existing stationary sources (NSPS). Given that ambient air quality standards are, by nature, less suited to address non-toxic greenhouse gases, observers have suggested that the EPA would likely implement further requirements for greenhouse gas emissions through performance standards (Goubet, 2010: p. 17; Richardson et al., 2009: p. 1). And indeed, on

\textsuperscript{4} As the Court stated, “the A.R.B. seeks to create a fait accompli by premature establishment of a cap-and-trade program before alternatives can be exposed to public comment and properly evaluated by the A.R.B. itself”, see Association of Irritated Residents v. California Air Resources Board, Superior Court of San Francisco, Case No. CPF-09-509562, 18 March 2011.

\textsuperscript{5} Under the Tailoring Rule, permitting focuses on the largest industrial sources, starting with new or substantially modified facilities that already are subject to permitting requirements for conventional pollutants and have the potential to emit 75,000 tons per year of carbon dioxide equivalent (CO\textsubscript{2}e) or more, and later adding all sources that emit at least 100,000 tons of GHG per year. Sources emitting less than 50,000 tons of GHGs per year will not be required to obtain permits for the time being.
23 December 2010, the EPA signed decrees requiring the Agency to propose new source performance standards and emission guidelines for greenhouse gas emissions from refineries and electric generating units fired with natural gas, oil and coal (EPA, 2010b), two sectors which combined account for approximately 40 percent of US emissions. Under the schedule outlined in the decrees, the EPA will propose standards and guidelines for power plants by 26 July 2011 and for refineries by 15 December 2011, with the expectation of finalizing them in 2012. Standards would apply directly to modified and new facilities, while emission guidelines for existing facilities would need to be implemented by state authorities. As the EPA has stated, actual emission reductions under these rules will not be required from existing facilities before 2016.

According to the Supreme Court, the EPA has broad discretion in the application of the Clean Air Act. In principle, therefore, the agency has sufficient discretion in selecting suitable policy instruments to also explore the use of market-based instrument. In order to mandate the creation of an emissions trading system under the regime of new source performance standards, however, the EPA would have to first demonstrate that a market for tradeable allowances is both an environmentally effective and cost efficient means to attain the required standard (Goubet, 2010: p. 18). Meeting this requirement would arguably be easiest in the energy sector, which is already covered by an emissions trading system for a criteria pollutant, sulphur dioxide (SO$_2$), and has already seen ample negotiations on reduction potentials, cost, and allocation of responsibilities between different utilities precede adoption of the American Clean Energy and Security Act in the House of Representatives in June 2009 (Monast et al., 2010: p. 11). What is more, there are prior examples for the introduction of allowance markets in combination with new source performance standards, namely a restricted trading system for nitrous oxides (NO$_x$) from waste incinerators and a discontinued market for mercury pollutant permits, the Clean Air Mercury Rule (CAMR, see EPA, 2008b). Over time, a trading system based on performance standards could also be combined with absolute emissions limitation or reduction targets under the rules on national ambient air quality standards.

Still, the agency is generally limited in its regulatory powers to defining a broad policy framework, for instance by elaborating federal guidelines. As long as the minimum standards set out by the EPA are met, policy implementation will typically remain a prerogative of the states, incurring a certain risk of fragmentation. A second discussion, therefore, has emerged in the United States as to whether individual states could set up emission trading systems by way of complying with the federal performance standards; this discussion is at a very early stage, however, and its outcome is far from certain. At any rate, it seems unlikely at this point that the EPA will explore market based instruments so soon after the failure of emissions trading legislation in the US Senate. During the announcement of the foregoing standards, a senior EPA official also emphasized that these new rules will “not in any way”

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6 See Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984), where the Court held that the judiciary has to defer to EPA interpretations of its authority granted under the Clean Air Act (1) where the grant of authority was ambiguous and (2) where the interpretation was “reasonable or permissible.”

7 Section 40 of the Code of Federal Regulations 60.33 (b) (2): “A State plan may establish a program to allow owners or operators of municipal waste combustor plants to engage in trading of nitrogen oxides emission credits. A trading program must be approved by EPA before implementation.”
amount to a "cap-and-trade program" (Reuters, 2010), reflecting the significant political resistance against emissions trading currently evident in the United States. Given the composition of the newly elected 112th Congress, it stands to reason that any advances by the EPA in this regard would meet with strong political resistance and judicial action. Indeed, the new Republican majority in the House has contemplated taking steps such as cutting funding to prevent any advance on regulating GHGs such as those outlined above. For the time being, therefore, any hope for a federal carbon market based on regulatory action by the administration would appear misplaced optimism.
4. Challenges for Carbon Trading Across the Atlantic

Building on the foregoing description of current emissions trading initiatives in the United States, this section discusses potential challenges for a future transatlantic market linkage, identifying potential obstacles with each system.

Linking of emissions trading systems does not require that all design features of the affected trading systems be harmonized. Some differences can be tolerated without detriment to the link, others require only minor technical changes. Significant barriers to effective direct linking trading schemes can arise from the following design features:

i) differences in the relative stringency of targets;

ii) differences in the eligibility and definition of offset credits;

iii) differences in the nature of emission targets; and

iv) price management and cost containment mechanisms (Tuerk et al., 2009a).

Clearly, the relative stringency of emission caps is of paramount importance given its relevance for carbon prices in each trading system. Not only is the comparability of efforts important from the point of view of public perception, but differences in price also have very real allocative implications between the linking partners: allowances from the system with the lower price will continue to flow to the system with a higher price until prices converge; the result is a flow of capital from the latter system to the former, as well as a price decrease in the latter and an increase in the former. That this can result in significant political pressures, especially if the price gap is large to begin with, should be evident (Sterk and Schüle, 2009; Flachsland et al., 2009b).

Difficulties can also arise if some types of offset credits are considered eligible in one trading system, but not in the trading system of a potential linkage partner. For instance, designs for trading systems in the US have typically envisaged allowing domestic credits from the domestic agricultural and forest sectors as well as, more recently, REDD credits from developing countries. By contrast, the EU ETS does not currently recognize credits from land use and forestry. If such credits are eligible in one system, they will also affect the overall supply – and by extension, the price – of units in the combined market. Entities in the system where such credits are eligible can use the credits for their domestic compliance obligations and sell their domestic allowances to the system where the offsets are not allowed. It would be impossible for the administrator of the purchasing system to determine whether an incoming allowance has been freed up by use of a credit which they themselves would not accept for compliance.

Another obstacle relates to the nature of the mitigation target. Generally, two types of targets are conceivable: absolute caps, which limit the total emissions during a specified period; and relative targets, which are defined as emissions per unit of output or activity, such as gross domestic product (GDP) or energy consumption, or as emissions per unit of input. Thus, under a system with relative targets, overall GHG emissions may even increase as long as it is accompanied by an increase of production or GDP.

Linking a system with relative to a system with absolute targets hence raises equity concerns, since companies under the system with relative targets are effectively receiving a subsidy for increasing their output. In addition, linking as such will have an impact on emissions, the
direction of which depends on the allowance prices in the two schemes: if the price in the system with relative targets is lowered by linking, production and energy use will be stimulated, which will lead to rising emissions. That is, the environmental effectiveness of emissions trading would be impaired. If the price is raised by linking, the reverse effect will take place.

There are several options to address the problem of different types of targets, such as introducing exchange rates whereby trading units from the system with relative targets would be discounted against units from the system with absolute caps. However, all these options would render the system more complex and increase transaction costs (Sterk et al., 2006).

What is more, the mandate for linking agreements currently contained in Article 25 of the EU ETS directive explicitly limits any linking efforts to systems with absolute caps. Although intensity targets have been previously discussed in the US, for instance in past proposals for federal climate legislation, none of the US trading systems discussed in this paper foresees an intensity target.8 As a result, this question loses relevance.

Finally, much concern has centred on the potential of price management features to prevent or impede a market linkage. In order to avoid high allowance prices or excessive price volatility, US emissions trading systems may include extensive cost-containment measures, including offset provisions, borrowing provisions, safety valves, or price caps. If these provisions are present in one system, they will become available to participants in linked systems, regardless of whether the latter have opted to incorporate the same features. The mechanism is the same as described above for the case of differing recognition of offsets: participants in a system that has cost-containment provisions will be able to purchase units at the capped price and sell these to participants in other linked systems, effectively extending the cost-containment rules to other systems (Stavins, 2007). Although a system can impose restrictions on the quantity and type of allowances that may be traded across the link, such qualifications can impede the efficiency of the link and even affect the willingness to integrate markets. Still, none of the US trading systems assessed here have very far reaching price management provisions; any rules that may be of relevance are briefly addressed in the more detailed analysis of each system below.

Finally, indirect linking also requires that certain preconditions are met. The degree of carbon price convergence via indirect links through common offset standards depends on the supply curve for offset credits and quantity limits on the import of credits. Most importantly, however, it depends on a common understanding on the nature and integrity of offset programs.

4.1 Linking the EU ETS with the WCI

4.1.1 Stringency of Mitigation Targets

At first sight, the 15% reduction target set for 2020 by the WCI may look broadly comparable to the 20% target set for 2020 in the EU; it should be noted, however, that the European target may still be further tightened. While such a move was originally tied to the adoption of

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8 An exception might be emissions trading under the federal Clean Air Act, should this instrument be explored as a means of implementation, see Section 3.5.
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a sufficiently ambitious international climate agreement, a discussion has now emerged to strengthen the target irrespective of what happens at the international level. Nevertheless, despite the fact that the WCI cap is less stringent than the EU mitigation target, the range of carbon prices projected for both regions is largely comparable. Currently, the WCI carbon price is forecast to reach between 13 and 50 USD by 2020, with a price of 33 USD (currently 25 EUR) expected under the most likely policy scenario (WCI, 2010), while the European Commission expects a carbon price of 16 EUR in case the total EU emissions reduction target remains at 20% by 2020, rising to 37 EUR in case the EU tightens its target to 30% by 2020 (European Commission, 2010b). Although the EU ETS has shown that actual prices may develop rather differently from ex ante projections, the current projections suggest that the level of ambition in both systems might be sufficiently similar for linking.

4.1.2 Eligibility of Offset Credits

Regarding the eligibility of offset credits, the WCI scheme will allow for credits from carbon sink projects, which the EU ETS presently excludes. Still, the inclusion of sink credits need not pose an insurmountable obstacle if the WCI adopts measurement, reporting and verification (MRV) provisions that are sufficiently robust to instil confidence in the EU that the environmental integrity of the WCI will not be affected.

4.1.3 Cost Containment Provisions

At present, the WCI program design defers specification of several design features to the participating states, including the detailed design of cost-containment provisions. What the WCI program design recommends, however, is for any cost-containment provisions to uphold the environmental integrity of the trading system by excluding hard price caps as well as borrowing, both of which could limit the ability to link to other trading systems in the future (WCI, 2010). Accordingly, no obstacles to linking are apparent at this point, but they could still emerge depending on how participating states approach the issue of cost containment.

4.2 Linking the EU ETS with a Californian Trading System

4.2.1 Stringency of Mitigation Targets

In line with the overall WCI program design, the planned Californian trading system poses fewer obstacles to linking than many past proposals for a federal US trading system. While the reduction target is again less stringent than the EU ETS, it is expected to result in comparably high carbon prices of up to 50 USD per tonne by 2020 (CARB, 2010).

4.2.2 Eligibility of Offset Credits

Barriers are more likely to arise from the acceptance of offset credits: the Californian trading system will allow domestic land-use offsets, which the EU ETS currently precludes. Also, the acceptance of international credits from REDD activities may constitute a barrier, as the EU does not plan to admit such credits into the EU ETS until at least 2020. As for sectoral credits, which are expressly referenced in the Californian market and have, in principle, also been

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9 This is largely due to the fact that marginal abatement costs in several WCI states are relatively high, with limited fuels switching options in the power sector preventing low-cost mitigation.
considered for eligibility in the EU ETS (European Commission, 2010a), their relevance for a potential future direct or indirect link will depend on the specific rules under which they are developed and implemented. It is unclear at the moment if the rules for international offsets in California will follow international standards developed under the UNFCCC.

4.2.3 Cost Containment Provisions

Finally, the Californian trading system also provides for a tiered allowance reserve, which may pose an obstacle to linking as it creates a buffer against rising CO₂ prices while the EU currently provides only very limited options for price management. However, only a limited amount of allowances would be available, and at a fixed price in the range of 40 to 50 USD in 2012, rising annually by 5%, the price at which allowance would be available is at the upper range of forecasted prices in California and the EU. Therefore, this approach to cost containment is far less of an obstacle than the hard ceiling for allowance prices at low levels included in some of the proposals for a federal US trading system, and is hence likely to still leave room for agreement on transatlantic linking.

4.3 Linking the EU ETS with RGGI

In contrast to the EU ETS and the foregoing US trading systems, which are based on metric tons, RGGI denominates its carbon allowances in short tons (= 907.18474 kg). Linking RGGI to the EU ETS would therefore require some form of exchange rate, although this is a largely technical challenge that can be overcome by an automatic adjustment to any allowance transfers.

4.2.1 Stringency of Mitigation Targets

Currently, the RGGI market is substantially over allocated, resulting in allowance prices below the auction floor price of 2 USD (RGGI, 2010). For reasons outlined earlier, it is highly unlikely that the EU would seek a link to a trading system with such a price differential that is caused by over-allocation. Nor would a link likely be acceptable for RGGI. Linking the EU ETS to the RGGI system, which is a far smaller market overall, would exert strong upward pressure on prices of the RGGI system. In the longer term, however, the RGGI participants are planning a review process that may result in an adjustment of the cap and possibly could see the inclusion of additional sectors. Both would improve the prospects for a transatlantic carbon market link.

4.2.2 Eligibility of Offset Credits

RGGI allows several offset types, including the sequestration of CO₂ through afforestation measures. While this would prima facie seem incompatible with the EU ETS, where offset use is limited to CDM CERs with additional restrictions; anticipating the expiration of the first Kyoto commitment period, however, the revised EU ETS directive already foresees the

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10 The revised EU ETS Directive also foresees some limited intervention mechanisms in case of excessive price fluctuation. If for more than six consecutive months the allowance price is more than three times higher than the average price during the preceding two years, measures may be adopted to allow Member States to either bring forward the auctioning of a part of the quantity of allowances to be auctioned, or to auction up to 25% of remaining allowances in the new entrants reserve, see Article 29a.
possibility of agreements with third countries to recognise credits from other projects or emission reducing activities (EATD, Art. 11a (5)), suggesting that the EU will be more open to additional offset types in future.

4.3.3 Cost Containment Provisions

The only cost-containment RGGI provides for is the price dependence of offset limits. The amount of offsets that entities under the RGGI systems can use if the 12-month rolling price average exceeds 10 USD amounts to 10 percent of their CO₂ compliance obligation, that is, the emissions making up the cap for that entity (Note: the reduction target is also 10%). As a full bilateral link between the EU ETS and RGGI is likely to increase the CO₂ price of the RGGI system beyond 10 USD, RGGI participants could achieve compliance by using offsets.


<table>
<thead>
<tr>
<th>Trading System Design Feature</th>
<th>European Union</th>
<th>RGGI</th>
<th>WCI</th>
<th>California</th>
<th>Linking Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coverage</strong></td>
<td>Downstream coverage of energy and industry sectors</td>
<td>Downstream coverage of electricity generation and industry, upstream coverage of residential, commercial and industrial fuel combustion as well as transportation</td>
<td>Downstream coverage of power generation</td>
<td>Downstream coverage of Power generation and imports, large industrial facilities and from 2015 upstream coverage of distributors of fuels</td>
<td>Price adjustments due to linking would affect broader segment of WCI economy, including gas and heating prices for consumers</td>
</tr>
<tr>
<td><strong>Definition and recognition of trading units</strong></td>
<td>EU Allowances measured in metric tonnes of CO2-eq.; non-LULUCF CERs/ERUs up to -20% 2020 target: leftover amount from period 2008-2012 or minimum 11% of allocation in 2008-2012 period - more stringent 2020 target: half of additional effort needed; Possibility for community offset projects</td>
<td>Allowances measured in short tons (907.18474 kg); offset credits from RGGI states; limited EUAs, CERs, ERUs if price exceeds certain level. Sink credits allowed</td>
<td>Allowances measured in metric tonnes of CO2-eq.; Domestic offset projects including forestry, international credits including from RED</td>
<td>Allowances measured in metric tonnes of CO2-eq.; Domestic offset projects including forestry, international credits including from RED</td>
<td>Linking would undermine EU decision to exclude sinks Exchange rate needed for RGGI Domestic forestry offsets (RGGI, WCI, California) as well as international offsets that are not eligible in the EU_ETS (eg. from RED) may pose barriers</td>
</tr>
<tr>
<td><strong>Stringency of targets</strong></td>
<td>At least 21% below 2005 levels by 2020, may be further strengthened</td>
<td>Stabilisation at 1990 level in 2009-2015</td>
<td>15% reduction from 2005 level by 2020</td>
<td>Reducing the state's emissions to 1990 levels by 2020</td>
<td>WCI and Californian cap numerically less stringent than EU-ETS cap, in particular if EU cap tightened. However, the expected carbon price ranges in the WCI, California and the EU-ETS (in case of a 30% target) are comparable. RGGI cap significantly weaker than EU-ETS cap and currently over-allocated</td>
</tr>
</tbody>
</table>
### Temporal flexibility

<table>
<thead>
<tr>
<th>Temporal flexibility</th>
<th>1-year compliance periods</th>
<th>1-year compliance periods</th>
<th>3-year compliance periods</th>
<th>3-year compliance periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking possible</td>
<td>Banking possible</td>
<td>Banking possible</td>
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<td>Banking possible</td>
</tr>
<tr>
<td>De facto borrowing possible within trading periods but phasing out</td>
<td>Unlimited banking possible</td>
<td>In principle prohibited, but de facto borrowing possible within trading periods</td>
<td>In principle prohibited, but de facto borrowing possible within trading periods</td>
<td>No system allows borrowing, in some de facto borrowing possible within trading periods</td>
</tr>
</tbody>
</table>

### Penalties

| Penalties | EUR 100 per excess tonne plus surrendering of missing allowances in the next calendar year | Thrice the market value per excess tonne of emissions | 3 allowances for each tonne not covered | Multi-day fine pursuant to Health and Safety Code, determined by State Board of Public Health | Strict penalties in all systems |

### Intervention mechanisms

| Intervention mechanisms | Possibility to move forward auctions to address excessive price volatility | Access to offsets is increased if price exceeds certain level | Limited use of interventions mechanisms | Tiered allowance reserve | No hard interventions mechanisms, such as price caps, but need of further harmonisation |

Figure 1: A comparison of the different design elements of North American emissions trading systems and the EU ETS
5. Conclusion

History repeats itself: years of standstill on climate policy at the US federal level had largely relegated transatlantic climate cooperation to EU engagement with progressive US states and regions when, in 2008, the election of a Democratic president and Congress raised hopes for a substantial breakthrough. Following the demise of federal climate legislation in the US Senate, however, prospects for a transatlantic carbon market are once again dependent on the possibility to link the EU ETS with regional carbon markets, such as the trading system envisioned under the WCI. While not all participating jurisdictions will be implementing an emissions trading systems when the WCI begins in January 2012, those expected to move ahead comprise approximately two-thirds of the total emissions in the WCI area, and may constitute a market with a third of the size of the EU ETS by 2015. Specification of several design details in the WCI trading system is left to the individual partner jurisdictions; still, the overall WCI program design rules out insurmountable obstacles for a transatlantic market link, such as hard price ceilings.

Some degree of harmonisation with the EU ETS might be needed in the area of cost containment as well as offset provisions. But arguably one of the most important criteria for successful linking of carbon markets, comparability of carbon prices, should not pose a significant obstacle: according to current price forecasts, allowance prices on the US West Coast are predicted to be higher than allowance prices expected in the EU ETS, and roughly commensurate if the EU tightens its reduction target. At present, however, it stands to reason that a link with the EU ETS will not be a priority for WCI participants, despite the strong interest expressed from the European side. After the individual emissions trading systems in WCI partner jurisdictions become operational in 2012, these systems will first seek bilateral links among each other in order to create a liquid carbon market. Also, WCI partners are already in advanced discussions with the other regional trading initiatives in North America to explore bilateral linking over the mid-term.

In theory, the RGGI system, which is already up and running, is another candidate for linking. However, while the functional design features of both systems are generally compatible, RGGI prices are so low that linking is hardly attractive for either side. Linking would therefore only be an option if the RGGI cap were substantially tightened. Still, if the EU succeeded in establishing a trading link to RGGI, the WCI, or other regional initiatives, its actions would likely send a strong political signal and revitalize the discussions about a global carbon market.

A transatlantic link between the EU ETS and a federal US trading scheme has become unrealistic for the foreseeable future. Any hopes that the US will ratify a legally binding international climate agreement anytime soon have been quashed by the US midterm election. Admittedly, the US administration may still pursue a number of policies to regulate greenhouse gas emissions, but any such measures will likely steer clear of emissions trading in order to avoid being repealed by Congress.

While linkages between the EU ETS and regional US trading systems may thus lie several years in the future, markets on both side of the Atlantic, in the meantime, may be indirectly linked via acceptance of a common offset credit, such as CDM units or other new
international credits. Such indirect linkages would already yield a share of the economic benefits offered by direct linking. An approximation of views between regional US systems and the EU regarding international offsets would therefore be of crucial importance to enable both indirect and, over time, also perhaps direct links. In particular, the development of criteria to provide credits on a sectoral basis should be an area of collaboration between the US and the EU in the future exploration of new market mechanisms.

Already well before the midterm elections, the US held the view that a new international climate agreement should be “very different” from the Kyoto Protocol, and has proposed a bottom-up approach where the UNFCCC would essentially serve as a facilitator and repository for information on what is decided domestically. In addition, the US has taken the position that it will only adopt a legally binding commitment internationally if the degree of bindingness is the same for all major emitting countries, a notion that is vehemently rejected by emerging economies on the path towards rapid industrialisation.

Currently, it does not seem likely that industrialised countries outside the US will be willing to agree on a second commitment period under the Kyoto Protocol. In Cancún, Japan and Russia posited their opposition to a second commitment period even more strongly than in earlier negotiating sessions. While the EU and Australia have indicated that they could agree to a second commitment period if the USA and rapidly industrialising developing countries are adequately covered under a new parallel agreement under the Convention, they may not uphold their support for the Kyoto Protocol if Japan and Russia remain altogether opposed.

Given this state of affairs, international climate cooperation currently seems likely to default to a “pledge and review” system as proposed by the US and embedded in the Copenhagen Accord and the Cancún Agreements, at least for the foreseeable future. Clearly, this does not mean that the international community will remain inactive: for one, the deadline imposed by the Copenhagen conference injected a significant dynamic into national discussions. One country after another has elaborated domestic targets and actions, and presented these to an international audience. The last two years have hence resulted in a much better understanding of national mitigation potentials, available policy options, and actions that countries are prepared to take. This dynamic would hardly have materialized without the positive pressure exerted in the run-up to Copenhagen. More importantly, countries are already enacting policies and measures to achieve their Copenhagen pledges even in the absence of a legally binding international treaty. One may hope that this dynamic will gather further steam in the years ahead, and ultimately culminate in a corresponding strengthening of the international framework.

In most countries, the new policies and measures will probably not include domestic emissions trading for the foreseeable future, but that does not apply to all countries. Several nations will probably seek to strengthen existing and create new bilateral and plurilateral initiatives. As there will be no federal climate legislation in the US and Canada for a number of years, an OECD-wide carbon market is unlikely in the short-term and mid-term, and a bottom-up climate architecture, which is the more likely scenario going forward, will probably not be centred around a global carbon market. Rather than one unified regime, the next decade is therefore likely to yield a patchwork of regimes. Emissions trading and linked carbon markets may be one of the more important strands in this regulatory landscape, but probably not the backbone of international efforts.
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Other Sources


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