

A Guide to Linking Emissions Trading Systems



International Carbon
Action Partnership

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List of Acronyms

APCR	Allowance Price Containment Reserve	LDCs	Least Developed Countries
ARB	California Air Resources Board	LULUCF	Land Use, Land Use Change and Forestry
ASPI	Asia Society Policy Institute	MDDELCC	Québec Ministry of Sustainable Development, Environment, and Fight Against Climate Change
AUD	Australian Dollar	MoU	Memorandum of Understanding
BAFU	Switzerland Federal Office for the Environment	MRV	Monitoring, Reporting and Verification
BAU	Business as Usual	MSR	Market Stability Reserve
CCR	Cost Containment Reserve	NDC	Nationally Determined Contribution
CDM	Clean Development Mechanism	NESCAUM	Northeast States for Coordinated Air Use Management
CERs	Certified Emission Reductions	NGO	Non-Governmental Organization
CITSS	Compliance Instrument Tracking System Service	NYISO	New York Independent System Operator
CO₂	Carbon Dioxide	OBA	Output Based Allocation
CPM	Carbon Pricing Mechanism	OECD	Organization for Economic Cooperation and Development
ECR	Emissions Containment Reserve	PFCs	Perfluorocarbons
EEA	European Economic Area	PJM	Pennsylvania, Jersey and Maryland
EITE	Emissions-Intensive, Trade-Exposed	PMR	Partnership for Market Readiness
ETS	Emissions Trading System	REMI	Regional Economic Models, Inc.
EU	European Union	RFF	Resources for the Future
EU ETS	European Union Emissions Trading System	RGGI	Regional Greenhouse Gas Initiative
EUAs	European Emission Allowances	RGGI COATS	RGGI CO ₂ Allowance Tracking System
FADP	Federal Act on Data Protection	RGGI, Inc.	Regional Greenhouse Gas Initiative, Inc.
FOEN	Switzerland Federal Office for the Environment	SECO	Switzerland State Secretariat for Economic Affairs
GATS	General Agreement on Trade in Services	SWG	Staff Working Group
GATT	General Agreement on Tariffs and Trade	UK	United Kingdom
GHG	Greenhouse Gas	UNFCCC	United Nations Framework Convention on Climate Change
IAP₂	International Association of Public Participation	USD	United States Dollar
ICAP	International Carbon Action Partnership	WCI	Western Climate Initiative
IETA	International Emissions Trading Association	WCI, Inc.	Western Climate Initiative, Inc.
IPCC	Intergovernmental Panel on Climate Change	WTO	World Trade Organization
IPM	Integrated Planning Model		
IPO	Information Protection Ordinance		
ISO	International Organization for Standardization		
ISO-NE	Independent System Operator New England		
ITMOs	Internationally Transferred Mitigation Outcomes		



A Guide to Linking Emissions Trading Systems

Synthesis



International Carbon
Action Partnership

CHAPTER ONE

Introduction to the Linking Guide

Emissions trading is a cost-effective way of reducing greenhouse gas (GHG) emissions that are the main cause of climate change. Emissions trading systems are operating across four continents, regulating about 15% of global GHG emissions.¹ A number of systems are also being considered in major economies in Southeast Asia and Latin America. An emissions trading system (ETS) (also known as “cap and trade”) is a market instrument that puts a price on emissions. A total cap on the number of emissions is set in one or more sectors of the economy and the government distributes tradable allowances among the regulated entities. Each regulated entity must submit enough allowances to cover their emissions.² Under an ETS, emissions are reduced where it is most cost effective to do so. Regulated entities have the option of reducing their own emissions, trading with other entities, or—depending on the design of the ETS—purchasing offset credits.

One major advantage of emissions trading is that systems can be linked to create a common carbon market. Once linked, allowances in one system can be used in another for compliance, which has several advantages. For example, a bigger market opens up more (and potentially cheaper) reduction options, which in turn decreases the overall mitigation costs for the linked market. It also creates a level playing field for companies across the linked market and signals climate change leadership. However, as linking shifts the initial allowance price and may change the initial design of the jurisdiction’s ETS, this can create new “winners and losers”, due to the fact that certain companies, households, or sectors may be better off than others.

It may also raise concerns about the level of emissions being reduced in the different jurisdictions that are part of the linked system. Finally, linking can also diminish a jurisdiction’s capacity for market intervention, because operating a joint market will require a certain level of coordination and cooperation with the linking partner.

Several linked markets currently operate around the world. In North America, the Western Climate Initiative (WCI) links California and Québec, while a separate linked system, the Regional Greenhouse Gas Initiative (RGGI), brings together several states in Northeast US. In Japan, the prefectures of Tokyo and Saitama have linked their systems, and in Europe, the European Union (EU) and Switzerland have signed a Linking Agreement (pending ratification at the time of publication). Furthermore, many jurisdictions that have, or are developing, an ETS are exploring the possibility of linking or other forms of cooperation through bilateral talks or through broader forums such as the Pacific Alliance.

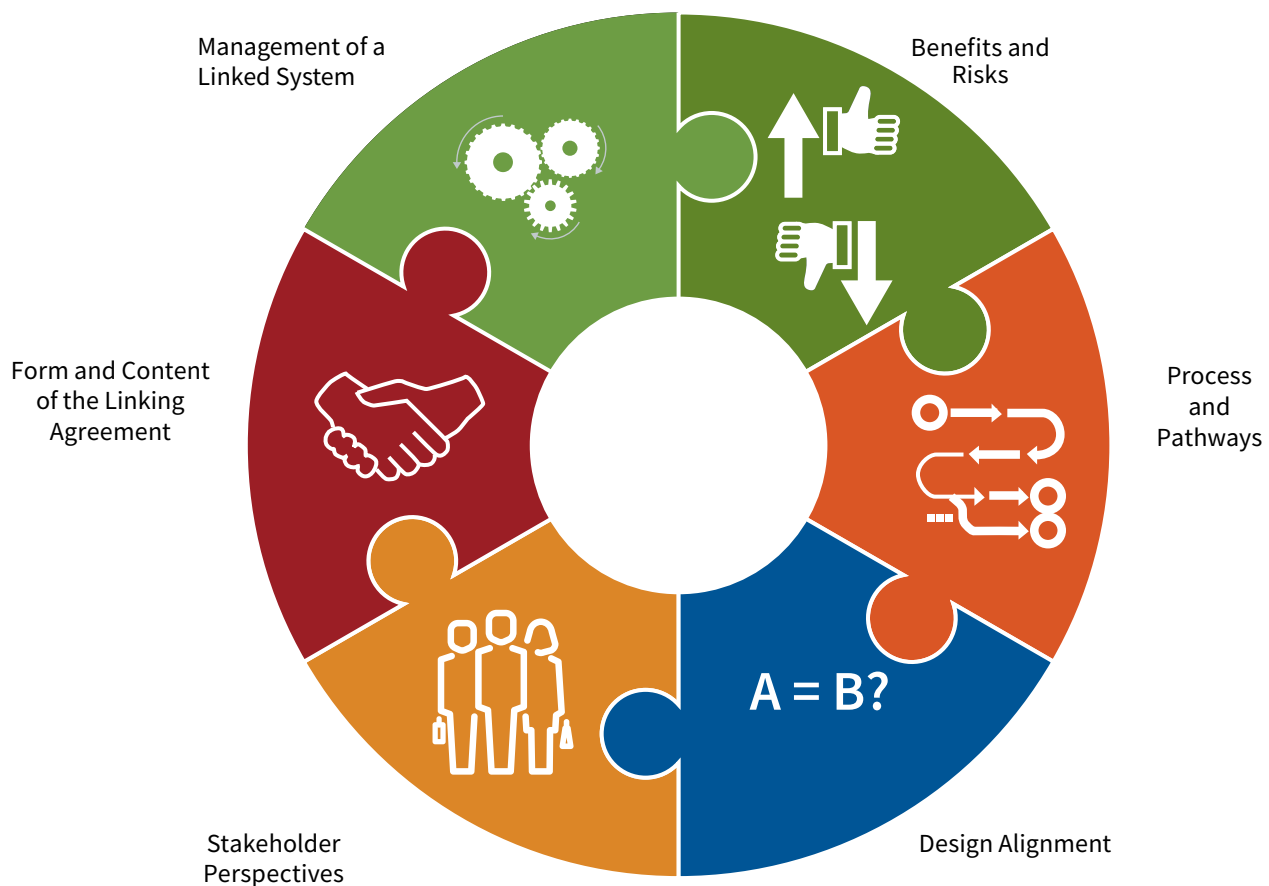
Linking can occur on a spectrum from gradual alignment to restricted linking to full, two-way linking. This Guide largely focuses on full, two-way linking, where allowances from both systems can be used for compliance. However, mitigation may also need to be attributed and accounted for across the linked market under the Paris Agreement if allowances cross national borders. At the time of publication, the rulebook on cooperative approaches (article 6 of the Paris Agreement) is still being negotiated. Policymakers will need to consider the resulting international framework and how it relates to their linked market if it involves the international trading of allowances.

¹ International Carbon Action Partnership (ICAP, 2018b).

² The Guide does not focus on baseline-and-crediting systems, which set an intensity level for certain emitting activities against a baseline (e.g., against Business-as-Usual (BAU) emissions). Although it does not set a fixed cap on the total number of emissions, regulated entities that reduce below the baseline can generate tradable credits.

The Guide builds on the existing experiences with linking in order to identify practical lessons for policymakers who are interested in linking or emissions trading more broadly. The main arguments for and against linking are outlined at the outset (chapter 2). Following this, potential pathways to implement a link are considered (chapter 3). In order to operate a functioning and robust linked carbon market, specific ETS design elements need to be discussed and aligned (chapter 4). Throughout the linking process, policymakers also

have to consider how and when to involve stakeholders (chapter 5). Once a common understanding has been reached, a linking agreement is often concluded to provide a shared understanding and common basis for the linked market (chapter 6). To ensure the market runs smoothly, joint management and coordination structures may need to be adapted or established (chapter 7). The Guide closes with the future outlook for emissions trading and potential pathways to a global carbon price (chapter 8).



CHAPTER TWO

Potential Benefits and Risks of Linking

The potential benefits and risks of linking can be grouped into three categories: economic, environmental, and political/administrative.

- **Economic benefits:** by linking systems to create a larger carbon market, emissions can be reduced more cost efficiently as it opens up more (and potentially cheaper) mitigation options. With more buying and selling of allowances, this makes trading more efficient and increases market liquidity. A larger market can also better absorb external shocks, reducing daily or long-term price volatility. Finally, it also creates a level playing field in that all regulated entities in the linked market are subject to the same allowance price, which minimizes the risk that these companies relocate production (“carbon leakage”).³
- **Environmental benefits:** because linking lets linking partners achieve a reduction target at a lower cost, it could encourage partners to set more ambitious targets. Increasing climate ambition can also be more politically feasible when moving forward as a group than as a single jurisdiction.
- **Political/administrative benefits:** linking can be used to demonstrate climate change leadership to create political momentum on climate action both on the international and domestic level. On an administrative level, linking can result in more streamlined processes that reduce costs for both operating the system and for companies complying with the ETS.

However, linking also brings several challenges.

- **Economic risks:** even as it improves resilience to external shocks by broadening the market, some shocks or developments in one linked partner jurisdiction will also be felt in the other linked partner jurisdiction(s).
- **Environmental risks:** if the linking partner’s ETS is not sufficiently robust, this can undermine the system robustness and credibility of the whole market. Furthermore, linking may incentivize partners to set weak reduction targets in order to sell more allowances to their linking partner as this would generate more capital flows to their own jurisdiction.
- **Political risks:** in an ETS, regardless of whether it is linked or not, spending will shift from high- to low-carbon intensive goods and services; as well, certain groups (industries, sub-sectors, firms, and households) will be affected in different ways. Some groups will end up better off than others, giving rise to “distributional concerns”. Furthermore, when systems link, there will be capital flows from the higher-priced system to the lower-priced system until prices in both of the linked systems equalize. Depending on the scale of these transfers, this could attract political opposition. Finally, if certain design elements such as offsets are not aligned, they can automatically propagate from one system to the other.

If certain risks cannot be avoided, policymakers may consider restricted linking as an initial or alternative option to full, unrestricted linking.

³ However, this only addresses the risk within the linked market and does not alleviate any leakage risk to third-party jurisdictions with a lower or no allowance price.

CHAPTER THREE

Process and Pathways to Implementing Linking

There is no single pathway to implementing a linked market. However, past experience suggests three considerations will shape the process for establishing a linked market.

- **The relationship with the linking partner:** fostering a close relationship and a supportive political environment in both jurisdictions will be critical, as close cooperation will be necessary between the linking partners well in advance of the operationalization of the link. Familiarity with the linking partner's ETS and broader climate policy framework will also facilitate the linking process.
- **The level of ETS design alignment:** the more closely systems seek to align or harmonize the design of their respective systems, the more complex discussions on alignment are likely to be. This process may be easier if systems have been designed with linking in mind from the beginning (i.e., upfront coordination on ETS design or modeling an ETS on a pre-existing system). However, design alignment, although preferred, may not be necessary in order to link two systems.
- **The type of link:** the type of link (e.g., full two-way linking, one-way linking, restricted linking) that partners choose will affect the complexity of the linking process.

Based on these considerations, the linking process typically follows three phases: genesis, negotiation, and

implementation. During the **genesis phase**, policymakers assess the possibility of linking and the elements of a successful link. Political leadership is key during this phase, and high-level public announcements or declarations of intent to establish a link can help “kick start” the process.

During the **negotiation phase**, policymakers need to establish a linking agenda, as well as gain a deeper understanding of the linking partners' emissions trading systems and broader regulatory framework. An overall structure for negotiations, how these issues will be addressed, and the relevant bodies that should be involved in the linking negotiations all need to be determined. Analytical work and modeling may also be commissioned to give an indication of potential impacts and implications of linking.⁴

Finally, once the negotiations have concluded, the **implementation phase** covers the time from when the technical details of the linking agreement have been resolved to the operationalization and launch of the linked market. This last step is important because it gives jurisdictions the legal certainty that the linking partner will respect the provisions in the linking agreement, as this agreement itself may not be legally binding. To manage the linked market, partners may also establish new or adjust existing institutions. The linked market then becomes effective as soon as allowances can be traded across the linked system and these transactions are adequately recorded in the registry/registries.

⁴ Beuermann, Bingler, Santikarn, Tänzler & Thema, 2017.



CHAPTER FOUR

Design Alignment

In considering the core trade-offs when making ETS policy alignment decisions, policymakers can use the following three criteria:

- **System robustness:** policymakers should have a clear understanding of what is being measured and how it is being measured in their linked market in order to guarantee that a tonne of emission reductions in one jurisdiction is the same as one tonne in the other. Robust Monitoring, Reporting and Verification (MRV) processes and accounting are critical in this regard. Partners must also have sufficient capacity to monitor and enforce (i.e., surrender obligations, carry out market oversight, and impose penalties) their respective systems to ensure compliance.
 - **Important design elements:** the accounting and compliance framework of both linking partners must be robust—this includes their MRV processes, registries, and penalties. The cap-setting process, the existence and design of a price floor and price ceiling, as well as the use of flexibility mechanisms such as borrowing and offsets, will also affect system robustness.
- **Environmental ambition:** linking partners should be confident that their partner's ETS will drive a certain level of mitigation. As the environmental ambition of the system is largely determined by the cap, the stringency of that cap (however this is assessed) and the reduction pathway it sets out will be critical factors for consideration.
 - **Important design elements:** partners need to have a solid understanding of, and be satisfied with, their partner's cap—particularly if there is a link between an ETS with an absolute cap and one with an intensity-based target. In addition, market intervention mechanisms such as price floors and other adjustment mechanisms will affect environmental ambition, and if left to operate without any additional alignment or coordination, may have additional side effects on the linked market. Borrowing and the use of offsets could also affect when and where mitigation will occur.
- **Possible side effects:** certain design elements may have possible side effects in a linked system. Differences in design elements may, for example, give rise to competitiveness or fairness concerns if one system is perceived to have a competitive advantage over the other. However, these concerns exist regardless of whether or not systems choose to link. Differences in design may be beneficial, such as increasing capital flows to one system and increasing access to lower-cost mitigation options for the other system.
 - **Important design elements:** if certain design elements are not aligned in this category, this can give rise to two main concerns—competitiveness and automatic propagation. Differences in coverage and allocation raise the most significant risks in terms of potential competitiveness concerns. Inclusion thresholds, as well as opt-in/opt-out provisions, should also be considered. Second, there is a risk that flexibility provisions (e.g., offsets, banking, and borrowing), as well as any price- or quantity-based controls (e.g., price floors, price ceilings, quantity mechanisms, and other adjustment mechanisms) from one linking partner are automatically propagated to the other. This would mean such provisions would exist in a system that does not have any. In a linked market where linking partners have their own flexibility provisions, the less stringent provisions may undermine the conditions in the other system.

CHAPTER FIVE

Stakeholder Perspectives

Linking will affect different groups of stakeholders in different ways. Engaging the stakeholders in the linking process can help ensure the success of a linked market by providing an opportunity to build support, draw on outside expertise, and address stakeholders' concerns; as well, it improves the transparency and inclusiveness of the policy. This builds trust, credibility, and mutual understanding during the linking process.

The question of **when** the stakeholders become engaged in the linking process will depend on:

- the linking negotiation process;
- the stage of development of that jurisdiction's ETS;
- the specific topic under discussion; and
- the jurisdiction's legal framework and culture of stakeholder engagement.

Generally, there are two windows of opportunity for stakeholder consultation in the context of linking: during discussions on whether or not to link, and later during the implementation of the linked market.

In engaging with stakeholders, a balance should be struck between inclusiveness, administrative capacity, and effectiveness, taking into account three factors: the purpose of the engagement, the type of policy development, and available resources. Stakeholder engagement does not necessitate public consultation for every single step and/or process. Rather, engagement is about ensuring stakeholders are involved in the key choices and decisions that affect everyone, where they can form legitimate views and have a forum to express those views.

In general terms, when communicating with stakeholders on linking, it is useful to highlight the following three areas of best practice:

- **Clarity on the role of consultation:** a commitment by policymakers to listen to the views of stakeholders before decisions are made, alongside clarity on the stakeholder process and treatment of stakeholder responses, can facilitate credibility and transparency of the consultations. The engagement should also feature clear objectives, requirements, and procedures in line with statutory provisions, thereby aligning expectations from the start.
- **Targeted and coordinated communication:** transparent and accessible communication, adjusted to the concerns and knowledge level of the respective stakeholder groups, can be particularly helpful because emissions trading is a complex and technical topic. Coordinated and unified messages from the linking partners' governments will also help avoid confusion, especially if several government bodies are involved.
- **The messenger:** external experts can be used to facilitate workshops or conduct independent analyses as government representatives may not always be the most appropriate or effective messenger.

How stakeholders in a system view linking will depend on the role they play in the ETS, as well as how they will be affected by the linked market (e.g., any distributional consequences). In previous linking negotiations, stakeholders (e.g., government members, companies, industry associations, environmental groups, non-governmental organizations (NGOs), and think tanks) have focused on how linking affects compliance costs, their jurisdiction's overall mitigation targets, as well as the extent to which abatement takes place in their respective jurisdiction.

CHAPTER SIX

Form and Content of a Linking Agreement

Linking is typically formalized through linking agreements. A linking agreement can help solidify the partnership and give partners a shared understanding of common goals and coordination needs. Once concluded, linking agreements are followed in each jurisdiction by the adoption of reciprocal legislation or regulations (as required) in order to implement the link and make any amendments to their respective ETS design.

Linking agreements can take different **forms**. International treaties provide high legal certainty, but can be very time-consuming. Non-binding arrangements such as Memoranda of Understanding

(MoUs), although less formal, can be faster to conclude and offer more flexibility if they need to be amended.

The **content** of the linking agreement will generally depend on the form of the agreement and the type of link. Not every detail of the link or the design elements for the linked market needs to be set out in the agreement itself. The linking agreement can establish the wider framework, such as: the objectives and principles governing the link; the institutions and procedures to operate and manage the linked market; and the suspension, termination, and entry into force of the agreement. Operational details can be outlined in the respective legal frameworks of the linking partners.



CHAPTER SEVEN

Management of the Linked Systems

An ETS will have institutions and mechanisms in place to ensure the smooth functioning of the market. Although these structures will largely be retained when an ETS is linked to another, they may be altered or expanded (or new structures may be added) to allow linking partners to work together to ensure the routine operation of the linked market.

In a linked market, four areas routinely require coordination.

- Linking partners need to coordinate **how information is shared**; this refers both to the flow of information between the linking partners and to the release of information to market participants and the public. Linking partners also need to ensure that private, commercially sensitive, and confidential information is protected.
- **Coordinated and effective market oversight** is critical to ensure that the common market functions properly. This may include ensuring robust accounting across the jurisdictions, preventing any market misconduct, and safeguarding the system against fraud and other forms of market manipulation.
- The **operation of joint elements** of the linked market, such as the use of a common registry or auctioning platform, needs to be coordinated.
- Linking partners should ensure that they have established **dispute resolution procedures** to mediate any disagreements or issues among market actors and between the linking partners.

As systems change and evolve over time, exchange or consultation between the linking partners is important. System reviews and reform may have a significant impact on the linked market, and some consultation between the partners can ensure that any changes result in minimal disruptions to the linked market. However, the extent to which the linking partner is involved in system reviews and reform process varies depending on the nature of the relationship.

Linking partners may also need to coordinate their response(s) to unforeseen events and/or sudden changes to the linked system or the environment it operates in, such as an economic crisis leading to changes in the carbon price, or drastic shifts in political circumstances.

Moreover, **coordination mechanisms** are themselves likely to unfold in a dynamic and evolutionary process, much like the underlying systems.⁵ Jurisdictions can coordinate their linked market using a variety of structures, ranging from informal to formal set-ups. It is likely that informal, technical coordination will happen continuously, while exchanges and decision making on the political level are likely to occur more formally and less frequently. Structures established during linking negotiations can be adapted to form the bodies that manage the linked system. Jurisdictions may also choose to outsource part of their responsibilities by setting up a **separate institution** to take over a share of these tasks, as is the case in both the RGGI and WCI carbon markets. Experience suggests that such an institution may provide useful benefits,

⁵ Tuerk, Mehling, Flachsland & Sterk, 2009.

such as decreasing operational costs, minimizing the administrative burden, and depoliticizing the management of the linked market.

The management of the linked system may also have to address a situation in which one or more partners decide **to delink**. Linking partners should think through the potential implications of delinking (preferably when the linking agreement is being developed), and actions that may be required once delinking occurs given the decision by one system to leave a linked carbon market will affect the rest of the market. Three major considerations include:

- **Treatment of allowances:** choices on how to treat the allowances from a system that is no longer linked can affect market behavior prior to and after delinking takes place. The remaining linked jurisdictions need to decide whether their entities

will still be able to trade and use allowances from the delinking jurisdiction for compliance purposes.⁶

- **Cap adjustment:** if linking partners have a joint cap, then this will have to be adjusted because the volume of the cap will be smaller as a result of delinking. The timing of delinking may influence the adjustment of the cap and other relevant elements. In general, it is more complicated to calculate such adjustments within a compliance phase rather than at the end of it.
- **Joint institutions:** a delinking jurisdiction will most likely no longer participate in the decision-making process and respective bodies. Joint institutions may require adjustments, both in terms of structure and of budgetary arrangements.

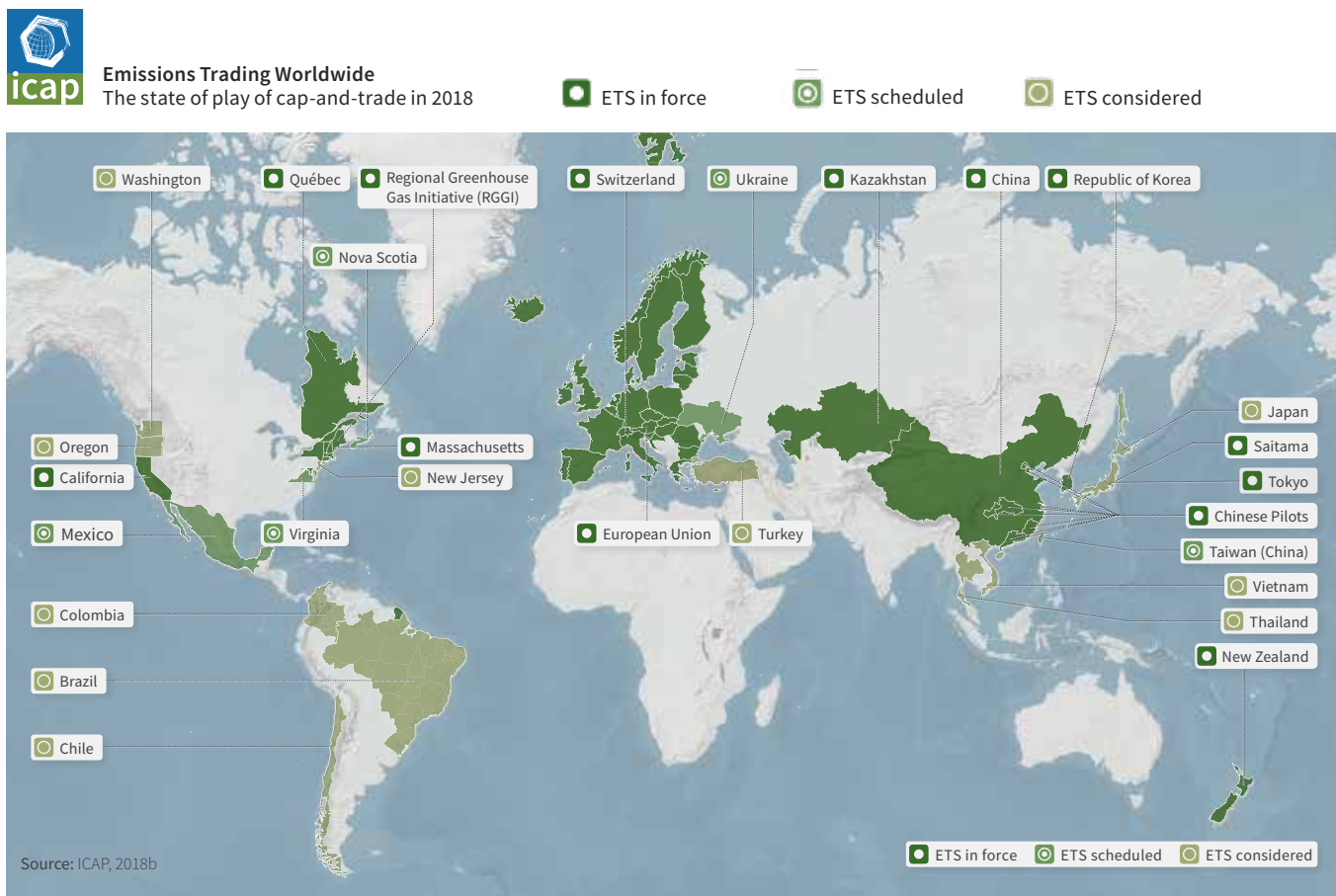
⁶ Görlach et al. (2015).

CHAPTER EIGHT

Looking to the Future

As countries around the world consider how their Nationally Determined Contribution (NDC) targets can be reached and ramped up to meet the long-term goals of the Paris Agreement, international cooperation can be a means of achieving this in a cost-effective manner. Emissions trading offers an attractive policy tool to achieve this. The growth of emissions trading systems and their emerging networks could lead to multiple

carbon hubs (or “carbon clubs”) that bring jurisdictions committed to carbon pricing together. Over time, they can jointly move from mutual learning to policy alignment and finally linking. Over time, linking these bottom-up, fragmented instruments can help shift the world toward a single, global carbon price, assuaging competitiveness concerns and allowing mitigation to take place on a global scale at the lowest cost.



The background of the cover features several interlocking puzzle pieces. The pieces are in shades of blue, grey, and dark grey, arranged in a pattern that suggests a complex system or a puzzle being solved.

A Guide to Linking Emissions Trading Systems

Report



International Carbon
Action Partnership

CHAPTER ONE

Introduction to Linking Guide

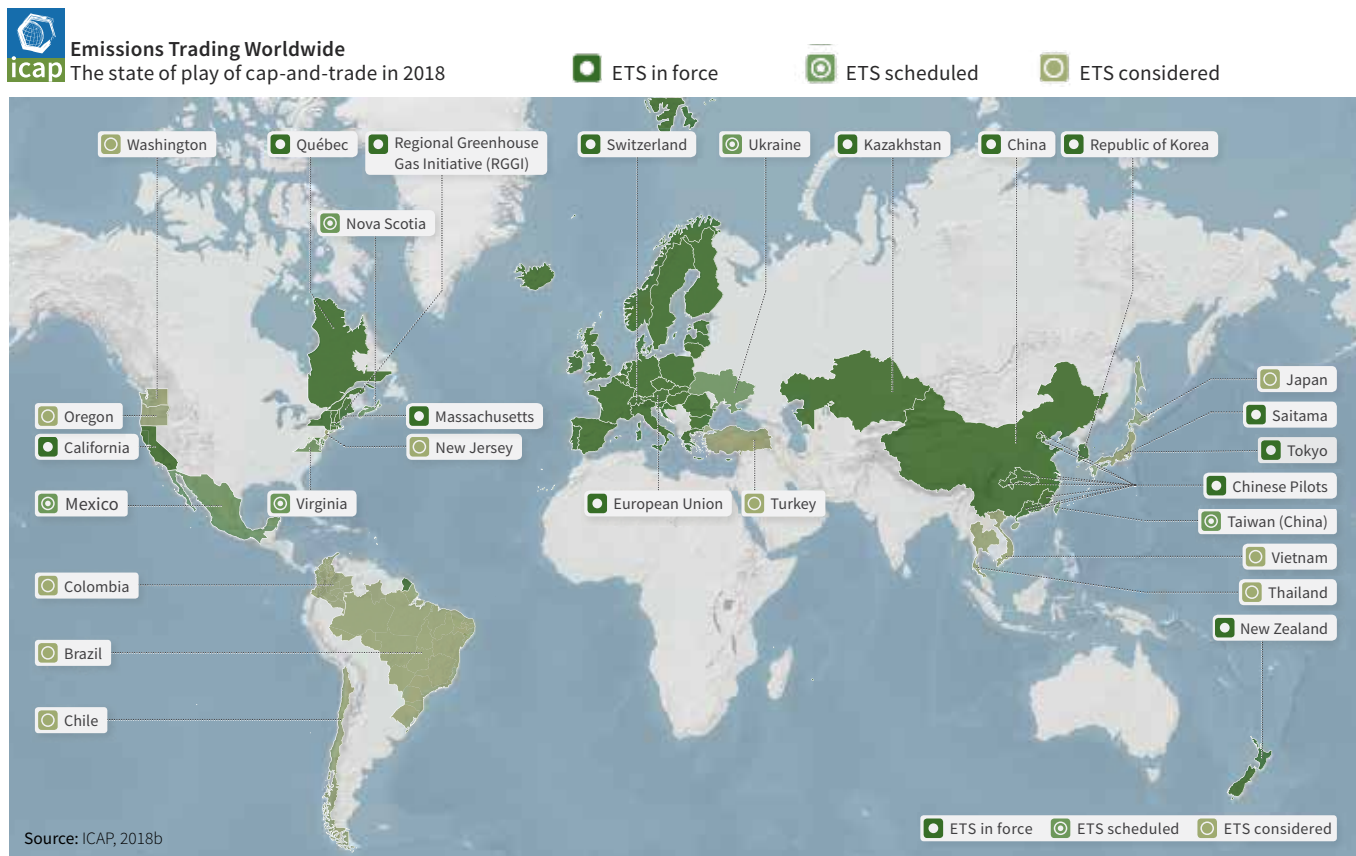
1.1 CONTINUED GROWTH OF EMISSIONS TRADING

Emissions trading is a cost-efficient way of reducing greenhouse gas (GHG) emissions that are the main cause of climate change. As of 2018, there are 20 emissions trading systems in operation around the world, regulating 15% of global GHG emissions¹ (see Figure 1.1). An emissions trading system (ETS) (also known as “cap and trade”) is a market-based instrument that puts a total cap on the number of emissions in one or more sectors of the economy. Each compliance entity must surrender allowances and credits (hereafter collectively referred to as allowances) sufficient to cover their emissions during a compliance period. Entities may buy or sell allowances, as well as trade them with other entities.

This enables emissions reductions to be achieved where they are least expensive. Since the launch of the first major ETS for GHG emissions in 2005, emissions trading has evolved into a proven policy instrument that has been adapted to drive mitigation in a wide range of economic profiles and political conditions. The number of systems is set to grow with many more systems scheduled and under consideration in major regions, including Southeast Asia and Latin America.

One of the major advantages of emissions trading is that systems can be linked together to create larger and more robust carbon markets. When systems are linked, allowances of one system can be used in another for compliance purposes.² A bigger market opens up

FIGURE 1.1: Map of emissions trading systems operating and under consideration around the world



¹ International Carbon Action Partnership (ICAP, 2018b).

² One could argue that the EU is “linked” with Norway, Iceland, and Liechtenstein. However, all three countries adopted the European Union Emissions Trading System (EU ETS) as part of the broader European Economic Area and Europe Free Trade Association (EEA-EFTA). Nevertheless, some of the experiences of these countries, in particular Norway’s initial one-way link with its national system and the EU ETS, offer lessons that may be of use to policymakers and is therefore considered in the Guide.

more (and potentially cheaper) reduction options, which in turn decreases the overall mitigation costs for the linked market. It also creates a level playing field for companies across the linked market and signals climate change leadership. However, as linking shifts the initial allowance price and may change the initial design of the jurisdiction's ETS, this can shift the economic burden of the carbon price on consumers and companies. It may also raise concerns about the level of emissions being reduced in the linked system. Finally, linking can also diminish a jurisdiction's scope for market intervention, as operating a joint market will require a certain level of coordination and cooperation with its linking partner.

1.2 FIRST EXPERIENCES WITH LINKING

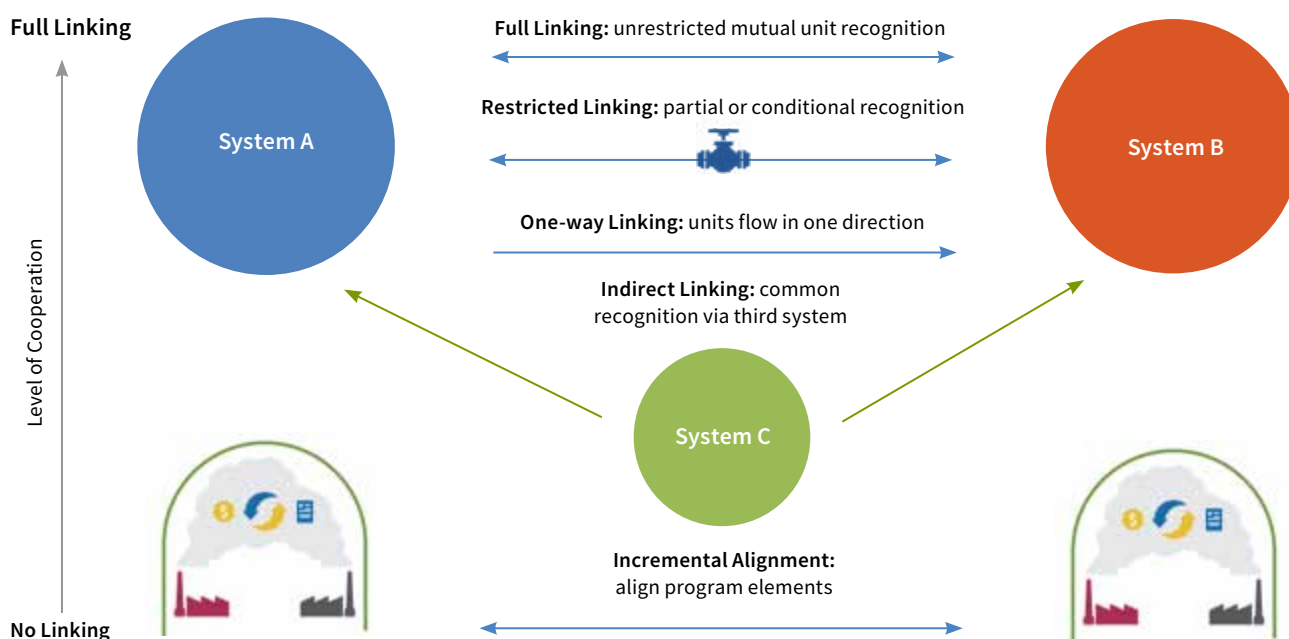
Several systems now have practical experiences with linking. Common markets are operating in North America, with the Western Climate Initiative (WCI)³ across states and provinces of the US and Canada; a separate linked system, the Regional Greenhouse Gas Initiative (RGGI) operates on the US East Coast.⁴

In Japan, the prefectures of Tokyo and Saitama have linked their systems, while Switzerland and the European Union (EU) have recently signed a Linking Agreement that is pending ratification at the time of publication. Furthermore, many jurisdictions that have, or are developing an ETS are exploring the possibility of linking or other forms of cooperation through bilateral talks or through broader forums like the Pacific Alliance.

1.3 FOCUS OF THE LINKING GUIDE

This Guide builds on the linking research to date and leverages the existing experiences from different jurisdictions so as to generate practical lessons for policymakers interested in linking. **Although linking is also possible among multiple systems, the Guide is largely focused on issues that arise with two-way linking.** However, given the multiplicity of approaches in ETS design and operation, as well as emerging forms of international cooperation, different types of linking will also be considered, such as restricted or one-way linking (see Figure 1.2).⁵ The most common type of

FIGURE 1.2: Different types of linking



³ In June 2018, the Progressive Conservatives won the Ontario general election on a political platform that included ending the province's cap-and-trade program and withdrawing from the link with California and Québec. At the time of publication, the newly elected government introduced and passed a regulation to revoke the existing regulation on cap-and-trade and suspended all Ontario entity trading and access to the market system accounts. For more, see box 7.9.

⁴ **Note:** Both the WCI and RGGI-participating states have established non-profit corporations to support the creation and implementation of their respective linked carbon markets (WCI, Inc. and RGGI, Inc. respectively). Unless explicitly specified with "Inc.", all mentions of WCI or RGGI refer to the carbon markets and not the corporations.

⁵ ICAP (2016).

linking discussed in the literature is full, two-way linking in which allowances from both systems are mutually recognized for compliance. Such links are typically understood to be “two-way”, which means that units can flow to and from both partners. In this scenario, the political and economic conditions of either linking partner, as well as certain design elements, are very likely to affect conditions in the other partner’s jurisdiction.

Partners may choose to restrict this mutual recognition, which is known as “restricted linking”. Linking can be restricted through the use of transfer quotas that limit the type and/or number of allowances from a different jurisdiction that can be used for compliance. Partners can also implement exchange rates or discount rates that set the value of a unit from outside the jurisdiction (for more, see section 2.7). Alternatively, restricted linking could take place in the form of a one-way link where allowances would only flow in one direction. Although restricted linking may not deliver all the benefits of full linking, it can give partners greater control over their own systems, as well as protection against some of the potential risks of full linking.

Restricted linking can also be implemented as a first phase toward full linking. A one-way link with the European Union Emissions Trading System (EU ETS) was

proposed for the Australian Carbon Pricing Mechanism (CPM) as an interim step before the full, two-way link. Before Norway adopted the EU ETS, it also had a one-way link between its ETS and the EU ETS, which let regulated entities in Norway use EU allowances (EUAs) for compliance. Finally, gradually aligning ETS design features can also be seen as a form of “linking by degrees” that can give partners some of the initial benefits of linking.⁶

1.4 INTERNATIONAL ACCOUNTING UNDER ARTICLE 6 OF THE PARIS AGREEMENT

Linking systems result in allowances being traded across national borders. If this is the case, this may affect how countries account for their emissions under their Nationally Determined Contributions (NDCs) under the Paris Agreement (see Box 1.1). This is particularly important as several countries are using emissions trading to achieve targets outlined in their NDCs. **When linking systems internationally, linking partners need to consider how the international transfer of allowances is accounted for in order to demonstrate their achievement of NDCs.** A country that is a net receiver of allowances, for example, may want to ensure that these can be counted toward the achievement of

BOX 1.1: Article 6 of the Paris Agreement

For carbon markets, the most relevant provision of the Paris Agreement is Article 6 – which gives Parties the opportunity to cooperate in order to achieve their NDCs. In the context of linking ETS, Article 6.2 is of particular relevance. It states:

“Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Agreement”.^a

By allowing for the use of “internationally transferred mitigation outcomes” (ITMOs), Article 6.2 enables Parties to claim, towards their NDC, mitigation action that took place in another Party. Parties engaging in ITMO transfers are to ensure, among others, that ITMOs are not double counted. In other words, they are to ensure that ITMOs are only counted towards the achievement of one NDC, notably the Party to which the ITMO was transferred (rather than the Party in which the mitigation action took place). Parties are also to “promote sustainable development” and “ensure environmental integrity” in ITMO transfers.

Rules for the operationalization of Article 6.2 are currently being negotiated under the UNFCCC. Issues to be determined include the definition of “ITMO”, as well as accounting provisions. Currently, no agreement exists among Parties on whether the guidance for the operationalization of Article 6.2 will include elements on sustainable development and environmental integrity. Issues such as the use of a common reporting framework and the use of an international registry and tracking system also need to be resolved. A rulebook is expected to be finalized at the 24th Conference of the Parties in Poland in 2018.

^a UNFCCC (2015).

⁶ Burtraw, Palmer, Munnings, Weber & Woerman (2013).

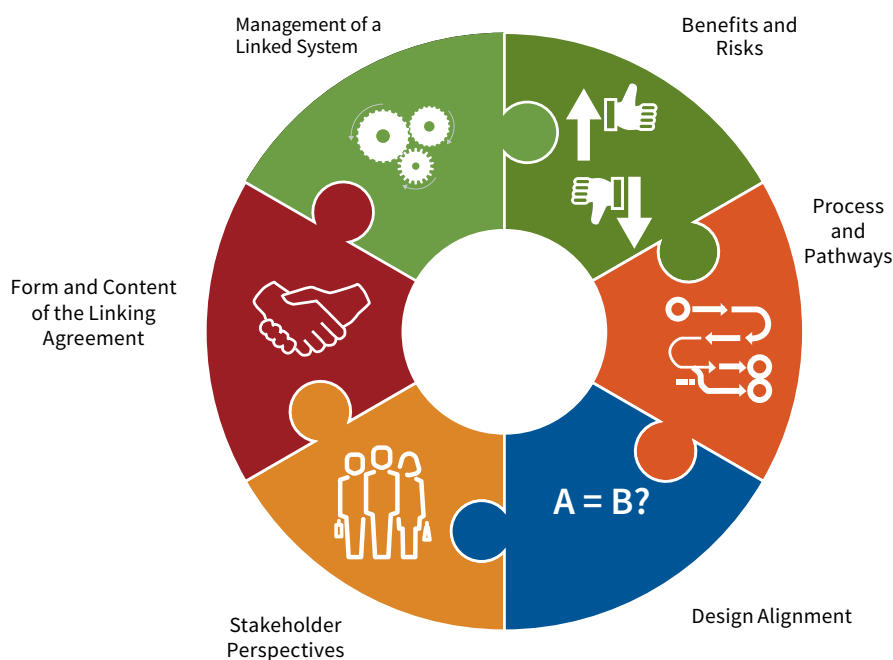
its NDC target. In the EU-Swiss Linking Agreement, both parties agree to account for the flow of allowances in line with the principles and rules of the United Nations Framework Convention on Climate Change (UNFCCC). The mechanism for this will be outlined in an Annex to the Linking Agreement at a later stage.

If *sub-national* jurisdictions link their systems and engage in international trading, then this may also affect how their countries account for transferred allowances towards the achievement of their NDCs.⁷ California and Québec, for example, would need to report net flows of units between their systems to their respective federal governments. The issue would be further complicated should the United States withdraw from the Paris Agreement,⁸ as it is not clear how accounting could be done under the Paris Agreement if one of the countries involved in the transfer is not a Party to the Paris Agreement.

Discussions on possible linkages across systems will likely proceed independently of any UNFCCC developments. As outlined in chapter 4, many technical issues related to the certainty of accounting will also be addressed in linking discussions, as linking partners seek to ensure a well-functioning, robust linked market. Nevertheless, international transfers may have to be consistent with international guidelines agreed upon by the Parties under the UNFCCC.

1.5 STRUCTURE OF THE LINKING GUIDE

The Guide covers the whole lifecycle of linking, starting from an identification and articulation of the possible benefits and risks of linking by potential linking partners (see Figure 1.3). Linking negotiations will involve trade-offs among different market designs and policy objectives (Chapter 2). The various processes and pathways to linking are then mapped (Chapter 3). Typical steps in the genesis, negotiation and implementation phases of implementing a link are covered, although this will likely vary on a case-by-case basis. If a decision to link is made, then specific design elements may require alignment between the linking partners (Chapter 4). Involving stakeholders in linking processes is also key to developing a robust, linked market (Chapter 5). Once a link has been agreed upon, a linking agreement is often concluded to provide a common basis and shared understanding for the linked market (Chapter 6). Once a system is linked, coordination procedures and institutions may need to be established to maintain and manage the common market (Chapter 7). The Guide concludes with an outlook on the future growth of emissions trading through regional hubs as a potential pathway to establishing a global carbon price (Chapter 8).



⁷ Countries may or may not decide to reflect these flows in their NDC accounting.

⁸ On 4 August 2017, the US communicated its intent to withdraw from the Paris Agreement to the UNFCCC. However, this process would take several years, with the complete withdrawal occurring in November 2020 at the earliest. Given this coincides with the next US federal elections, the final decision on US withdrawal from the Paris Agreement would be contingent on the outcome of these elections. For more see US Department of State (2017). Communication Regarding Intent To Withdraw From Paris Agreement. Media Note. 4 August.

CHAPTER TWO

Potential Benefits and Risks of Linking

2.1 INTRODUCTION

Linking offers several potential benefits, but it also poses risks. Given that a significant body of literature that outlines these relevant considerations already exists, this chapter does not aim to exhaustively cover all the issues. Rather, it focuses on the main potential benefits and risks of linking (see Table 2.1), drawing on academic research, as well as the experiences of jurisdictions that have engaged in linking or linking negotiations.

2.2 INITIAL CONSIDERATIONS

Before assessing the potential benefits and risks of linking, analysts must bear in mind three initial considerations.

- Linking will involve trade-offs among multiple benefits or between a benefit and minimizing a risk.
- Economic conditions of the linking partners will influence the extent to which the benefits of linking are realized or the risks are avoided.
- The relationship with the linking partner may be more important than achieving a greater number of benefits.

These are discussed in greater detail below.

2.2.1 Trade-offs

The extent to which the potential benefits and risks materialize from linking depends on the priorities and the characteristics of the linking partners. First, there may be trade-offs among multiple benefits or between a potential benefit and the prevention of a potential risk. For instance, linking a high-priced system (system A) to one that has a low price (system B) would lower the compliance cost for entities in the higher-priced system by opening access to cheaper allowances. However, from an environmental perspective, this difference also means that abatement activities could shift from system A to system B, resulting in less domestic mitigation in system A.⁹ Although this may be more cost efficient for the linked market as a whole, the lower allowance price in system A could lock in carbon-intensive technologies or infrastructure that could hinder that jurisdiction's ability to achieve more ambitious emissions reductions in the future. The scale of the shift in mitigation and capital outflow from system A to B may also raise political concerns.¹⁰ Bearing these risks in mind, linking partners will have to consider whether it is worth pursuing linking. They may need to prioritize some benefits over others, amend the design of the linked market, or adopt restrictions on linking to meet their priorities.

TABLE 2.1: Potential benefits and risk of linking

	Potential Benefits of Linking	Potential Risks of Linking
Economic	Increases cost efficiency Increases market liquidity and ability to absorb shocks Creates an even playing field and reduces leakage	Exposure to external shocks
Environmental	Increases environmental ambition	Linking to a system that is not equally robust Incentivizes weak reduction targets
Political/Administrative	Creates momentum for climate action and leadership Streamlines administrative processes	Distributional concerns Scale of capital flows Contagion of design features if not harmonized Partial loss of domestic control over the system

⁹ Including the resultant co-benefits of domestic mitigation, such as improved health outcomes and new employment opportunities.

¹⁰ Green, Sterner & Wagner (2014).

2.2.2 Economic conditions

Second, economic conditions—such as market size and several other factors (e.g., the broader climate policy mix)—are also relevant to the risks and benefits of linking. Smaller systems with few market participants, such as Switzerland or Norway, may be highly motivated to link in order to achieve market liquidity and price stability. New Zealand’s system was also designed to link with the Australian CPM. Systems may be willing to compromise on a number of issues, such as reduced unilateral control and the use of certain design features, in order to increase their market liquidity. Conversely, systems that are significantly larger than those of their partner may not be as concerned about the potential risks of linking because developments in the larger market are more likely to dictate events in the linked system. For instance, had the link between the EU and Australia gone ahead, the allowance price would have tracked closely to the EUA price. To give another example, Switzerland will not participate in the EU ETS’ Market Stability Reserve (MSR) nor adopt an equivalent mechanism. Given that the Swiss market is significantly smaller than the EU ETS, this will likely not undermine the effectiveness of the MSR (see Chapter 4).

2.2.3 Relationship with linking partner

Other issues—such as the partners’ shared history of cooperation, familiarity with one another’s regulatory and political processes, and their broader climate policy frameworks—also will have a bearing on the potential benefits and risks of linking.¹¹ Although linking is often described as a means to achieve more cost-efficient emissions reductions, ultimately, the reality of linking

ventures reflects a more complex decision by policy-makers to achieve a number of benefits. Most links to date have taken place between (often geographically proximate) jurisdictions with close pre-existing political and economic ties.¹² When linkages involve proximate partners with similar economies, they still yield the benefits of political cooperation and market depth/liquidity, and may reduce the problem of leakage, but may produce more limited cost-efficiency gains from trade across jurisdictions.

2.3 ECONOMIC BENEFITS OF LINKING

The classic arguments for linking are based on increased economic efficiency, including making mitigation more cost efficient, increasing liquidity and price stability, as well as addressing some competitiveness concerns.¹³ These potential benefits are also echoed by the European Commission as a rationale for linking.¹⁴ Such benefits are discussed in this section. Linking can, moreover, deliver environmental benefits, such as encouraging more ambitious climate policies and goals, as well as political and administrative benefits such as climate leadership and streamlined administrative processes. These are addressed in greater detail in later sections.

2.3.1 Increases cost efficiency

Linking expands the number and type of abatement options, ensuring that mitigation takes place where it is cheapest¹⁵; this essentially amplifies the effect of a single, unlinked ETS. In the press announcement of the intended link between the EU and Australia, then Australian Minister for Climate Change and Energy,

The classic arguments for linking are based on increased economic efficiency, including making mitigation more cost efficient, increasing liquidity and price stability, as well as addressing some competitiveness concerns.

¹¹ Beuermann, Bingler, Santikarn, Tänzler & Thema (2017); Ranson & Stavins (2016).

¹² Ranson & Stavins (2016).

¹³ Burtrawet al. (2013); Flachsland, Marschinski & Edenhofer (2009); Jaffe et al. (2009).

¹⁴ European Commission (2018).

¹⁵ Edenhofer, Flachsland & Marschinski (2007); Flachsland et al. (2009).

Greg Combet, highlighted that linking would allow Australian entities access to a larger market for cost-effective reductions.¹⁶ As seen in Figure 2.1,¹⁷ linking results in more abatement opportunities for the linked market, with allowances being sold in the lower-priced system to entities in the system with a higher price until the allowance price equalizes.¹⁸ Net buyers will benefit from purchasing allowances at a lower cost, while net sellers will be able to increase revenue by selling their additional allowances. Assuming both caps are sufficiently stringent and robust, and that costs increase with the level of ambition (for more, see Chapter 4), a linked market will reduce emissions at a lower total cost while keeping total emissions under the (joint or separate) caps.

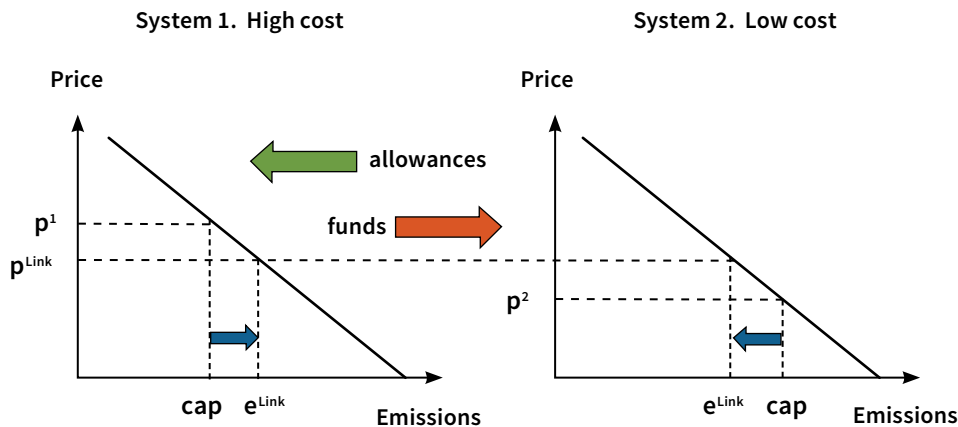
The scope of the cost-efficiency gain will depend on the linking partner. Broadly speaking, the larger the difference in the allowance price, the greater the cost-efficiency gains will be for the linked market as a whole. However, for the system with the higher pre-linking allowance price, this would significantly weaken the price signal sent to the economy. If a system links with another system that brings the same abatement options, cost-efficiency gains for the whole market will be limited.

To date, linking has taken place among jurisdictions with relatively similar allowance prices. Partly this is due to the limited number of potential linking partners, but it also points to the political difficulty resulting from shifts in the allowance price, as well as capital flows across jurisdictions. At the same time, such linking also highlights the importance of the non-economic benefits of linking.¹⁹

2.3.2 Increases market liquidity and ability to absorb shocks

Creating larger markets also results in more market participants. That increases the buying and selling of allowances, **raising market liquidity and making trading more efficient**,²⁰ while also improving the ability of the market to form prices.²¹ These are particularly powerful arguments for smaller systems that alone may not have enough market players or low-cost abatement options.²² As a larger market can reduce daily or long-term price volatility,²³ linking can **increase the systems' ability to absorb any external shocks**, such as any sudden changes in the commodity prices or in currency exchange rates. Indeed, Australia's initial review of linking cites price stability and predictability as key short-term objectives.²⁴ Additionally, if a system

FIGURE 2.1: Linking emissions trading systems



¹⁶ European Commission (2012).

¹⁷ Adapted from Zetterberg (2012).

¹⁸ **Note:** this figure assumes linking partners' systems are of a similar size and therefore prices would equalize at the mid-point between the two systems. However, as noted in section 2.2, market size can affect how benefits and risks materialize in a linked system. In the case of a large ETS linking with a significantly smaller ETS, the equalized price will settle closer to the price in the larger market.

¹⁹ Mehling, Metcalf & Stavins (2017).

²⁰ Flachsland et al. (2009); Jotzo & Betz (2009).

²¹ Flachsland et al. (2009); Jaffe et al. (2009).

²² Switzerland Federal Office for the Environment (FOEN; 2015); New Zealand Ministry for the Environment (2007).

²³ Flachsland et al. (2009).

²⁴ Australian Department of Climate Change (2008).

does not have allowance purchasing or holding limits for regulated entities, linking can also reduce the market power of large buyers or sellers, thereby reducing their potential to manipulate the market.

2.3.3 Creates an even playing field and reduces leakage

By creating a common allowance price across the linked systems, **an even playing field is created for the linking partners, alleviating competitiveness concerns between them.**²⁵ This reduces the risk that regulated entities will shift production to the linking partner with a lower pre-linking allowance price (“carbon leakage”). However, this only addresses the risk between linking partners; it does not alleviate any risk from third-party jurisdictions with a lower or no allowance price. The extent to which entities are affected by competitiveness concerns depends on several factors, including their trade exposure and the GHG intensity of their products.²⁶ For instance, competitiveness concerns will largely be reduced for energy-intensive entities that are traded with the linking partner’s jurisdiction.

2.4 ENVIRONMENTAL BENEFITS OF LINKING

2.4.1 Increases environmental ambition

Linking lets jurisdictions achieve the same mitigation target at a lower cost than a non-linking scenario. Theoretically, this may **encourage policymakers to adopt a more ambitious target given the cost-efficiency gains from linking.**²⁷ It may also be easier to adopt more ambitious targets when moving forward as a larger group of jurisdictions rather than as a single jurisdiction. For instance, each of RGGI’s program reviews (2012 and 2016) has lowered the regional cap, tightening the annual reduction factor in each of the successive phases (2.5% through to 2020 and around 3% for 2020-2030 respectively). This may be a valuable option for national governments as climate targets are ratcheted up, for instance, when Parties review and update their NDCs.

2.5 POLITICAL AND ADMINISTRATIVE BENEFITS OF LINKING

2.5.1 Creates momentum for climate action and leadership

On the international stage, linking can be used as a **demonstration of climate change leadership and to encourage international action.**²⁸ On the domestic level, linking is a cross-border commitment that can also **create more domestic political support for the ETS, as well as political momentum on climate action more broadly.**²⁹ Once the link is established, this can help “lock in” the policy under future administrations, creating a path dependency for continued support for mitigation and carbon pricing.³⁰ This, in turn, may stimulate the deployment and development of new, low-carbon innovation and technologies, particularly in the energy field. Indeed, the WCI’s strategy of a common carbon market was drafted not only to reduce emissions but to generate a number of co-benefits, including clean energy technology, the creation of green jobs, and public health protection.³¹ However, this “lock in” effect is only theoretical at this stage. Additionally, this may be more than counterbalanced by strong domestic pressure to abandon or weaken mitigation commitments, particularly for systems that are either in the early stages of implementation and/or linking. For instance, neither the upcoming link with the EU ETS nor the participation in the linked WCI carbon market were enough to prevent Australia and Ontario respectively from dismantling their recently launched emissions trading systems.

2.5.2 Streamlines administrative processes

As linking will likely result in a level of design alignment, having **joint processes**—such as conducting joint auctions or operating joint registries—can also bring administrative benefits to the market. This **reduces program costs and streamlines processes** that would be beneficial both for regulators and for companies operating across the linked systems.³² As

²⁵ Jaffe & Stavins (2007); Zetterberg (2012); Haites (2014).

²⁶ For more on factors affecting a firm’s competitiveness and a broader discussion on carbon leakage, see the Partnership for Market Readiness (PMR; 2015) and Neuhoff, Acworth, Dechezleprêtre & Drøge (2014).

²⁷ Flachsland et al. (2009); Bodansky, Hoedl, Metcalf & Stavins (2015).

²⁸ For instance, see European Commission (2010).

²⁹ Bodansky et al. (2015).

³⁰ Pizer & Yates (2014).

³¹ California Air Resources Board (ARB; 2012a).

³² Burtraw et al. (2013).

Mehling et al. (2017) state, this can be particularly attractive for smaller jurisdictions that can adopt the existing structures of their larger linking partner.

2.6 ECONOMIC RISKS OF LINKING

2.6.1 Exposure to external shocks

Even though linking makes the whole linked market more robust to external shocks, linking can also increase an ETS' exposure to **external shocks as developments in one system will be automatically exported to the linking partner**.³³ An ETS with significant price fluctuations or a jurisdiction with currency shocks may raise concerns for a potential linking partner. The case of New Zealand is an illustrative example. The unrestricted use of international credits in the New Zealand ETS played a significant role in the crash of its allowance price. Low demand for credits from the Clean Development Mechanism (CDM) led to a low credit price. This, coupled with the EU's decision to drastically reduce the eligibility of Certified Emission Reductions (CERs), brought prices down even further and also cut the price in the New Zealand ETS.³⁴

2.7 ENVIRONMENTAL RISKS OF LINKING

2.7.1 Linking to a system that is not equally robust

The environmental impact of an ETS also depends on elements of robustness. This includes **assurance that emissions are measured appropriately, and that the system is enforced consistently** (for more, see section 4.2.1). This in return requires a robust, domestic system for Monitoring, Reporting and Verification (MRV) and a strong legal and institutional framework to ensure compliance and enforcement (for more, see section 4.11). If a jurisdiction with a robust ETS links to a system that is not robust, then this could undermine the robustness and credibility of the whole linked market. It also creates a risk that the cap is not met and that emissions reductions are actually less than expected (see section 4.6.2).

To address issues of system robustness when linking with other programs, California has a requirement that the Governor must be satisfied that the linking partner's

program (including offsets) has requirements that are stricter than or equivalent to California's goals and programs.³⁵ The Governor takes this decision based on a linkage readiness report prepared by the ARB, which describes the progress in preparing for linking and assesses every element of the respective program to ensure it is robust and consistent with California's system.³⁶ Linking within the WCI requires reviews of the cap-and-trade programs in the participating jurisdictions, ensuring equivalent stringency across the linked market.

2.7.2 Incentivizes weak reduction targets

Theoretically, linking may create a perverse incentive for linking partners to set weak reduction targets.³⁷ By setting a generous cap, one system can generate more allowances that would then be purchased by entities in the partner system. Depending on the change in the allowance price (i.e., if the price drops significantly due to oversupply), this increase in allowances could also increase that partner's revenue.³⁸ However, linking may not be sufficient to overcome strong domestic opposition to an ETS, particularly a relatively young system.

In the early stages of considering linking, policymakers can assess the relative ambition of potential linking partners by looking at possible indicators such as overall climate targets. As linking discussions progress, a frank discussion between the linking partners on the cap trajectory and overall ambition of their systems can also address this risk prior to linking. More broadly, assessing the level of ambition of other systems may also help policymakers identify potential linking candidates. As well, policymakers can look to other indicators, such as overall climate targets when assessing potential linking partners.

2.8 POLITICAL AND ADMINISTRATIVE RISKS OF LINKING

2.8.1 Distributional concerns

In an ETS, regardless of whether it is linked or not, **spending will shift from high- to low-carbon intensive goods and services—and certain groups**

³³ Ranson & Stavins (2016).

³⁴ Ibid.

³⁵ Government Code §12894, subd (f)(1).

³⁶ For example, see ARB (2013b) for the report on the link with Québec and ARB (2017c) for the link with Ontario.

³⁷ Flachsland et al. (2009).

³⁸ Helm (2003); Green et al. (2014).

(industries, sub-sectors, firms, and households) will be affected in different ways. Some groups will end up better off than others, which can create “distributional concerns”. Linking will shift the allowance price and may change the initial design of a jurisdiction’s ETS. These changes will create new “winners and losers” from linking. Although the net benefit to the linked market may be positive, linking can create localized positive or negative effects on certain groups.

In addition, **in order to link, a certain level of design alignment will be necessary. Policymakers may have to compromise on specific design elements** that they themselves may have put in place to achieve certain political objectives. Alternatively, the system’s design may be the result of hard-won political compromises among domestic stakeholders. If these compromises or objectives cannot be achieved through other means, i.e., through allocation or additional policy measures, this may create new distributional concerns – and domestic support for the ETS may decline.³⁹ The nature and scale of these changes may outweigh the overall cost-efficiency gains from linking.⁴⁰

The distributional concerns raised in this section are also present in an unlinked system, and mechanisms may already be in place either within the ETS or operating alongside it to minimize any potential negative effects. However, in both independent and linked carbon markets, addressing the potential distributional concerns of emissions trading is not an easy task. Imposing a carbon price could result in distributional issues arising across different groups in multiple ways. Measuring the potential scale and scope of the impact prior to the imposition of the carbon price can also be challenging.

The following section outlines how linking could affect:

- mitigation and its co-benefits;
- regulated entities;
- households; and
- fiscal revenue.

Mitigation and its co-benefits

Changes in the allowance price can shift when and where emissions reductions take place. This will also affect when and where the co-benefits of mitigation, such

as public health benefits and job creation, will occur. Although this very flexibility is one of the advantages of emissions trading (e.g., compared to command and control regulations), **the potential loss of a significant level of mitigation, low-carbon investments and their related co-benefits within one jurisdiction may be challenging for policymakers to accept.** In addition, if there is less incentive for domestic mitigation, this increases the risk of locking in carbon-intensive technologies and infrastructure such as coal power plants and steel plants, making it harder for that jurisdiction to reduce its emissions in the long term.

This issue can be addressed in a number of ways, including modifying the design of the ETS and adding complementary policies. For instance, due to ongoing concerns by the environmental justice community about the ability of the cap-and-trade program to alleviate long-standing concerns about air quality near large polluting sources, the California legislature drafted and passed a companion bill to ensure the state had new and more direct tools that it could use to address ongoing local air quality concerns. Similarly, to ensure linking encouraged mitigation in Tokyo and Saitama, offsets cannot be traded between their systems.

Regulated entities

Distributional issues may arise for regulated entities both within the linking partners’ jurisdictions and across the linked market. Whether or not a regulated entity will benefit or be disadvantaged by the link depends on whether it is a net buyer or seller.⁴¹ **Those that need to buy allowances will benefit in the system where the price falls and sellers will benefit in the system where the price increases.**⁴² Buyers in the system with a higher allowance price will be disadvantaged by linking as it will increase their overall operating cost.

Although an ETS is meant to increase the cost of carbon-intensive goods in order to shift consumption and production toward low-carbon sources, **the allowance price could rise beyond a level deemed politically acceptable.** Some firms may be able to pass the increased cost (or a share of the cost) onto consumers but a higher allowance price as a result of linking may be a particularly acute issue for energy-intensive,

³⁹ Metcalf & Weisbach (2010).

⁴⁰ Flachsland et al. (2009).

⁴¹ Flachsland et al. (2009); Jaffe et al. (2009).

⁴² Ranson & Stavins (2009).

trade-exposed entities, unless they are already being compensated through free allocation. Free allocation can help alleviate the impact of the allowance price on the regulated entity, thereby reducing the risk it will relocate production (“carbon leakage”). Free allocation to these entities can also ease any negative effects on local economies that are reliant on those entities for economic growth and employment.

Households

An increase in the allowance price as a result of linking could potentially affect households in three ways:

- increased fuel prices;
- increased prices in other goods and services with GHG emissions in their supply chain (e.g., electricity); and
- decreased household income either through a reduction in shareholder or worker income.⁴³

How this affects households will also vary according to the income level of households because their spending patterns will vary and they will have different sources of income. An ETS is also regressive as lower-income households will spend a higher share of their income on fuel and electricity costs. Policymakers may also try to reduce the impact on households through policy measures that may, for instance, invest in benefit programs, reduce certain taxes, or assist households with their energy bills. Thus, depending how this is structured, although an increased allowance price may result in higher energy costs, this would increase revenue for that jurisdiction if they auction allowances. If this is then used to invest in energy efficiency programs or offset households’ electricity bills, the higher price may not have a negative effect on households.

Fiscal revenue

If a system auctions allowances, then **changes in allowance prices due to linking can affect jurisdictions’ expected fiscal revenue**. Although this is not the core objective of an ETS, a loss in revenue could affect the long-term viability of projects funded by auctioning revenue, which in turn would have additional distributional consequences. For example, an annual loss of AUD 3-5 billion in Australia’s fiscal

revenue was forecast as a result of the link with the EU and a number of projects funded by the CPM revenue were dismantled in anticipation of this downturn.⁴⁴

2.8.2 Scale of capital flows

When systems link, there will be capital flows from the higher-priced system to the lower-priced system until prices equalize. **Depending on the scale of these transfers, this could attract political opposition**⁴⁵ and be problematic both for the net seller and net buyer jurisdiction. For the net seller, if the system is already seen as ambitious, any increase in the allowance price may attract opposition. Even though this will come with an increase in capital flows, increasing the ambition of the domestic ETS may not be acceptable among certain groups. For the net buyer, there may be political issues in sending money outside of the jurisdiction. A supportive domestic environment, both among stakeholders and particularly on the political level, is important both for an independent and linked ETS. The change in government in Australia, New Jersey, and Ontario all played a key role in the subsequent political decision to repeal their respective systems.

2.8.3 Contagion of design features if not harmonized

A full, two-way linking of ETSs can lead to the **automatic propagation of specific design features**. These include offsets, banking and borrowing, price- and quantity-based controls, as well as links with other systems.⁴⁶ Even if these features are not allowed in one of the systems, they will still be indirectly used and affect both linking partners. Ultimately, the extent to which this poses a risk to the linked market will depend on the goals of the linking partners and the design of the respective systems, including their level of alignment (for more on alignment issues, see Chapter 4).

2.8.4 Partial loss of domestic control over the system

As linking partners jointly operate a linked market, the scope for unilateral regulatory intervention by one jurisdiction is diminished. This does not imply that a jurisdiction will necessarily cede a level of authority to another; rather, **operating a joint market will**

⁴³ A carbon price may reduce a firm’s profits resulting in a loss of income for shareholders. Similarly, a decrease in workers’ wages as a result of decreased firm profit would also reduce a household’s income. However, an increased allowance price may also profit other parts of the economy. For more, see Beugin et al., 2016.

⁴⁴ Drummond (2012).

⁴⁵ Ranson & Stavins (2009).

⁴⁶ Hawkins & Jegou (2014); Ranson & Stavins (2016); Tuerk et al. (2009a); Flachslund et al. (2009); Sterk et al. (2006); Haites & Mullins (2001).

necessitate the need for some coordination and consultation than would otherwise exist in an independent system. Linking partners may operate specific elements of the market jointly, such as market monitoring or a joint auctioning platform. More broadly, unilateral regulatory intervention by one partner may still have an indirect effect on the linked market as a whole and thus that partner may need to notify or consult with their linking partner prior to taking action. How linking partners manage a joint market will vary on a case-by-case basis (and is explored in more detail in Chapter 7), but institutional provisions and procedures for consultation and coordination will be required.

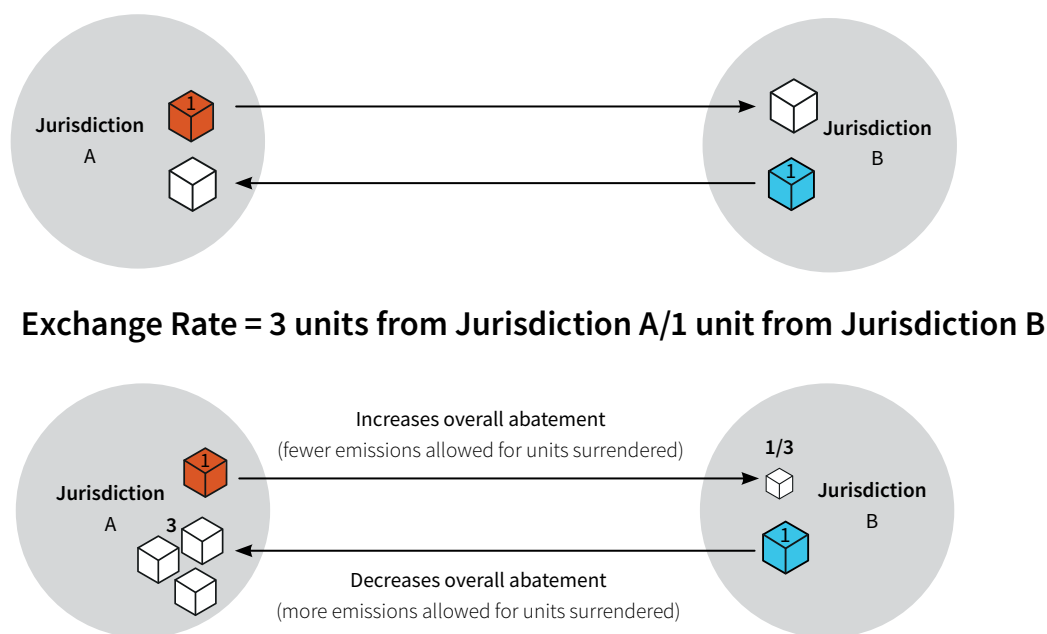
Additional policy instruments could also be put in place to ensure a certain level of domestic control is maintained, for instance, over the level of mitigation taking place within the jurisdiction. Massachusetts' *Electricity Generator Emissions Limits Regulation* (310 CMR 7.74), which is structured as a cap-and-trade program, operates in parallel (but does not directly interact with) the RGGI carbon market. The regulation sets a gradually declining limit on CO₂ emissions from large power plants. It provides the state with a legal backstop to ensure all the state's programs are delivering the necessary cuts to ensure its climate targets are met.

2.9 RESTRICTED LINKING AS AN INITIAL OR ALTERNATIVE OPTION TO FULL LINKING

In order to address some of these potential risks, **policymakers could consider restricted linking as an initial or alternative option to full linking**. This would give policymakers more control over their own system but may not capture the same level of political, economic, and environmental benefits as in the case of full linking.⁴⁷ Restricted linking has three main options.⁴⁸

- **Quantity limits or quotas** can be put in place to limit the types of units or the total number of units that can be used in a system for compliance. Most systems, for example, include restrictions on the use of offsets. These do not affect the overall level of mitigation under the linked market and would still increase cost efficiency compared to no linking.
- **Exchange rates** can be put in place, which would adjust the value of certain units by a set factor. These are set symmetrically as is illustrated in Figure 2.2 (below).⁴⁹ The impact of exchange rates on total abatement and cost efficiency under the linked market depends on the actual rate. It could deliver many of the environmental and economic benefits of full linking; however, information

FIGURE 2.2: Exchange rate in a linked system compared to full linking



⁴⁷ Lazarus, Schneider, Lee & van Asselt (2015).

⁴⁸ For more details, see *Ibid.*

⁴⁹ *Ibid.*

asymmetries between the regulator and the regulated entities, as well as future uncertainties about the exchange rate, can also have significant negative consequences for the linked market. Setting rates in order to avoid such negative effects can be challenging, particularly in a market with more than two linking partners.⁵⁰

- **Discount rates** can be implemented, which would work in a similar manner to exchange rates but can be set asymmetrically. However, asymmetrical rates may give the impression that reductions

in one system are valued more highly than those from the other, which could be politically contentious.⁵¹ Discount rates can also be designed in a way that ensures cost effectiveness and enhances mitigation.⁵²

In addition, linking partners need to consider who will set these restricted linking options, how they will be set, and how they will be updated or adjusted over time.

At a glance: potential benefits and risks of linking

- Most links to date have taken place between (often geographically proximate) jurisdictions with close pre-existing political and economic ties.
- Linking involves trade-offs between multiple benefits or between achieving a benefit and minimizing a risk. Policymakers must prioritize their key benefits or risks when considering linking.
- The potential for lowered compliance costs is the main reason jurisdictions have pursued linking. Increased market liquidity has also made linking attractive for smaller jurisdictions.
- Restricted linking offers alternative options to minimize the risks of linking while delivering some measure of the benefits of a full, unrestricted link.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

CHAPTER THREE

Process and Pathways to Implementing Linking

3.1 INTRODUCTION

This chapter looks at the process of establishing a linked market; the subsequent process of managing and operating a linked market is addressed in Chapter 7. Experience has shown that the successful development of a link between systems and the complexity of the linking process depends on the initial framing conditions. The first section of the chapter outlines three key conditions: (i) the relationship with the linking partner; (ii) the desired level of ETS design alignment; and (iii) the type of link that is sought. The second part of the chapter addresses the typical phases in the process of establishing a link: genesis, negotiation, and implementation.

3.2 INITIAL CONSIDERATIONS

3.2.1 Relationship with the linking partner

Given the close cooperation and interconnectivity that partners will have once a link between their respective systems is established, mutual trust in each other's institutions and political leadership is critical. A pre-existing relationship on the political and technical levels between the linking partners and a mutual recognition of their political trustworthiness and technical capacity can also accelerate the linking process.⁵³ Cooperation at the bilateral or multilateral level, such as working together on environmental or climate topics or membership in common initiatives, can form a first step to developing future linking initiatives as it fosters mutual trust and confidence.

Building close relationships and creating a supportive political climate can benefit the linking process.

The RGGI states and the WCI jurisdictions benefitted greatly from their previous cooperation under the Acid Rain Program, a cap-and-trade program for air

pollutants that was introduced in the US under Title IV of the 1990 *Clean Air Act*. The California-Québec-Ontario link was also built upon their long-standing cooperation within the context of the WCI since 2008, which itself grew out of the West Coast Governors' Global Warming Initiative as early as 2003 to develop a regional carbon market. The participation of Norway, Iceland, and Liechtenstein in the European Economic Area (EEA) eventually resulted in the accession of these states into the EU ETS.⁵⁴ On the other hand, close political relations and cooperation in multiple issue areas can also burden linking negotiations, as was the case with the EU and Switzerland where linking negotiations were temporarily suspended following a referendum in 2014 re-introducing an immigration quota in Switzerland.

If policymakers have not been previously exposed to the climate policy framework and the ETS of a potential linking partner, **familiarizing themselves with their potential partner's climate policy instruments at an early stage will make the linking process easier.** If jurisdictions have confidence in and a sound understanding of each other's systems, the technical work required for the link is likely to be reduced, saving time and resources. Linking partners may want to pool their resources to better understand each other's systems and what a linked market could look like. Such a joint assessment could, for instance, take the form of joint technical analyses or common working groups.⁵⁵

3.2.2 Desired level of ETS design alignment

In theory, the more closely systems seek to align or harmonize the design of their respective systems, the more complex discussions on alignment are likely to be (for more, see Chapter 4). In practice, some jurisdictions may have designed their systems with linking in mind, particularly with a specific linking partner.

⁵³ In this regard, WCI partners have emphasized the political leadership and trust at both the higher political and working levels as an important factor supporting their linking endeavors.

⁵⁴ Agreement on the European Economic Area (1994).

⁵⁵ A linking partner with more resources or that prioritizes linking more highly may take a more prominent role in delivering the underlying work, e.g., conducting research or providing legal expertise for drafting the linking agreement. Australia played a leading role in developing the technical work and analyses during linking negotiations with the EU. California and New York also played similar roles in the early stages of linking discussions with Québec (and in general for the development of the WCI carbon market), and in the startup phase of RGGI, respectively.

Upfront coordination on the ETS design (or developing some of the system elements together), as was done among the WCI partners, **makes alignment significantly easier** – especially compared to systems that have been developed separately and seek to link at a later stage. In 2010, following two years of intensive consultation among the participating jurisdictions and considerable stakeholder involvement, the *Design for the WCI Regional Program* was released. This provided WCI partners with a guide to develop compatible cap-and-trade programs in their jurisdictions.

Alternatively, a new system might be modeled on an existing ETS, which would allow them to more easily link to that system. This was the case with both Norway and Saitama, which designed their systems with linking in mind with the EU and Tokyo respectively.⁵⁶ The same approach is also being explored by Virginia and New Jersey,⁵⁷ which are both currently developing a cap-and-trade program based on the RGGI Model Rule.⁵⁸ In addition to reaping the potential benefits of linking, such a strategy has the added benefit of adopting a system that has stood the test of practice – particularly if the jurisdiction has a similar economic and emissions profile.

This said, full linking is possible also between two independently designed systems, such as the attempted Australia-EU link. Once the necessary adjustments have been identified, partners can choose to fully link or adopt a more phased approach where design differences are gradually reconciled.^{59, 60} Despite significant differences in the Australian and EU systems, such as the use of land-use offsets and price management provisions in the Australian system, both partners made considerable progress in aligning their systems before negotiations were halted following the abolition of the Australian CPM (for more, see Box 3.1).

Restricted linking (the imposition of quotas, discounts, or exchange rates) may also be pursued as a transitional approach or as an alternative to full linking,

where keeping more control of domestic abatement is deemed desirable.⁶¹ To ensure a certain level of emissions mitigation takes place within their respective jurisdictions, Tokyo and Saitama excluded the trading of offset credits between the two systems.⁶² Norway's ETS also had a one-way link with the EU ETS (with Norway as the buyer) before transitioning to a full two-way link.⁶³

However, the necessary or desirable level of design alignment is a political question that will vary on a case-by-case basis. **Systems need not necessarily become similar or identical over time as policymakers may be willing to accept and deal with the consequences of unaligned design elements in the linked market** (for more, see Chapter 4).

More broadly, the ease with which linking partners can adjust their respective systems also depends on what stage of the regulatory process they are in. If systems are still in the design phase or in the middle of a system review, there may be more flexibility to implement the agreed changes. If systems are already operational and there is no scheduled system review that could serve as a window of opportunity, any changes to the ETS would trigger a new and additional legislative or regulatory process. Therefore, the speed with which the respective policymakers can propose and/or adopt any changes will also depend on their legislative/regulatory processes.

3.2.3 Desired type of link

The complexity of the linking process is also determined by the type of link (for more, see Section 1.3.1). **Generally speaking, establishing a one-way link will be easier than establishing full, two-way linking.** In the case of one-way links, ensuring registry connectivity is one of the few key issues to tackle. In some cases, a one-way link may serve as an initial step to full two-way linking, which likely will require coordination on more issues. Box 3.1 describes the EU-Australia linking process, where an initial one-way link was planned as

⁵⁶ The initial meeting between Tokyo and Saitama took place in February 2010, followed by an MoU announcing the link in September, with the agreement on the details of the link reached in Spring 2011.

⁵⁷ In the case of New Jersey, this process is easier because the state was formerly a part of RGGI and is seeking to rejoin the system.

⁵⁸ The Model Rule proposes regulations that guide RGGI-participating states in drafting and implementing their respective, domestic cap-and-trade programs (for more, see figure 6.1). For more, see CO₂ Budget Trading Program General Provisions (2017).

⁵⁹ This should be differentiated between cases where phased alignment is a longer process where linking only occurs at the end as opposed to an initial level of alignment that is sufficient to support a linked market, followed by a greater level of alignment once the linked market becomes operational.

⁶⁰ Burtraw et al. (2013).

⁶¹ Lazarus et al. (2015).

⁶² Although both partners allow a wider range of offsets in their respective systems, only credits from excess emissions reductions or from small- and mid-size facilities in Tokyo and Saitama are eligible for trading.

⁶³ This transition was also proposed for the link between the EU and Australia.

an interim step before transitioning to a two-way link. Finally, if a link is negotiated individually as a one-of-a-kind collaboration, this may be faster than crafting a linking agreement that is meant to serve as a blueprint

for future linking ventures (also see Section 6.7). If partners wish to establish restricted linking, establishing conditions and the mechanisms to restrict the link may require considerable work.

BOX 3.1: EU-Australia linking negotiations

The Australian Government had designed the Australian CPM with linking as a potential, long-term option without identifying a specific system or linking partner.^a Despite this, in December 2011, senior officials from Australia and the EU commenced linking talks that focused on the mechanics of linking, specific options of types of linking, steps, and possible timing for such linking to occur (see also Figure 3.1).

The negotiation was a relatively informal process involving a small number of people. In addition, a sub-group was created to discuss the technical issue of linking the EU registry with the Australian registry. Frequent contact happened at various levels between Australia and the EU. Most of the discussions were carried out through phone calls, complemented by face-to-face talks.

In August 2012, Australia and the EU announced their intention to establish a full two-way link, which would be implemented in two stages: a one-way link where allowances could flow from the EU to Australia from 1 July 2015 and a two-way link planned from 1 July 2018.^b In the same announcement, they also proclaimed two changes to the design of the Australian CPM: the repeal of the Australian price floor and the introduction of a sub-limit on the use of eligible Kyoto units. These amendments were subsequently enacted by the Australian Government in November 2012. To facilitate the interim phase, registry arrangements for the one-way link were to be finalized by mid-2013 based on a consultation paper released in March 2013.^c Finally, on 24 January 2013, the European Commission submitted a recommendation to open negotiations on full linking to the Council of the EU.

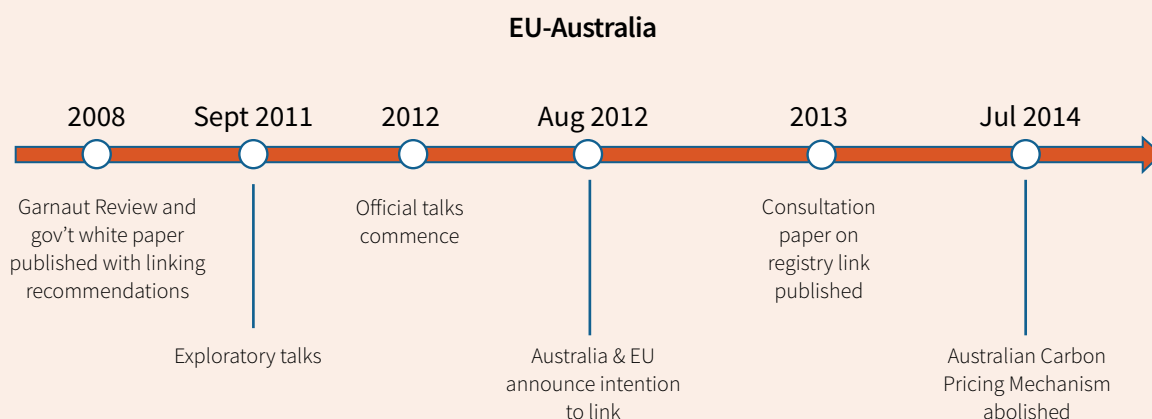
However, the federal election in Australia in September 2013 resulted in a change of government, which led to the abolition of the CPM and the termination of linking talks in 2014.

^a Department of Climate Change (2008).

^b Australian Minister Combet & European Commission (2013).

^c Commonwealth of Australia and the European Commission (2013a).

FIGURE 3.1: EU-Australia linking timeline



3.3 TYPICAL STEPS IN THE PROCESS OF ESTABLISHING A LINK

The process of establishing a link involves discussions and decisions both at the political and the technical levels. The initial commitment to pursue linking, the resolution of contentious issues during negotiations, and the endorsement of the final linking agreement happen at the political level. Technical work may range from preparatory tasks such as analyses of the linked market or specific ETS design elements (including economic modeling), to developing a timeline or roadmap for linking negotiations, through to the actual substantive negotiations. In practice, the nature of issues arising during the linking process may not always be clear cut; both the political and the technical level may deal with the same issues at different times and at different levels of aggregation.

The process that leads to establishment of a link can be separated into three main phases—genesis, negotiation, and implementation (see Figure 3.2). However, the exact steps under each phase may vary.

3.4 GENESIS PHASE

The genesis phase covers the exploration of the possibility of linking, the identification of the elements of a successful link, and their initial interactions with potential linking partners.

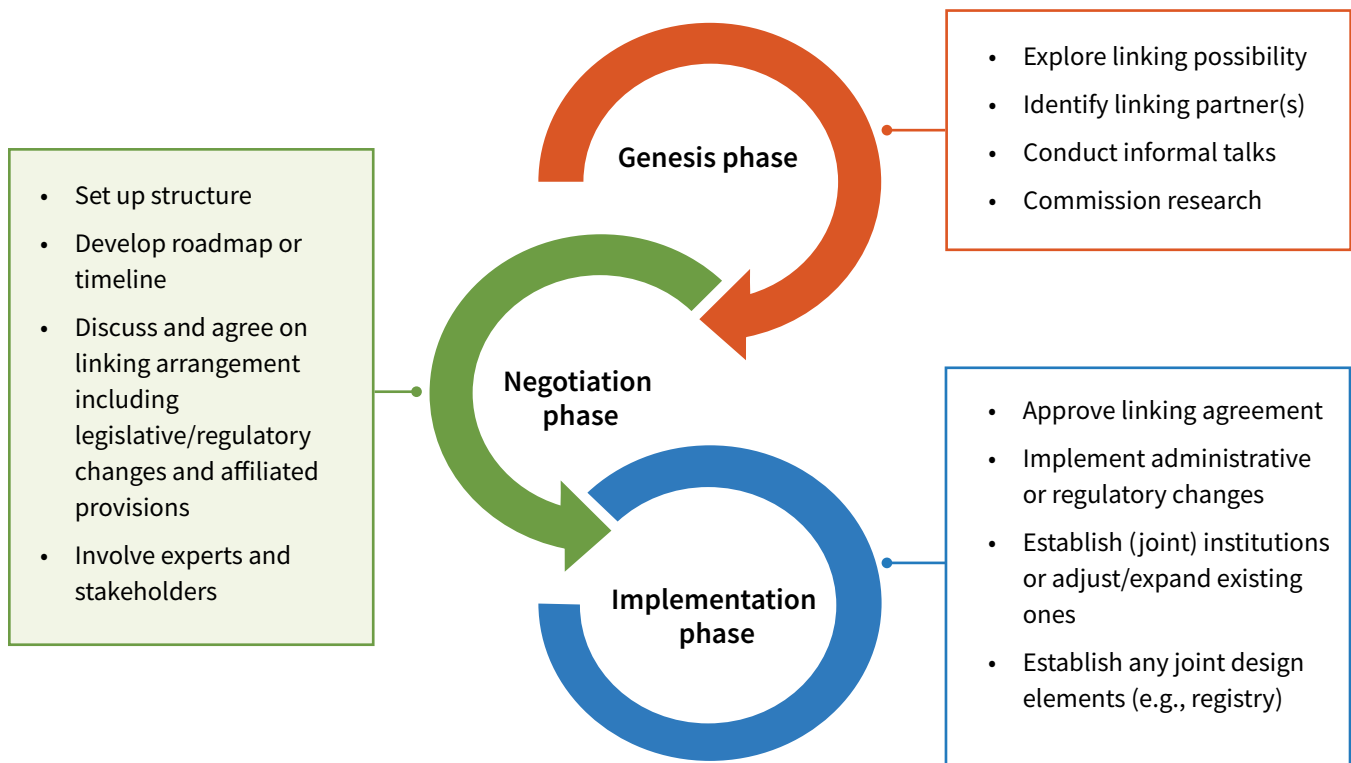
3.4.1 Political impetus for linking

To date, **political leadership has been instrumental in opening windows of opportunity for linking** (see Box 3.2 for an example). High-level public announcements or speeches declaring an interest in linking, broader joint declarations or expressions of intent between potential linking partners to collaborate on climate policy can help kick start or accelerate the linking process.

3.4.2 Research

To get a better indication of the potential impact of linking and to help build support among stakeholders, governments may also commission research to investigate or quantify the potential benefits of linking. Before starting linking negotiations with the EU, Switzerland's

Figure 3.2: Overview of the three phases of establishing a link



Federal Office for the Environment (BAFU) and State Secretariat for Economic Affairs (SECO) commissioned a study which concluded that linking with the EU ETS would bring positive economic benefits to Switzerland.⁶⁴ Similarly, modeling commissioned by New York state concluded that a regional approach would be more cost-effective than individual state-based regulation of electricity sector emissions, building support among environmental groups and industry for a multi-state market.⁶⁵ Commissioning research can also be helpful

at a later stage during the negotiation phase (for more, see Section 3.6.2).

3.5 NEGOTIATION PHASE

At the start of this phase, policymakers need to organize the negotiation and organizational structure, formulate an agenda, and identify key issues. In the negotiation phase, partners aim to get an intricate understanding of both systems, as well as the wider regulatory context

BOX 3.2: Birth of RGGI

Based on the recommendation of the New York Greenhouse Gas Task Force to establish an interstate ETS for the electricity sector,^a in spring 2003, the New York Governor reached out to the governors of Northeast and mid-Atlantic states to encourage their participation in such a regional system. Already in 2001, all New England governors and Eastern Canadian premiers had agreed on a regional Climate Change Action Plan with targets for 2010, 2020, and 2050^b—and were considering how they might meet these goals. Therefore, the invitation from the New York Governor was well-timed and positively received. Moreover, a linked market reflected the realities of the interconnected electricity grid in the region,^c as well as the interconnected PJM (Pennsylvania, Jersey and Maryland) electricity market across 13 states. States could also build on their emissions trading experiences under the Acid Rain Program and the Ozone Transport Region Program, which were preceded by a long-term collaboration under the Northeast States for Coordinated Air Use Management (NESCAUM), a non-profit association of air quality agencies in the Northeast founded in 1967.

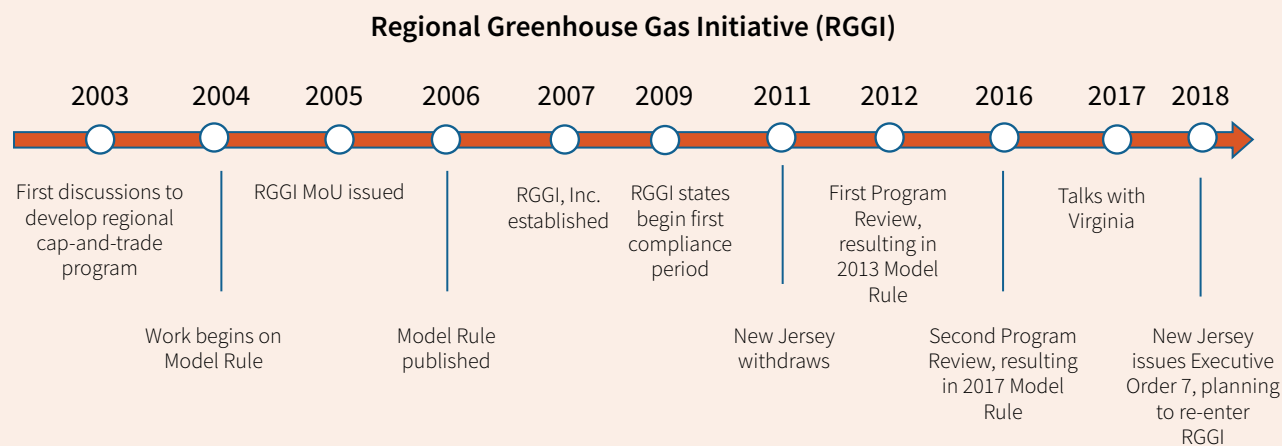
At both the political and working level (i.e., governors, premiers, commissioners, heads of energy and environmental regulatory agencies and other staff members), interested jurisdictions held an initial meeting in September 2003 and kicked off the joint development of RGGI (also see Figure 3.3). On 20 December 2005, the governors of seven US Northeast states (Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont) signed an MoU announcing the establishment of RGGI, including the framework for a Model Rule.

^a Center for Clean Air Policy (2003).

^b New England Governors and Eastern Canadian Premiers (2001).

^c Environment News Service (2003).

FIGURE 3.3: RGGI linking timeline



⁶⁴ Ecoplan (2008).

⁶⁵ Center for Clean Air Policy (2003).

of their linking partner with a view to negotiating a linking arrangement that is environmentally robust yet appropriate to each partner's domestic situation. Negotiations are often supported by modeling or analytical work, and accompanied by engagement with experts and stakeholders. In terms of substance,

negotiations move through all aspects that are relevant for linking and operating a joint market.

3.5.1 Negotiation and organizational structure

The appropriate negotiation and organizational structure for conducting linking negotiations will differ on a

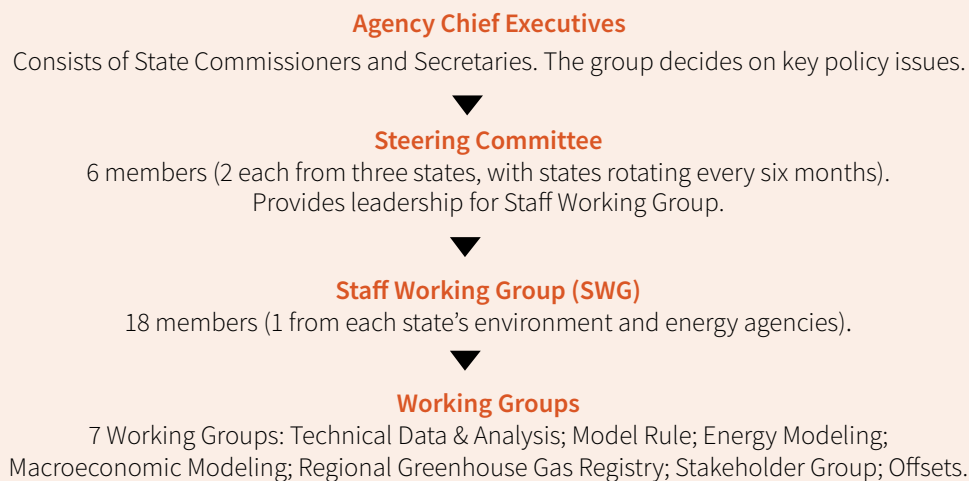
BOX 3.3: RGGI Action Plan (2003)

In 2003, US states interested in cooperating on a cap-and-trade program in the Northeast agreed on an action plan to establish RGGI, which included the goals for the common market, guiding principles for the program design, organizational structure (see also Figure 3.4), and a timeline.^a

Organizational structure

The agency chief executives of the participating RGGI states monitored the work and approved the recommendations from the staff working group (SWG), which consisted of a representative from each state's environmental and energy agencies. Broader guidance for the SWG was provided by the steering committee, composed of representatives from three states representing each of the three electricity markets (Pennsylvania, Jersey, Maryland (PJM)); New York Independent System Operator (NYISO); and ISO New England (ISO-NE). Finally, working groups were set up with specific tasks to facilitate the development of the Model Rule. US states and Canadian provinces that were not part of RGGI could be observers in the SWG, as well as in the working groups.

FIGURE 3.4: RGGI organizational structure



Timeline

The schedule to develop RGGI was divided into three phases:

1. The learning phase (months 0-6) focused around three topics: sharing of state experiences, scheduling of expert briefings, and defining state legal mechanisms for action.
2. In the first development phase (months 0-20), the sub-groups worked on data gathering and technical analysis such as modeling and cost-benefit analyses, as well as the development of the Model Rule. A regional registry, stakeholder process, and RGGI website were also set up in this stage.
3. In the second development phase (commencing approximately month 6), the development of offset requirements, complementary policies, and possible future program extensions (such as expanding sector coverage) were addressed.

^a RGGI (2003).

case-by-case basis, and may change over time based on experience or evolving needs.⁶⁶ **Before embarking on negotiations, linking partners can establish an overall structure** (such as the RGGI Action Plan outlined in Box 3.3) to map topics for discussion, the order in which these will be tackled, how they will be addressed (e.g., in working groups), and any other tasks necessary for linking.

The organizational structure developed by RGGI broadly reflects most linking negotiations to date. The bulk of the technical work is typically carried out by the relevant agency or ministry officials with an in-depth understanding of their respective systems. Linking partners may also complement this work with one or more working groups to deal with specific design elements or any technical/administrative matters, as was done in the EU-Australia registry working group. Such bodies are then overseen by higher-level representatives to whom they regularly report and from whom they seek further guidance as necessary.

3.5.2 Understanding the linking partner's regulatory context and ETS

Beyond talking through the details of ETS design alignment and the regulatory framework covering the joint market, **a major part of the negotiations will likely be spent working to understand the linking partner's legislative and regulatory processes and their context.** For the link between California and Québec, for instance, linking partners had to account for two different legal systems (civil law in Québec and common law in California), as well as significant differences in their environmental regulatory frameworks and public consultation procedures. The partners even differed in their official language (with French being used in Québec and English in California). “This meant that every word, expression, sentence, article and legal terminology in regulations, once translated, had to be scrutinized to achieve agreement on its conceptual and practical

meaning.”⁶⁷ In the case of the EU and Switzerland, the negotiations yielded a Linking Agreement that reconciled different traditions in terms of confidentiality rules surrounding documents and information, including the existing ETS information classification policy of the EU, the Information Protection Ordinance (IPO), and the Federal Act on Data Protection (FADP) for Switzerland.

Similarly, linking partners will need to take time to achieve a thorough joint understanding of the design of their linking partner's system, as this is the basis for resolving questions around design alignment and related issues, such as potential concerns regarding competitiveness issues.

3.5.3 Legal framework and principles

Linking partners' ETS legislation or regulation may also outline certain conditions and/or requirements that determine how linking can take place. These include:

- legal authority to link;
- elements of a linked market; and
- normative requirements.

Legal authority to link

First, a **government may need to meet certain procedural requirements** before it can approach a potential linking partner to negotiate a link. Some may require the adoption of a formal negotiation mandate that defines the scope of issues to be discussed. For instance, the European Commission requires a mandate from the Council of the EU to open negotiations on linking. The legal framework may also specify which branch and level of government may engage in negotiations with foreign powers, and specify limitations to such powers. Generally, for national jurisdictions, when linking involves negotiations with a foreign power, this would fall under the purview of the executive branch. For sub-national entities, cooperation with a foreign power may be more complicated and may require

The appropriate negotiation and organizational structure for conducting linking negotiations will differ on a case-by-case basis, and may change over time based on experience or evolving needs.

⁶⁶ For example, during the first round of the EU-Swiss linking negotiation, technical working groups were set up to tackle different issues such as stationary installations, aviation, power plants, registries, and security. However, this structure proved too rigid for the negotiations, resulting in these groups being dissolved after the second round.

⁶⁷ MDDELCC (n.d.), p. 6.

some coordination with their national government, as well as raising constitutional issues. Under most federal systems (including the United States and Australia),⁶⁸ sub-national entities lack the authority to conclude binding agreements with foreign countries⁶⁹ (for more, see Box 6.2). Related to this, the question of legal authority may also dictate the form of the linking agreement. Generally, linking agreements have been concluded through a Memorandum of Understanding (MoU) or a legally binding treaty (for more, see Chapter 6). In cases where jurisdictions, for instance sub-national ones, lack the authority to conclude a legally binding treaty, MoUs have typically been the instrument of choice (for more, see Chapter 6).

Elements of a linked market

Second, **there may be legally pre-determined specifications** in terms of acceptable ETS design provisions when linking. For instance, both the EU and California define explicit conditions for potential linking partners (for more, see Box 4.1 in Chapter 4).⁷⁰ The California, Québec and Ontario Linking Agreement also provides for the accession of new members to the Linking Agreement if their system is harmonized and can be integrated into the other Parties' systems (art 19).

Normative requirements

In addition, **linking efforts may also need to be aligned with a wider body of norms and principles** rooted in customary law, constitutional doctrine, or have the status of common legal doctrines of all legal systems. Central norms include: (i) legitimacy of a link, such as transparency, involvement of stakeholders, principles of good faith, equity, and fairness; and (ii) general principles of environmental protection, such as the proportionality⁷¹ and precautionary principles, as well as the “polluters pay” principle.⁷²

3.5.4 Agenda

Developing an agenda and agreeing on the order of issues to be tackled are key steps in organizing the negotiation process (see Box 3.4 on EU-Swiss negotiations). There is no right answer here. In some cases, linking partners may prefer to tackle the difficult or controversial issues first or they may decide to front-load more “straightforward” technical questions with a view to building trust before broaching more difficult or controversial issues.⁷³

Officials from California and Québec methodically categorized all design issues based on three criteria. Provisions were differentiated into those that had to be identical (e.g., those relating to auctioning and registry transfers), those that had to produce similar outcomes such as MRV provisions, and those that could remain different such as the recognition of mitigation achieved from an early action offset program in California or early industry action in Québec.⁷⁴

Conversely, negotiations for the Linking Agreement between the EU and Australia focused on five key policy issues: (i) MRV; (ii) third-party units; (iii) land-based domestic offsets; (iv) competitiveness and carbon leakage; and (v) market oversight.⁷⁵ These different approaches also reflect the differing levels of cooperation and design alignment envisaged in the respective links.

3.5.5 Supporting analytical work and modeling

Supporting analytical work and modeling can help governments understand the potential effects and trade-offs before the final linking design is agreed upon (for instance, see Box 3.5).⁷⁶ Even if ex-ante assessments are limited in their ability to project future developments, **modeling can give policymakers an indication of the potential impacts and implications of linking**, depending on specific parameters.

⁶⁸ This is different in Canada, where the province of Québec has the authority to conclude binding agreements with sovereign foreign countries and governments. Therefore, whereas the 2013 Linking Agreement between Québec and California states that it is non-binding, it is considered as an internationally binding agreement under Québec law, having been endorsed by the government and formally approved, unanimously, by the Québec National Assembly. For more, see Box 6.2.

⁶⁹ This creates a substantial challenge for the conclusion of a legally binding linking agreement between the EU and sub-national ETSs in these countries. However, there are a range of options that could still be explored and Mace et al. discuss them in detail (2008).

⁷⁰ See also Article 25 EU ETS Directive, SB1018 California.

⁷¹ The principle of proportionality means that the ability of a measure adopted by a public authority to promote and sustain a socially desired outcome determines its necessity and thus by extension its proportionality. See more in Tuerk et al. (2009a).

⁷² For more, see Mehling in Carlame, Gray & Tarasofsky (2016).

⁷³ As Burtraw et al. outline (2013), it may be beneficial to incrementally align design elements before a formal link because this can immediately deliver some of the benefits of linking, such as reducing competitiveness concerns.

⁷⁴ MDDELCC (n.d.).

⁷⁵ Australian Minister Combet & European Commission (2012).

⁷⁶ Tänzler et al. (2017).

For linking analyses, Parties can use two main modeling approaches: first, the optimization models, which are typically forward looking, assuming behavior is in line with economic optimization theory, and importantly are subject to constraints on behavior built into the models; and second, the econometric models, which are typically backward looking, empirically based, and implicitly allow sub-optimal behavior. Frequently, though, forward-looking models will include estimated

parameters based on econometric estimates, which may reflect sub-optimal behavior, and take those as given in projecting future outcomes. Models also differ between top-down approaches (e.g., macro-econometric models) which are typically more aggregated and estimate the effects of linking on the whole economy and general welfare, and more detailed technology-specific, bottom-up approaches that estimate the effect of changes on certain segments of the economy. Hybrid

BOX 3.4: EU-Swiss linking process

Following a number of exploratory talks, the Swiss Federal Council (December 2009) and Council of the EU (December 2010) each authorized a formal mandate for negotiations on linking their systems.^a In total, seven formal negotiation rounds were held from 2011-2015^b interspersed with a few high-level informal meetings (see also Figure 3.5).

In 2011, the first two negotiation rounds largely focused on knowledge exchange about the current status of each system and upcoming reforms of the EU ETS for the 2013-2020 trading period. A negotiation and organizational structure was adopted. Furthermore, provisions for emissions from stationary installations and the aviation sector were identified as key issues for the Linking Agreement.

In 2012-2013, the next three rounds of negotiations focused on questions relating to the emissions registries and on security standards. Both partners aimed to finalize technical negotiations by mid-2014 and developed a draft for the Linking Agreement.

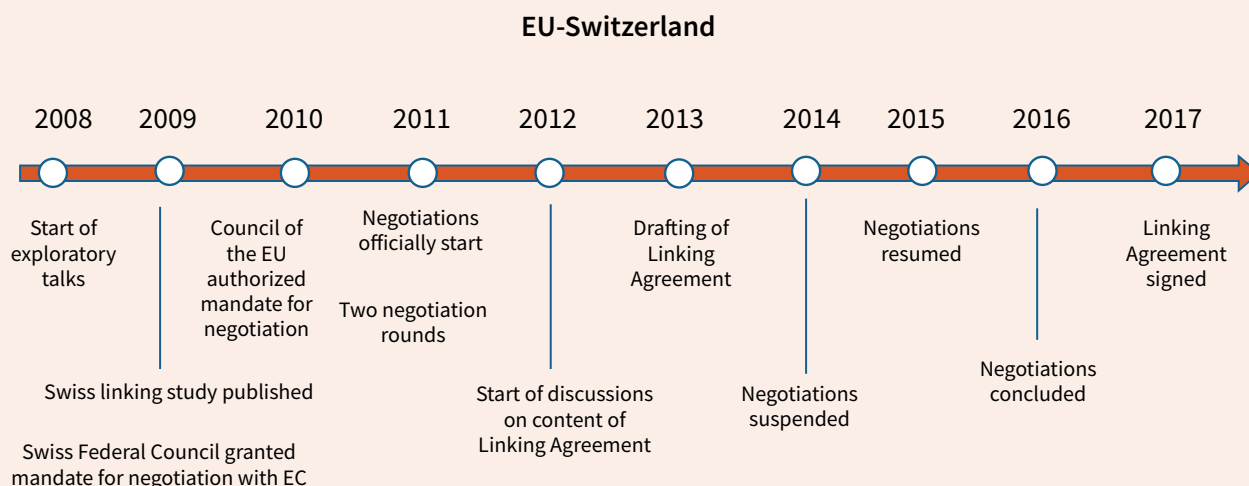
Despite their progress, negotiations were temporarily suspended in 2014 following a rift in relations between the EU and Switzerland as a result of the Swiss referendum seeking to curb immigration. However, linking talks were picked up again in the latter half of 2015 and concluded in the beginning of 2016 following clarification of the major outstanding technical issues with respect to linking, i.e., aviation, registries, security, and auctioning.

In November 2017, the EU and Switzerland signed the Linking Agreement. The link is expected to become operational in 2020, after the ratification of the agreement by both partners.

^a Bundesamt für Umwelt Schweiz (2009); Council of the European Union (2010).

^b Bundesamt für Umwelt Schweiz (2016).

FIGURE 3.5: EU-Switzerland linking timeline



models also exist that seek to combine the advantages of both approaches.⁷⁷

The focus and extent of modeling work depends on the needs and resources of the linking partners, as well as their political culture. If systems are developed in close

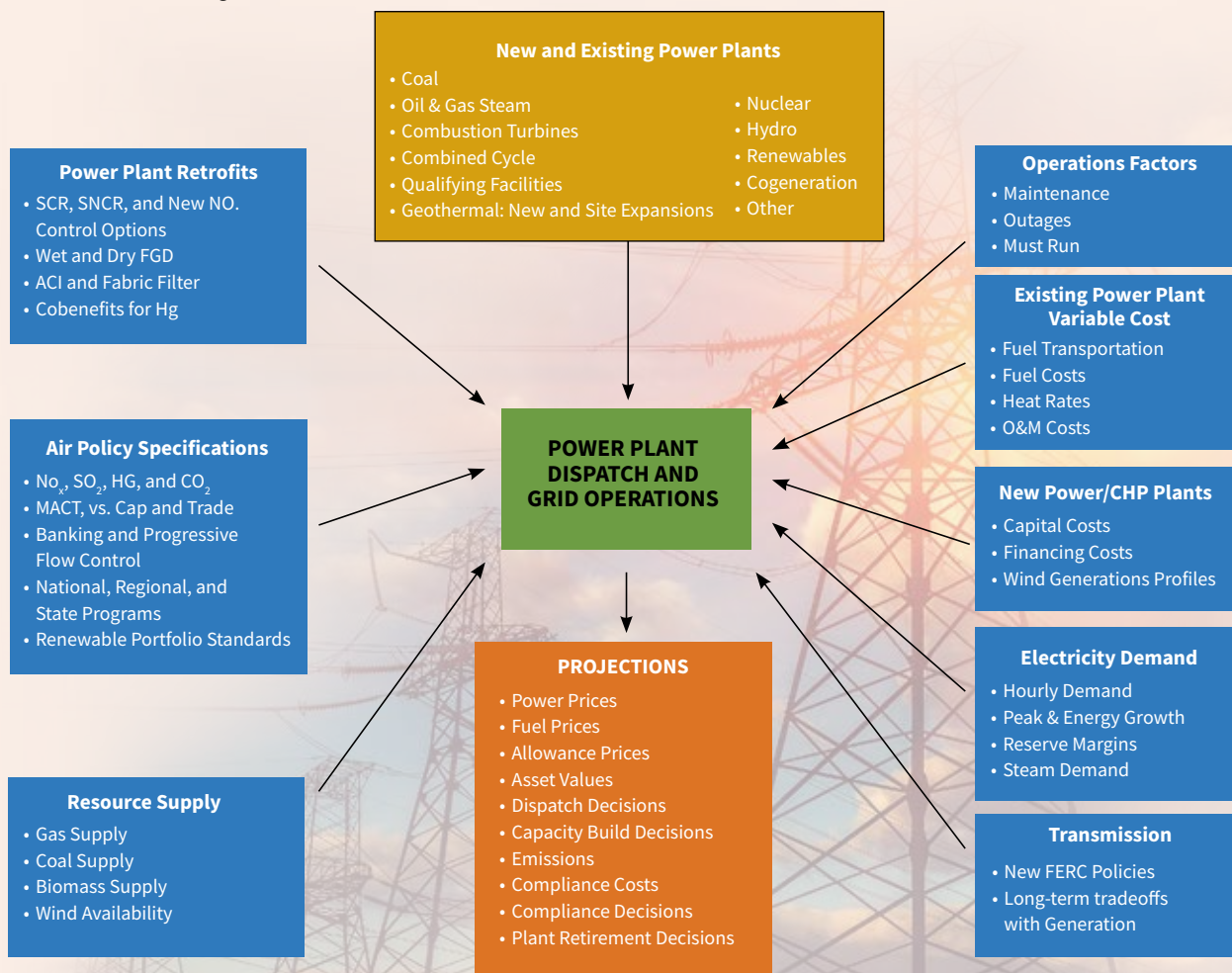
cooperation or if the core parameters for linking are clear from the get-go, modeling work on the impact of linking may be less important. This may be the case where a small jurisdiction’s ETS is only viable when linking to a bigger neighbor or for a significantly bigger

BOX 3.5: RGGI and its modeling work

To assess the technical design of their cap-and-trade program, the RGGI SWG commissioned a study in 2006 to evaluate the impact of implementing a CO₂ cap on the power sector across all the RGGI-participating states, as well as to assess how it would affect the respective states. Based on market assumptions and policy scenarios developed by the working group, a planning model (the Integrated Planning Model® (IPM®)) was run to understand the impact of the program design on allowance markets, electricity markets, and compliance decisions (see also Figure 3.6).^a

In addition, the Regional Economic Models, Inc. (REMI) model also analyzed regional economic impacts, forecasting less than 0.05% decrease in the gross regional product, employment, and real personal income.

FIGURE 3.6: RGGI Modeling



^a Adapted from ICF Consulting (2006).

⁷⁷ For more, see Beuermann et al. (2017).

system that will be the price setter in the linked market. For the former, the case for linking is clear as it cannot launch a system alone. For the latter, the developments and system design of the larger system will generally determine conditions in the linked market.

3.5.6 Factors to consider during linking negotiations

In summary, linking negotiations typically cover the issues illustrated in Table 3.1 below.⁷⁸

TABLE 3.1: Factors to consider during linking negotiations

Issue	Factors to consider
Type of link (for more, see Chapter 1)	
One-way or two-way linking?	<p>Note: Generally, there are fewer issues to address with a one-way link.</p> <ul style="list-style-type: none"> • Is the one-way link an initial step to a two-way link? • Will the link be immediate or introduced in phases over time? • What will these interim phases look like?
Restrictions?	<ul style="list-style-type: none"> • What options for restricted linking are being considered? • How would these be designed and implemented?
Benefits and risks (for more, see Chapter 2)	
Benefits	<ul style="list-style-type: none"> • What are the key benefits linking partners want from linking?
Risks	<ul style="list-style-type: none"> • What are the key risks linking partners need to avoid or minimize when linking?
Timeline	
Planning process	<ul style="list-style-type: none"> • What is the timeline and agenda for the negotiations? • Do linking partners have any legal requirements or processes for linking negotiations? Who has the legal authority to be part of the negotiations? Should external experts and stakeholders also be included, and at what stage? • What issues should or need to be covered? • What are the legal requirements or processes to implement the link? • Have domestic factors (e.g., elections, broader developments in the bilateral relationship) been factored in? • What is the timeline for stakeholder outreach and consultation?
ETS design alignment (for more, see Chapter 4)	
Level of alignment?	<ul style="list-style-type: none"> • What level of alignment is desirable and achievable? • Do jurisdictions want to develop a common template for the linked market prior to implementation? • Should any principles or criteria be adopted or developed to guide the alignment/negotiation process? • Will there be elements of the linked market that will be operated jointly?
Stage of ETS development	<p>If the ETS is still under development:</p> <ul style="list-style-type: none"> • How far along is the jurisdiction in the design and implementation process? • Can adjustments for the linked market be sequenced into the broader legislative/regulatory process? • Is there a common template or are there design recommendations for the linked market to guide the ETS development?
Stage of ETS development	<p>If the ETS is already operational:</p> <ul style="list-style-type: none"> • Are there any existing criteria or requirements laid out in the legislation for a linking partner to fulfill or a linked market to comply with? • What design elements need to be covered in the negotiations?
Effects on the market	<ul style="list-style-type: none"> • What are the expected effects of the link on the market as a whole and on the linking partners? • Should studies be commissioned or undertaken? • Are there any potential risks that need to be mitigated against? If so, how can this be done?

⁷⁸ Some of these issues are also discussed by Görlach, Mehling, & Roberts (2015).

Table 3.1: Factors to consider during linking negotiations (*continued*)

Issue	Factors to consider
Stakeholder consultation (for more, see Chapter 5)	
Outreach	<ul style="list-style-type: none"> • Have linking partners considered when and how stakeholders will be involved in the linking process and will this already take place during the negotiation phase?
Linking agreement (for more, see Chapter 6)	
Content	<p>Legal requirements</p> <ul style="list-style-type: none"> • Are there topics that legally need to be included in the linking agreement? <p>Scope of agreement</p> <ul style="list-style-type: none"> • What topics should the linking agreement cover? • Are there issues that can be addressed in other documents or legislation? • Which issues, if any, should be covered in an annex as opposed to the main body of the agreement?
Future links	<p>Nature of agreement</p> <ul style="list-style-type: none"> • Is this a one-off linking agreement or should the document serve as a reference framework for future links?^a • If the latter, how does this change the envisaged content of the document and its framing?
Institutional arrangements (for more, see Chapter 7)	
Management responsibilities	<ul style="list-style-type: none"> • How will coordination and decision making in the linked market work on both the political and technical level • Which aspects of the linked market need to be managed jointly, and where should jurisdictions retain individual responsibility? • For elements that are jointly managed, how will this be coordinated? • Should an institution (if any) be designated to manage the link? • Should a new institution be established? If so, when and how should this be implemented?
Stage of ETS development	<p>If the ETS is still under development:</p> <ul style="list-style-type: none"> • How far along is the jurisdiction in the design and implementation process? • Can adjustments for the linked market be sequenced into the broader legislative/regulatory process? • Is there a common template or are there design recommendations for the linked market to guide the ETS development? <p>If the ETS is already operational:</p> <ul style="list-style-type: none"> • Are there any existing criteria or requirements laid out in the legislation for a linking partner to fulfill or a linked market to comply with? • What design elements need to be covered in the negotiations?
<p>^a Note that the current legislature cannot bind the future legislature (except through constitutional amendments), so no template will necessarily be final for future links, but may rather act as a reference framework.</p>	

3.6 IMPLEMENTATION PHASE

The implementation phase covers the time from when the technical details of the linking agreement have been resolved to the operationalization and launch of the linked market. **Steps in this process include the conclusion of the linking agreement, as well as the implementation of the link and the design of the linked market into their respective legal frameworks** (see Box 4.1 for a comparison of the legal processes in the EU and California). This gives jurisdictions the legal

certainty that their linking partner will honor the provisions in the linking arrangements—whether or not the agreement itself is legally binding. In addition, partners may establish new (potentially joint) institutions, adjust or expand existing ones, and sub-contract third-party service providers (see Section 7.4). The linked market then becomes effective as soon as allowances can be traded across the linked system and these transactions are adequately recorded in the registry.

At a glance: process and pathways to linking

- The process of establishing a linked market will be influenced by the relationship with the linking partner, the desired level of ETS design alignment, and the type of link sought.
- Political leadership has been instrumental in creating linking opportunities.
- An agenda for the linking negotiations that map topics for discussion, the order in which these will be tackled, how they will be addressed (e.g., in working groups), and the actors involved helps structure the process.
- Implementing the link and the design of the linked market into partners' respective legal frameworks ensures the linking arrangement will be honored.

CHAPTER FOUR

Design Alignment

4.1 INTRODUCTION




Aligning ETS design elements to enable a robust and well-functioning joint market and avoid any adverse effects is at the core of the linking process. **Partners should have mutual trust and confidence in, and understanding of, one another’s institutions and systems design** to facilitate a smooth negotiation process and functioning linked market. Although systems do not need to be completely identical for linking to occur, some level of alignment is often a pre-condition for prospective partners to proceed with linking.

Ultimately, **linking and the level of alignment are a matter of political choice. Experience suggests that**

establishing a link in practice may require a higher degree of alignment than would be strictly necessary for a joint market to function (see Table 4.1 below).

Some systems also have codified regulations that stipulate which conditions must be satisfied for a link to be established. This is the case in California (SB1018 Requirements) and in the EU (EU ETS Directive, Art. 25) (for more details, see Box 4.1). As discussed in Chapter 2, the policy goals or linking objectives for a jurisdiction’s ETS will affect the design elements that need to be considered in linking negotiations, as well as their level of alignment.⁷⁹

TABLE 4.1: Actual and intended links

Linking Partners	EU-Switzerland (pending ratification)	Québec-California	RGGI	Tokyo-Saitama	EU-Norway, Iceland, Liechtenstein
Design elements 	Similar	Similar	Similar	Similar	Similar
Cap target 	Separate	Separate	Common	Separate	Common
Allocation 	Separate	Separate free allocation, joint auctions	Joint auctions	Separate	Joint free allocation, separate auctions

⁷⁹ Also see Beuermann et al. (2017).

BOX 4.1: Express conditions for linking in California and the EU

In California, for the ARB to implement a link with another ETS, the Governor must first make four findings, prior to the ARB approving a linkage regulation. Government Code section 12894(f) and (g) stipulate the conditions as follows:

- The partner jurisdiction with which California would link has to have “adopted program requirements for greenhouse gas reductions, including, but not limited to, requirements for offsets, that are equivalent to or stricter than those” in California.
- California must be able to enforce the cap-and-trade program against any entity within the linked jurisdictions.
- The potential linking partner has to have at least equally strict enforcement capacities for violators.
- The link and California’s participation in the linked market does not impose any significant liability on the state or its agency for any failure associated with linking.

The EU can enter into a linking agreement with any mandatory GHG ETS that is compatible with the EU ETS. The linking system must have an absolute cap and can be operating on the national, sub-federal or regional level.^a

^a Article 25(1a), Directive 2003/87/EC (2008).

Additionally, a level of alignment higher than what would be strictly necessary to link can likely bring the following benefits:

- alignment decreases competitiveness and distributional concerns across the linked system;
- similar regulations and shared governance structures reduce the administrative cost of the joint carbon market and limit opportunities for gaming;
- aligned regulations streamline compliance efforts and obligations for entities operating in multiple jurisdictions involved in the linked system; and
- a higher level of legal consistency strengthens the appearance of a common carbon market, building confidence in the system.

On the other hand, design features in an existing system may be a result of specific political compromises or

have been put in place to achieve specific policy goals. Therefore, adjustments to these design features to align them more closely with the linking partner or as a result of linking negotiations may meet with domestic resistance and may require additional engagement with stakeholders. Conversely, domestic stakeholders, particularly regulated entities, will likely be sensitive to any differences in treatment across the systems—whether or not such distortions actually lead to competitiveness issues. However, such differences may be necessary if they are designed to address specific circumstances in one jurisdiction and are not required in the other jurisdiction.

4.2 FRAMEWORK TO ASSESS ETS DESIGN ELEMENTS

The Guide does not aim to exhaustively map out the effects and considerations of aligning ETS design⁸⁰ in order for systems to link, but rather focuses on the core issues and requirements for policymakers to consider when examining potential linking partners or commencing linking negotiations. This chapter focuses on three criteria that can assist policymakers in considering the core trade-offs when making policy alignment decisions.

4.2.1 System robustness

Ensuring the robustness of the linked system and ensuring that the combined market is sufficiently robust and rigorous to deliver the reductions necessary to comply with the cap encompasses two important aspects:

- **Robust MRV and accounting: Linking partners need to guarantee the accuracy of how emissions are accounted for across the linked market.** This requires a good understanding of, and trust in, the MRV system used in their respective linking partner’s system. Policymakers should have a clear understanding of what kind of emissions are being measured and how they are measured in order to guarantee that a tonne of emission reductions in one jurisdiction is the same as one tonne in the other.
- **Partners must also have sufficient capacity to safeguard the robust functioning of the market and enforce their respective systems.** This requires robust market oversight measures, as well

⁸⁰ Several authors have developed analytical frameworks for ETS design elements based on harmonization requirements. For instance, see Beuermann et al. (2017); ICAP (2014); Burtraw et al. (2013).

as confidence in the enforcement regulations (e.g., penalties) and capacity of their linking partner.

4.2.2 Environmental ambition

Linking partners should be confident their partner’s ETS will drive a certain level of mitigation. As the environmental ambition of the system is largely determined by the cap, the stringency of that cap and the reduction pathway it sets out will be critical factors for consideration. Environmental ambition may be considered in relation to several aspects such as the additionality of the mitigation in the ETS, the strength of the carbon price signal⁸¹ in driving meaningful and timely emissions reductions, flexibility provisions (e.g., the use of offsets), and companion policies that may drive down emissions at sources covered by the cap.

4.2.3 Possible side effects

Linking partners should also be aware that **specific design elements may have possible adverse effects.** Differences in design may give rise to competitiveness or fairness issues if one system is perceived to have a competitive advantage over the other. Although these concerns may be raised when linking is on the agenda, they may already have existed independent of linking due to the initial design of the respective systems. For instance, if system A imposes a heavier compliance burden on a specific sector than system B, entities in system A would face a competitive disadvantage irrespective of linking. In such instances, linking may exacerbate these issues and are topics policymakers may want to consider as part of broader discussions on linking. **On the other hand, differences in ETS design elements could also have beneficial efficiency effects,** such as incentivizing domestic mitigation that will result in a higher level of mitigation.

4.3 STRUCTURE OF CHAPTER

This chapter examines the major design elements following the ten steps of ETS design outlined in the ETS Handbook⁸² assessing their importance based on their relevance to three criteria: system robustness, environmental ambition, and possible side effects. If any of the

design elements raise concerns with regards to these three criteria, this is indicated with an “x” in the table at the start of the section. In those cases where issues arise that would exist regardless of linking (e.g., competitiveness concerns due to differences in the respective system designs) but may still be an issue for policymakers to address during linking discussions, this is indicated by an asterisk next to the “x”. Although flagged as a concern, competitiveness and leakage issues that arise as a result of the system design rather than the link itself are not discussed in detail in the Guide. This Guide is also written to partly reflect the realities of the design of existing (and upcoming) systems; for instance, it assumes linking would only occur between mandatory systems.⁸³

4.4 SCOPE

4.4.1 Gas and sector coverage

Scope	System robustness	Environmental ambition	Possible side effects
Gas and Sector Coverage			x* competitiveness

Generally speaking, differing gas or sector coverage does not pose any technical issues for linking (see Box 4.2 on how this was dealt with in the EU and Switzerland).⁸⁴ If there are differences in coverage, this may give rise to competitiveness concerns, for instance, if it imposes a heavier compliance burden on entities in the same sector in one system compared to the other. This is particularly true when it concerns trade-exposed sectors and the linking partners are in a competitive trading relationship. However, this issue is a result of differences in the respective system’s ETS design and would exist whether or not the two systems link. Linking may actually lessen the competitiveness concern as the differing scope may deliver greater efficiency gains by providing a broader (and potentially cheaper) set of mitigation options⁸⁵ than linking systems with identical sector and gas coverage.

⁸¹ Although allowance price does not entirely reflect the environmental ambition of the system. It is also a result of the available abatement options and underlying marginal abatement costs in that jurisdiction.

⁸² PMR & ICAP (2016).

⁸³ For those interested in linking with voluntary systems, see Sterk, Braun, Haug, Korytarova & Scholten (2006); Tuerk et al. (2009b).

⁸⁴ Metcalf & Weisbach (2010); Sterk & Kruger (2009).

⁸⁵ Sterk et al. (2006).

BOX 4.2: Differing scope in the EU and Swiss systems

Linking between the EU and Switzerland expands the coverage of the Swiss ETS to include aviation and power. Expanding the coverage to include the power sector was not a significant issue for the Swiss system because no fossil fuel power plants currently exist in Switzerland. Thus, although the Swiss power sector will technically be included in the ETS due to the link, it will face no significant impact in practice. The power sector would also be exempt from its current offsetting obligation, as it would be regulated under the ETS and would profit from a level playing field across Switzerland and the EU. It was equally unproblematic to include Perfluorocarbons (PFC) in the Swiss ETS to align it with the EU ETS's gas coverage because Switzerland does not generate any PFC emissions.

Including the aviation sector in the Swiss ETS was more complicated. On the technical side, Switzerland needed to collect data in order to calculate its aviation cap, assign base years, as well as set up an administrative system that would impose the least administrative burden on aviation operators who would have regulations under both the EU and Swiss emissions trading systems. Additionally, there was little support from the Swiss aviation industry for its inclusion.

4.4.2 Point of regulation

Scope	System robustness	Environmental ambition	Possible side effects
Point of Regulation	x		x increased liquidity and abatement options

The point of regulation refers to where emissions are regulated along the supply chain. Systems can either cover downstream emissions (at the point these are actually emitted, e.g., factories or when the good is

consumed), cover upstream emissions (extractors and importers of fossil fuels), or operate as hybrids. **Differences in the point of regulation for the same sectors pose a risk for system robustness as they could either result in double coverage (see Figure 4.1) or a gap in coverage (see Figure 4.2).**

Figure 4.1 provides an example from the electricity sector. If system A (upstream) is a net exporter of electricity to system B (downstream), there is a risk that these emissions will be covered twice.⁸⁶ In this instance, system B may want to exempt the imported electricity from system A.

FIGURE 4.1: Risk of double coverage

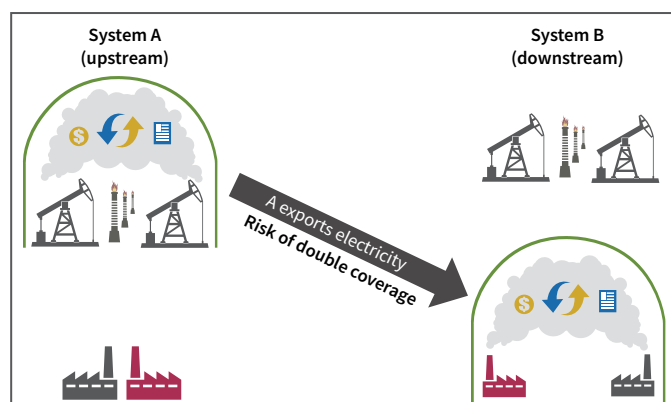
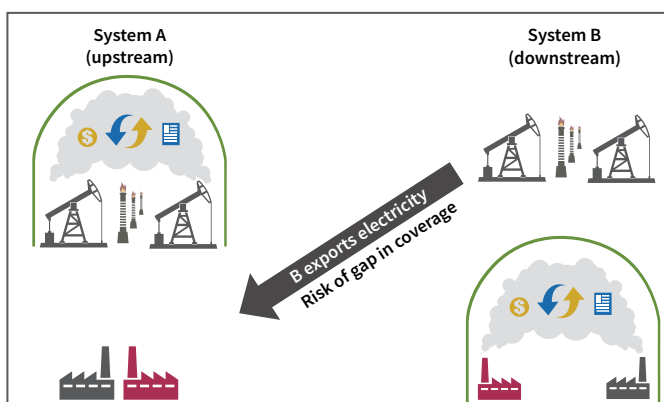


FIGURE 4.2: Risk of gap in coverage



⁸⁶ Sterk et al. (2006); Baron & Bygrave (2002).

Conversely, if system B (downstream) is a net exporter of electricity to system A (upstream), there is a risk that these emissions will not be covered in either system, as fuels are not covered when they are extracted in system B, nor when they are combusted in system A (see Figure 4.2).⁸⁷

As a possible solution, system A could include imported fuels in its ETS. Québec and California regulate both imported electricity and fuels as part of their respective cap-and-trade programs. Alternatively, system A could impose an import tax on imported fuels from system B. However, if this involves a restriction on the international trade in goods, this may be more complicated to implement in practice. Such a measure may be incompatible with the World Trade Organization (WTO), as well as potentially infringe on other bi- or multilateral free trade agreements (for more, see Box 6.4).

Differences in the point of regulation may also increase liquidity with more players entering the linked market. Additionally, the increased number and type of entities that are subject to the linked market could open up more abatement options. However, these differences may pose significant risks in practice as some products may be subject to the carbon price twice or risk not being covered at all (as outlined above in Figures 4.1 and 4.2).

4.4.3 Inclusion thresholds

Scope	System robustness	Environmental ambition	Possible side effects
Inclusion Thresholds			x* leakage and competitiveness

Inclusion thresholds define which entities have an obligation to participate in the ETS; this is often based on their size (e.g., annual emissions) or activity. A lower threshold may be indicated for entities that may wish to voluntarily opt in to the ETS. **These thresholds raise no significant issues, but differences may encourage leakage—although this risk arises independent of whether or not systems link.** For instance, there is a risk for potential investment leakage where two jurisdictions with a similar economic and geographic profile link, and system A has an inclusion threshold of 500

tonnes, whereas system B has an inclusion threshold of 200 tonnes. If a multinational company was going to set up a new plant with a production capacity of 400 tonnes in either jurisdiction, the difference in inclusion thresholds may be a relevant factor. In such a situation, linking offers an opportunity to align thresholds and minimize the risk of investment leakage. Finally, similar competitiveness concerns to those outlined in section 4.4.1 may arise where there are significant differences in inclusion thresholds for industries in the same sector(s) across the linked market.

4.5 OPT-IN/OPT-OUT PROVISIONS

	System robustness	Environmental ambition	Possible side effects
Opt-in / Opt-out Provisions	x		x* leakage and competitiveness

Systems may let entities that are not already regulated by the ETS to voluntarily participate (opt-in provisions) or allow entities under the ETS to leave or exempt themselves (opt-out provisions)—though for the latter case, this is often paired with the condition that they are regulated by another instrument. **These provisions raise similar issues to the inclusion threshold** and are also a function of the pre-linking system design, rather than an issue generated by the link itself. Furthermore, as opt-in and opt-out provisions typically only affect a small share of emissions/entities covered under the ETS; they generally do not raise any significant issues in terms of linking. However, linking with a system that has generous opt-out provisions could make it harder for the system without generous opt-out provisions to reach its cap target (i.e., threaten the environmental ambition of the program) if the cap is not adjusted to account for the departed entities, number of emissions now covered by the ETS. In this case, it would “free up” allowances in the joint carbon market and reduce the overall environmental ambition of the linked market. In turn, this would affect system robustness as fewer reductions will be delivered than outlined by the cap. System robustness would also be affected if the caps were only adjusted in either the opt-in or opt-out situation.

⁸⁷ Ibid.

4.6 CAP ELEMENTS

4.6.1 Cap target

	System robustness	Environmental ambition	Possible side effects
Cap Target		x	

Discussions on each system’s cap relate to the broad and complex issue of assessing the environmental ambition of a potential linking partner, as well as the expected environmental ambition of the linked system as a whole. Whether or not the linking partner’s cap (and cap trajectory) is appropriately stringent is a complex question to answer and will ultimately be a political decision. Partners can also consider whether mitigation targets would be comparatively ambitious in terms of the relative effort each partner would undertake to achieve them and whether they are aligned to the partner’s broader mitigation targets.

Where differences surrounding the ambition of two systems cannot be resolved, an intermediate approach for linking a relatively more ambitious system with one with a cap that could be considered less ambitious might be to restrict linking arrangements (for more, see section 2.7). For instance, the jurisdiction with a more ambitious cap could mandate that regulated entities meet a certain percentage of their surrender obligation with domestic allowances (as was the initial case with the Australian CPM).⁸⁸ Alternatively, a discount or exchange rate could be implemented (for more, see section 2.7).

If a system with an intensity-based target links with a system that has a generous, absolute cap, this can undermine the environmental ambition of the intensity-based target. This is especially the case during economic downturns, when the target of the intensity-based system would adjust downwards to the lower level of production. Assuming there are no other market intervention mechanisms, the absolute cap in the other system would remain unchanged, resulting in a surplus of allowances when the emissions turn out to be lower than expected.

4.6.2 Cap setting

	System robustness	Environmental ambition	Possible side effects
Cap Setting	x		

Assessing a potential linking partner’s cap-setting process is important to ensure robustness is maintained in the linked market. Partners need to be confident that the system will deliver the reductions necessary to reach their target (independent of the level of environmental ambition of that target). Policymakers should consider whether their linking partner’s cap is based on real and accurate emissions data.

Complete alignment of the cap-setting process of already existing systems may not be possible or appropriate; however, partners should aim to ensure processes in both systems are equally rigorous. If some level of alignment is considered desirable by linking partners, aligning the cycle for system reviews and coming to a broader agreement on medium- and long-term mitigation targets could be a helpful step for jurisdictions to ensure a similar cap trajectory or cap-setting process. For Parties that are signatories to the Paris Agreement, the submission of their NDCs (nationally determined contribution) and the updating of their commitments may be a good basis for such discussions. For sub-nationals, the level of ambition of their jurisdiction-wide reduction targets could provide a suitable foundation.

If there is no alignment and a system links to one that has a less rigorous cap, this can threaten the robustness of the linked system. If the cap is set above Business As Usual (BAU) emissions in one jurisdiction, linking could introduce “hot air” (emissions above BAU levels) into the joint market. Such a link would result in a flow of allowances from the less rigorous system to the more rigorous system (given the lower allowance price), which could threaten the robustness of the more ambitious system (even if the robustness of the less rigorous system is then enhanced). If these allowances can be banked, the link could not only threaten the robustness of the current period, but also future periods.

⁸⁸ However, this requirement was never discussed during linking negotiations with the EU so it is unclear whether it would have remained in a linked EU-Australian market.

4.6.3 Absolute caps vs. intensity-based targets

	System robustness	Environmental ambition	Possible side effects
Absolute Caps vs. Intensity-based Targets	x		x* liquidity shocks

Although it is technically possible to link systems that have absolute caps and intensity-based targets, there may be environmental and economic issues. When linked to an intensity-based target, the absolute cap system loses the certainty that its reduction target will be achieved. In particular, if the jurisdiction with an intensity-based target is a net buyer, this will increase the output in that jurisdiction, thereby leading to a higher level of emissions in the linked market. Therefore, policymakers in the absolute system will want to consider putting guarantees in place to ensure a certain level of reduction is met. A tax on traded permits in the intensity-based system may be a possible solution.⁸⁹ Additionally, if a system with an absolute cap linked with a system that has an ex-post intensity-based target, this could lead to liquidity shocks when the intensity-based system adjusts its cap.⁹⁰ Alternatively, restricted linking solutions such as quotas or exchange rates could be put in place (see section 2.7).

4.7 ALLOWANCE ALLOCATION

	System robustness	Environmental ambition	Possible side effects
Allocation			x*

When systems link, prices in the linking partners' systems will converge (see section 2.3.1). As a result, entities in both systems will face one allowance price, alleviating leakage and competitiveness concerns

If a system with an absolute cap linked with a system that has an ex-post intensity-based target, this could lead to liquidity shocks when the intensity-based system adjusts its cap.

across the common market. However, **as the mode of allocation** (for an explanation, see Table 4.2) **affects the direct carbon cost paid by regulated entities, differences in these methods and methodologies may introduce advantages for entities in one system.**

This is especially true when linking partners compete with each other regarding emissions-intensive goods in the international export market. However, such issues would also exist regardless of linking. For instance, if a system with free allocation is linked to a system that auctions allowances, there would be competitiveness concerns as entities in system A receive a wealth transfer in the form of free allowances, whereas entities in system B are forced to purchase them at auction.

In a linked market, differences in the allocation method can give rise to three major concerns:

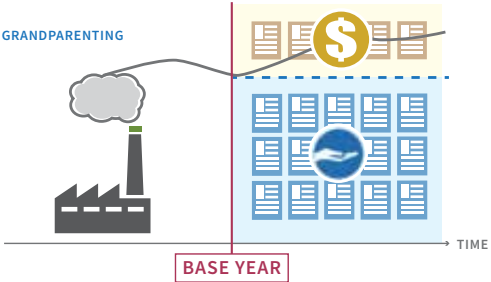
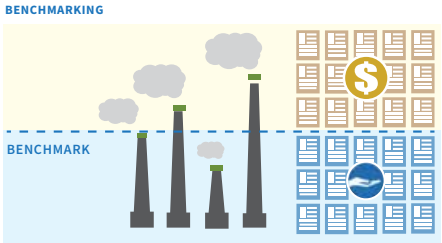
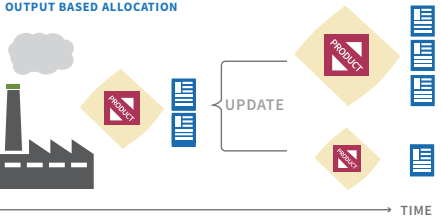

- windfall profits;
- stringency; and
- updating provisions.

First, as entities receive their allowance for free with grandfathering, there is a risk that this can lead to windfall profits. If the grandfathering system (system A) is linked to one that does not allow grandfathering (system B), this may give entities in system A a competitive advantage – even if it is one that would exist regardless of linking. They can also sell these excess allowances to system B. Theoretically, the incentive of free allocation may also incentivize investment leakage from system B to system A.

Second, for systems that distribute allowances based on benchmarks (e.g., output based allocation (OBA) and benchmarking), the issue of benchmark stringency will be relevant for linking negotiations. If those benchmarks are set differently, this means that entities will be subject to different carbon costs that may raise competitiveness concerns – even if those concerns would exist regardless of whether or not systems link. Further, there may be a competitive advantage or disadvantage if a system

⁸⁹ See also Marschinski (2008).
⁹⁰ See Sterk & Schüle (2009); Sterk et al. (2006).

TABLE 4.2: Allocation types

Allocation method	Explanation
<p>Free allocation (Grandfathering)</p> 	<p>Allowances are distributed for free based on historical emissions.</p>
<p>Free allocation (Benchmarking)</p> 	<p>Allowances are allocated for free, based on set performance standards based on the emissions intensity of a product or across the whole sector.</p>
<p>Free allocation (Output Based Allocation (OBA))</p> 	<p>Regulated entities are given allowances based on a sector benchmark multiplied by their economic output, which is then updated at the end of each successive year.</p>
<p>Auctioning </p>	<p>Allowances can also be auctioned, which provides the government with proceeds for investment.</p>

with fixed sector benchmarks links to a system whose benchmarks are frequently updated.⁹¹ In this scenario, the entities that receive their allowances through fixed benchmarks would receive excess allowances during an economic downturn. Entities in the other system would see a reduction in their allowance share as a result of the updated benchmarks. Conversely though, during times of economic booms in both jurisdictions, the OBA system would receive more allowances; no such incentive is provided in the non-OBA system.

These discrepancies and any related concerns would, however, exist regardless of linking.

Finally, if both linking partners use auctioning, they may want to consider joint auctions, as is the case in the WCI and RGGI carbon markets. Joint auctions have several economic and administrative benefits. From an economic perspective, they allow for common price discovery and subsequently a more stable carbon price across the linked market. As joint auctioning

⁹¹ This will depend on the economic cycle, as well as the evolution of the sector overall versus the evolution of a specific entity.

ensures the same closing price, it can also prevent market manipulation. From an administrative point of view, holding joint auctions can create economies of scale and it simplifies the linked market. For instance, because California and Québec developed the joint auctioning platform together, the rules on how to deal with currencies, the release of public notices, bid guarantees, etc., are already aligned. It was more efficient and simpler for Ontario to join a pre-existing and proven platform rather than expend additional resources to develop its own auctioning system. Nova Scotia also joined the Western Climate Initiative Inc., a non-profit corporation that was formed to provide administrative and technical services that support the implementation of emissions trading systems. Nova Scotia will use the IT system of WCI Inc. to administer their cap-and-trade program, which is scheduled to begin operation in 2019.

Systems can also operate in a linked market with separate auctions. As long as there is a common market, the existence of separate auctioning platforms is unlikely to result in different auctioning prices. The member states participating in the EU ETS, for instance, have more than one auctioning platform. However, the same regulatory framework applies across the different platforms. If systems are already auctioning their allowances in very different regulatory settings, the difficulties in aligning the auctioning mechanism could outweigh the benefits of joint auctioning. When the EU and Swiss systems link, they will run separate auctions partly due to legal restrictions on the EU's ability to auction Swiss allowances. Additionally, the EU auctions are run on a private platform subject to specific financial market rules.

4.8 OFFSETS

	System robustness	Environmental ambition	Possible side effects
Offsets	x	x	x* automatic propagation, fairness, and domestic mitigation

Two aspects of offset design are important: offset quantity and quality.

4.8.1 Quality of offset credits

The first issue raised by offsets concerns the **quality of offset credits** allowed in the linked market. If a significant number of offsets of questionable environmental value are allowed in the linked market, this risks the robustness of the joint system. **In practice, some systems have chosen to align their offset provisions.** For instance, the Swiss ETS has amended its offset rules to limit the acceptance of Certified Emissions Reductions (CERs) to projects generated in Least Developed Countries (LDCs). Like the EU ETS, it also excludes offsets from: nuclear facilities; Land Use, Land Use Change, and Forestry (LULUCF); the destruction of industrial gases; and large hydropower projects. **Having a common basis for offsets and robust MRV requirements can help safeguard the environmental ambition and system robustness of the joint carbon market.** In the WCI, for instance, this is ensured by having all participating states respect the guidance outlined in the *WCI Offsets System Essential Elements Final Recommendations* (2010). As long as this guidance is followed, jurisdictions can differ in terms of project types and the geographic location of these projects without endangering the common market. However, different project types and locations may create fairness issues, though these would also exist independent of linking (as discussed below).

Systems may already have pre-existing, different offset regimes or have different priorities in terms of the sectors and activities from which offsets are delivered. In this case, full alignment may be difficult. For instance, the EU and Australia had different offset regimes but Australia adjusted its system, capping its use of Kyoto units and introducing similar qualitative limits to project types as in the EU (e.g., banning large hydropower projects). However, the two jurisdictions differed on the use of LULUCF projects.⁹²

In principle, when faced with substantive differences in their offset regimes, **linking partners should focus on aligning system robustness, ensuring that offsets come from outside the respective systems, are only used once for compliance** (i.e., avoids double counting), and are:

- **real:** reductions or removals that have occurred, rather than those that will happen in the future;

⁹² However, linking discussions were aborted between the EU and Australia before the issue of offsets was officially discussed. Therefore, it is unclear exactly whether this difference would indeed have remained in a linked system.

- **additional:** reductions or removals that are additional to those required by regulation or actions that would otherwise have occurred in a BAU scenario;
- **permanent:** reductions or removals that cannot be reversed⁹³; and
- **verified:** reductions or removals that are verified by an independent entity.

Where complete alignment or common protocols are not possible or desirable, mutual confidence in linking partners' offset methodologies and MRV processes can help ensure offsets do not undermine the robustness of the linked market.

Finally, differences in offset provisions can also raise fairness concerns if one sector is eligible for generating domestic offsets in one jurisdiction and not in the linked partner's ETS. For instance, Québec allows offsets from small landfill projects, whereas a share of emissions in the landfill sector is covered by direct regulation in both California and Québec. However, these fairness concerns were mitigated by the fact that Québec's offset protocol focused only on those landfills that are too small to be regulated in California, thereby ensuring

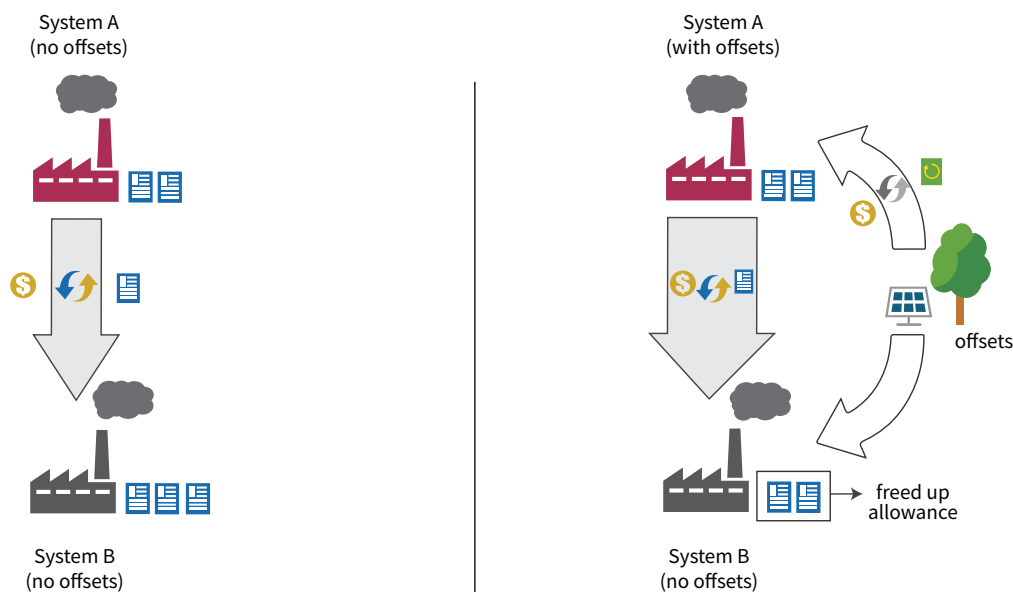
that these offsets were additional to regulations for larger landfills in both jurisdictions.

4.8.2 Quality of offset limits

The second issue centers on the number of offsets allowed in the linked market as this may raise fairness and domestic mitigation concerns, particularly if a linking partner has a generous offset quota (also called quantitative limits). A large number of offsets flowing into the linked market may lower the carbon price beyond what is desirable, reducing the level of domestic abatement and resulting co-benefits.

Even if strict qualitative restrictions are imposed in one jurisdiction, policymakers should be aware that the use of offsets in one system when linked with another system without offsets may have adverse effects on the linked market in the short term as illustrated in Figure 4.3. It frees up domestic allowances that would otherwise have been used for compliance, increasing the total supply of allowances.⁹⁴ It should be noted that even quantitative limits or fees do not address the “freeing up” effect.⁹⁵ The issue of offset limits will also affect the cap target and should also be borne in mind when discussing the cap of the respective linking partners.

FIGURE 4.3: Unaligned offset protocols and “freeing up” allowances



⁹³ Based on the definitions used by the WCI Offset Requirements and California Assembly Bill 32, Division 25.5, §38562(d)(1) and (2). Real, additional, and permanent are also key criteria identified by Burtraw et al. when considering offsets (2013).

⁹⁴ Burtraw et al. (2013); Zetterberg (2012).

⁹⁵ Burtraw et al. (2013).

4.9 TEMPORAL FLEXIBILITY

4.9.1 Banking

	System robustness	Environmental ambition	Possible side effects
Banking			x automatic propagation

Banking initially strengthens the carbon price signal as there is a demand for allowances. The price signal is then smoothed over time as those banked allowances are used for compliance in later periods. However, if a system without banking (system A) links with a system that allows banking (system B) this will automatically propagate banking across the whole linked market. Just as with different offset policies, the availability of banked allowances frees up current vintage allowances for use in the other system. This may raise concerns if system B has particularly generous banking provisions that are also coupled with a generous cap, as this could significantly lower the carbon price when these allowances are returned to the linked carbon market.

Finally, linking partners may want to consider the implications of linking a system with limited banking with one that allows unlimited banking. This could create a price difference as units that could be banked beyond the end of the period would have a higher value.

4.9.2 Borrowing

	System robustness	Environmental ambition	Possible side effects
Borrowing	x	x	x automatic propagation

Borrowing lets regulated entities use a certain number of future vintage allowances from upcoming compliance periods in the current compliance period. Even if the linking partner does not allow borrowing, it is a feature that will automatically be propagated across the linked market. However, linking with a system that allows a

significant share of borrowing risks initially lowering the environmental ambition of the whole linked market as it temporarily weakens the allowance price signal. It also encourages companies to defer mitigation and investments in low-carbon technology. Furthermore, it could affect the ambition of the cap in the long term, as delaying mitigation risks increasing future mitigation costs that would then create an incentive for governments (in addition to pressure from the regulated entities) to set less ambitious caps. However, barring any changes to the cap or cap trajectory, borrowing should also increase the environmental ambition of the system in the long term by the same amount it initially weakens it.⁹⁶ In practice, the issue of borrowing has not been a significant issue for linking given that almost all existing systems do not allow for borrowing.⁹⁷

4.9.3 Compliance periods

	System robustness	Environmental ambition	Possible adverse effects
Compliance Periods			

Linking with different compliance periods may raise the risk of cross-system trading to take advantage of a difference in the allowance price (“arbitrage”). Namely, participants in the system with the longer compliance period may be incentivized to trade prior to the earlier compliance period deadline in the expectation that the price will be lower/higher. However, the existence of other flexibility mechanisms (e.g., offsets, banking, and possibly borrowing), as well as the ability to purchase allowances from different vintage years or forwards, can minimize the risk of arbitrage. In fact, linking with different compliance periods may even increase market flexibility.⁹⁸

4.10 PRICE AND QUANTITY CONTROLS

Practical experience—as well as literature—on the treatment of price and quantity controls in a linked market is limited. These instruments include price floors and ceilings, which are triggered by a certain

⁹⁶ Even though reducing one tonne of emissions in the future would be of less benefit to the climate than reducing one tonne of emissions today.

⁹⁷ The Korean ETS allows borrowing up to 15% of an entity’s compliance obligation within a single trading phase.

⁹⁸ See also Haites & Mullins (2001); Blyth & Bosi (2004); Sterk et al. (2006).

carbon price (see Box 4.3). Reserves like those in RGGI (Cost Containment Reserve (CCR), Emissions Containment Reserve (ECR)) and the WCI (Allowance Price Containment Reserve (APCR)) are also triggered by a threshold carbon price. Conversely, the MSR in the EU ETS is triggered by specific levels of allowances in the European carbon market (see Box 4.4). As these features automatically propagate from one system to the other, some alignment or discussion of their impact on the linked partner will be required. The system with the price or quantity control should also consider how effective this instrument will be after the link, as this may change depending on the extent to which it operates across the linked market.

The situation becomes more complicated if both linking partners have price or quantity controls already operating in their own systems. Even if both partners use the same instrument (e.g., price floor), these may have different triggers, which would also need to be discussed or aligned prior to linking.

As price and quantity controls automatically propagate from one system to the other, some alignment or discussion of their impact on the linked partner will be required.

BOX 4.3: Price and quantity control instruments in the EU ETS

The EU ETS may offer some lessons in how different market stability provisions can work in a carbon market. The UK has been operating a national carbon price floor since 2013. It is applied on top of the EUA price for the power sector in the UK, therefore creating a price differential between the EUA price and that paid by UK generators. Recent evidence suggests that the top-up fee has been effective in driving emissions abatement in the UK power sector.^a However, emissions in the EU ETS as a whole remain bound by the cap. As such, reduced emissions in the UK power sector free up allowances for emitters in other sectors or Member States—otherwise known as the “waterbed effect.”^b

The EU ETS has a number of mechanisms to deal with interactions with Member State policies. On an ongoing basis, the EU has established the MSR (for more on the MSR, see Box 4.5), which will become operational in 2019. The MSR regulates the supply of allowances by adjusting auction amounts based on a set of pre-defined rules about acceptable surplus levels, feed-in and release from the reserve, and a ceiling on the amount of allowances that can be contained in the reserve (starting in 2023). A second short-term mechanism contained in the EU ETS Directive is the possibility for ETS countries to cancel allowances from their auctioning budget in case of closure of electricity generation capacity in their territory. As a longer-term option, revisions can be made to the cap reduction factor to take into account emission reductions that have been achieved via other policy measures.

^a Abrell (2018).

^b Newbery, Reiner & Ritz (2018); Edenhofer et al. (2017).

BOX 4.4: Price controls in linked markets**WCI**

Auction Reserve Price: The WCI jurisdictions makes use of two design elements to both support and contain allowances prices. To prevent prices from falling too low, the WCI jurisdictions use an Auction Reserve Price (ARP), a pre-determined minimum price below which no allowances will be sold to auction participants ^{a, b}. Initially, both California and Québec started with a USD 10 ARP, which increases yearly by 5% plus inflation. Whichever ARP across the jurisdictions is higher (due to changes in inflation and currency exchange rates) serves as the ARP for the joint auction.^c

APCR: In California, if market prices rise too high, the reserve sale administrator will release additional allowances into the market through the APCR using allowances taken from under the cap. Allowances from the APCR may be offered for sale four times a year, six weeks following the regular quarterly auctions. However, to date the price triggers have not been activated and as such no allowances have been released from the reserve. The APCR is often referred to as a “soft price cap”, because the allowance price can rise above the upper price thresholds once all allowances from the reserve have been exhausted. Only entities registered in the California Cap-and-Trade Program can purchase these excess allowances from the California reserve sale. Québec has its own cost-containment reserves; only entities registered in Québec can buy allowances from these reserves, similar to California.^d Sales of the reserves are done separately by each jurisdiction, but through the common auctioning platform.

Price Controls in California (2020-2030, AB 398)

In July 2017, the Californian legislature adopted AB398, which amends certain provisions of AB 32 (the *California Global Warming Solutions Act* of 2006),^e and clarifies the role of the Cap-and-Trade Program in achieving the 2030 reduction target of 40% below 1990 emissions. The Bill requires ARB to set a “hard” price ceiling and to make changes to the APCR after 2020. Specifically, ARB must set two price containment points at which two-thirds of the allowances in the APCR by the end of 2017 (divided equally) will be released for sale post-2020, and any allowances in the APCR at the end of 2020 will be made available at the price ceiling in 2021 and beyond. In contrast to a soft price cap, a hard price ceiling sets the maximum price at which allowances would be sold. To help maintain the environmental integrity of the program, the Bill also requires ARB to make an unlimited number of metric tonnes of reductions available at the price ceiling if needed for compliance. Where this trigger price will be set and how it will be operationalized has not yet been confirmed. The level will be based on a number of considerations, including: (i) the impact on households, businesses, and the economy; (ii) other price controls in the cap-and-trade program; (iii) the social cost of carbon; (iv) the potential for both environmental and economic leakage; and (v) the cost of achieving California’s statewide reduction targets.

RGGI

Auction Reserve Price: RGGI has an auction reserve price floor that prevents prices from falling below a certain threshold. In 2018, the reserve price in the auction stood at USD 2.20, rising by 2.5% each year thereafter.

Cost Containment Reserve: The system also has a Cost Containment Reserve (CCR) that releases allowances (additional to the cap) onto the market when market prices spike. In 2017, the CCR-triggering price was USD 10, rising 2.5% per year going forward. The same reserve price applies to regulated entities across the RGGI member states, and all of them can take advantage of the extra allowances when the CCR is activated.

ECR: As part of its latest program review, RGGI will also implement the Emissions Containment Reserve (ECR) in order to reduce the need for future bank adjustments.^f The ECR will apply a reserve price to approximately 10% of allowances to be auctioned under the cap, at a price level above the price floor. Consequently, those designated allowances will not sell if the price falls below the ECR price trigger, creating a gradual adjustment in the supply of allowances as the auction price varies. The ECR price trigger will begin at USD 6 in 2021 and will rise annually by seven percent compared to the previous year.

^a This is due to differences in the currency exchange rate and inflation in the respective jurisdictions.

^b ARB (2017a).

^c In 2018, it is the highest of Québec’s (CAD 14.35), Ontario’s (CAD 14.68) and California’s (USD 14.53) annual price (ICAP, 2018a).

^d ICAP (2018a).

^e This establishes California’s 2020 emissions reduction target and directs the ARB to develop a Scoping Plan with regulations, market mechanisms and other actions to achieve such reductions.

^f **Note:** New Hampshire and Maine do not intend to implement the ECR.

4.10.1 Price floor

	System robustness	Environmental ambition	Possible adverse effects
Price Floor			x automatic propagation

A price floor, even if only present in one of the linked jurisdictions, will effectively apply to the whole linked market due to arbitrage trading. This could have potentially positive or negative effects. For example, if only jurisdiction A has a price floor, this would imply all of the allowances in jurisdiction B would be sold first if the price is below the floor, reducing revenue for jurisdiction A. Alternatively, this would lead to more revenue for jurisdiction B, which may balance out any potentially negative backlash (e.g., from certain stakeholders) of having a higher carbon price and compliance cost. If the price floor is set above the price in the linking partner (and that partner does not have a price floor), this could also increase the environmental ambition of that system.

Whether the price floor has a positive or negative effect on environmental ambition depends on multiple factors, including relative market sizes and the design of the price floor itself.

4.10.2 Price ceiling

	System robustness	Environmental ambition	Possible adverse effects
Price Ceiling	x	x	x automatic propagation

If a price ceiling exists in one system, it will effectively apply to the whole system in a similar manner to the price floor (see section 4.10.1). A low price ceiling may also weaken the cap, as the cap would effectively cease to exist once the ceiling had been reached if those additional allowances have come from outside the cap.⁹⁹ If allowances are additional to the cap, this weakens the system robustness and consequently also environmental ambition of the linked market. If allowances are

sourced from inside the cap, this would not have the same effect on the linked market.

In practice, linking partners have almost always chosen to adopt nearly identical mechanisms, as is the case in California and Québec, as well as among the RGGI states¹⁰⁰ (see Box 4.2). Although Australia had a price floor and surcharge on the surrender of international units, both provisions were repealed during linking negotiations with the EU. Nevertheless, in principle, a linked market can function without the adoption of aligned price and quantity controls in both systems. For instance, the EU ETS' Market Stability Reserve (MSR) will only apply to the European carbon market even when it is linked with the Swiss ETS.

In such cases, linking partners should consider the impact of the non-aligned approach on the system without the price/quantity control, particularly given that the mechanism would not function as effectively were it to directly apply only to one market. However, if partners understand and accept these impacts, then it may not be necessary to adopt an identical mechanism nor also have it directly apply to the linking partner's system. The situation becomes more complicated if linking partners have mechanisms in place that differ in design or nature.

4.10.3 Quantity-based mechanisms

	System robustness	Environmental ambition	Possible adverse effects
Quantity Mechanisms		x (positive)	x automatic propagation

To date, the EU is the only existing ETS to have opted for a *quantity-based mechanism* (see Box 4.5). Although the EU ETS will be linked to the Swiss ETS, the MSR will not apply to the Swiss market. The operation of the MSR will still indirectly affect the supply of and demand for allowances in the Swiss market. However, the exclusion of the Swiss carbon market from the MSR is unlikely to hamper the effectiveness of the MSR given that the Swiss ETS (cap in 2018: 5.2 MtCO₂e) is significantly smaller than the EU ETS (cap in 2018: 1,839 MtCO₂e). Linking partners should assess the impact of the mechanism on the joint market. The effectiveness of the mechanism

⁹⁹ See also ICAP (2014); Burtraw et al. (2017a).

¹⁰⁰ Although Maine and New Hampshire do not intend to implement the ECR.

would improve if it applied to the whole linked market; however, there may be political challenges with the intervention of one system so directly in another’s ETS.

Several systems have implemented or will implement reserves that add or withdraw a certain number of allowances onto the market based on specific price triggers or the number of total allowances in circulation. For instance, in the WCI, when allowances are not all sold at auction, they are temporarily set aside. However, they may be re-introduced into the linked market after two consecutive auctions where allowances were sold at or above the minimum Auction Reserve Price (ARP). Similar to the issue of other market controls, **linking partners need to assess the impact of having a reserve that would automatically propagate from one linking partner to the other.** Depending on the triggers and the number of allowances that would be added or withdrawn by the reserve, this could have a significant impact on both the environmental ambition and proper functioning of the linked market. Similarly, one could also imagine a situation where both linking

partners have a reserve that uses different prices or quantity triggers. For instance, if the RGGI carbon market were to link with the WCI carbon market, both systems would have to navigate the complexity of linking a system with two cost-containment reserves operating at significantly different price triggers, in addition to RGGI’s upcoming ECR.

4.10.4 Other adjustment mechanisms

	System robustness	Environmental ambition	Possible adverse effects
Other Adjustment Mechanisms	x	x (positive)	x automatic propagation

Jurisdictions may also have systems that delegate considerable market intervention powers to a committee, as is the case in the Republic of Korea where the allocation committee has the discretion to implement a variety of measures from price floors to adjusting allocation, offset, and borrowing provisions. Dealing with a delegated authority that has the power to impose a wide range of measures will likely be even more challenging than the discussion of a specific price or quantity control. At the same time, the use of such a committee could be an opportunity for linking partners to establish a common adjustment framework for their respective systems. A committee could be composed of representatives from both linking partners with a shared and transparent institutional framework. Rather than making adjustments to specific market adjustment mechanisms or trigger points, agreeing on a common process and institution may provide an easier pathway for both partners.

BOX 4.5: Quantity controls in linked markets

EU and Switzerland

MSR:

The EU will implement a MSR in 2019 that aims to address the current surplus of EUAs. By adjusting the supply of allowances marked for auctioning, it also aims to improve the ETS’ resilience.^a It is an automatic adjustment mechanism that takes or adds a share of allowances from future auctioning volumes when the total number of allowances in circulation goes above or below certain thresholds (maximum: 833 million; minimum: 400 million). In its first five years of operation, if the total number exceeds the upper limit, 24% of the total number of allowances in circulation will be removed from future auctioning volumes and placed in the MSR. If it is less than 400 million, 100 million allowances will be injected into the market from the reserve. The thresholds and intake rate will be reviewed before 2023 by the European Commission. Furthermore, from 2023, if allowances in the MSR exceed the auctioning volume of the preceding year, these allowances will be cancelled. Switzerland will not implement an equivalent MSR partly due to the complexity of the instrument and the lack of a significant oversupply in the Swiss market. However, Switzerland plans to include an option to cancel allowances in the future should there be a significant surplus.

^a European Commission (2017a).

4.11 COMPLIANCE AND OVERSIGHT

4.11.1 MRV

	System robustness	Environmental ambition	Possible adverse effects
MRV	x		

A robust MRV system is important in order to safeguard the robustness of the linked carbon market. Linking partners need to be able to trust each other’s systems

and have confidence that a tonne is a tonne across the joint system. Given the unique economic and sector makeup of certain jurisdictions, striving for completely identical monitoring, reporting, and verification (MRV) requirements prior to linking could prove challenging and may not be necessary in every case. At the same time, some element of similarity may already be present if jurisdictions follow internationally accepted standards, such as the Intergovernmental Panel on Climate Change (IPCC) guidelines or the International Organization for Standardization (ISO) standards. For instance, within the WCI carbon market, California has different verification requirements than Québec. However, both jurisdictions have verification procedures that are based on the same ISO standards and are consistent with the same WCI common reporting and verification guidance.

Aligning some essential elements can help ensure linking partners have consistent MRV requirements in their respective jurisdictions, such as measurement units,¹⁰¹ measuring methodologies, and methods of dealing with measurement uncertainties and scope (e.g., which entities are being monitored and which gases). Aligning key elements of the emissions report, such as the format and presentation, as well as terminology definitions, would also be beneficial.

4.11.2 Registries

	System robustness	Environmental ambition	Possible adverse effects
Registries	x		

Partners should decide whether they want to operate a joint registry or have separate, linked registries. Using one joint registry may allow for economies of scale and enable smoother coordination between linking partners as they have access to all the market information. Because a single registry comes with built-in processes and procedures, this avoids the need for any additional alignment between the linking partners in this respect. Furthermore, by making market monitoring more efficient, a joint registry can also help prevent fraud. A shared registry can also build market confidence in the common market. This is the case in RGGI and the WCI carbon markets, where one common registry is used.

In contrast, for the EU link with Switzerland, a direct link will be implemented between the EU and the Swiss registries. This would have also been the arrangement for the EU-Australia link. Although both registries will continue to run and be administered separately, the EU and Switzerland will cooperate closely to preserve system robustness and develop common operational procedures where necessary. In the case of separate, linked registries, both must be sufficiently robust because any case of hacking, fraud, or market manipulation in one registry risks “contaminating” the other registry.

Whether partners decide on a joint registry or opt to operate separate, linked registries, they should ensure that:

- the allowance data is tracked consistently; and
- the handling of market-sensitive information is discussed and aligned. This includes the implementation of procedures to handle market intelligence, the joint release of market-relevant information (content and timing), and security procedures to reduce the risk of fraud and manipulation.

4.11.3 Penalties

	System robustness	Environmental ambition	Possible adverse effects
Penalties	x		x

Financial penalties for non-compliance with the ETS regulation ensures entities submit their allowances on time. Failing that, or in addition to that, an equivalent non-financial penalty could be imposed. Penalties do not need to be identical, but the obligation to surrender missing allowances should be comparable and sufficiently stringent. This is essential to safeguard system robustness. Alignment also gives market entities confidence that fair compliance is taking place across the linked market.

If a linking partner has a financial penalty in place that is lower than the carbon price in the whole linked market, this could affect the environmental ambition of the linked market. In this instance, there is little

¹⁰¹ For instance, RGGI uses short tonnes rather than metric tonnes. If these differ, then one system would have to adjust its unit of measurement or a conversion factor would be required to ensure equivalency across the linked market (Burtraw et al., 2017b).

incentive to comply with the ETS and the penalty will function as a price cap. However, financial penalties in most systems are significantly higher than the allowance price; therefore, this risk is currently quite small. Although systems may want to align different penalty levels, differences in the broader enforcement regime may already pre-determine how the linking partners can respond to non-compliance (i.e., the rights and powers of specific regulators and/or policymakers in this regard). Furthermore, as the RGGI and WCI carbon markets illustrate, alignment of penalties beyond the surrender requirement has not always been pursued in linked systems.

4.12 OVERVIEW OF POTENTIAL ISSUES TO CONSIDER WHEN ALIGNING SYSTEMS

Table 4.3 highlights the issues raised by major design elements in an ETS. To ensure system robustness, the accounting framework of both linking partners must be robust and partners need to have confidence in each other's ability to monitor and enforce their ETS. The cap-setting process, the existence and design of a price ceiling, as well as the use of flexibility mechanisms

such as borrowing and offsets, will also affect system robustness. For environmental ambition, partners need to have a solid understanding of, and be satisfied with, their partner's cap—particularly if there is a link between an ETS with an absolute cap and one with an intensity-based target. In addition, market intervention mechanisms—such as price floors and other adjustment mechanisms—will also affect environmental ambition; if left to operate without any additional alignment or coordination, these mechanisms may also have additional side effects on the linked market. Borrowing and the use of offsets will also affect environmental ambition. In terms of possible side effects, differences in coverage and allocation raise the most significant risks in terms of potential competitiveness concerns. Inclusion thresholds, as well as opt-in/opt-out provisions, should also be considered. Second, there is a risk that flexibility provisions (e.g., offsets, banking, and borrowing), as well as any price- or quantity-based controls (e.g., price floors, price ceilings, quantity mechanisms, and other adjustment mechanisms) from one linking partner are automatically propagated to the other.

At a glance: design alignment

- The level of ETS design alignment is ultimately a political decision. In practice, the level of alignment is higher than what would be strictly necessary for a linked market to function.
- To ensure system robustness, the accounting framework of both partners must be sufficiently robust. Partners must also have confidence in the ability of the linking partner to monitor and enforce their ETS.
- To ensure a certain level of environmental ambition, partners need to assess the level of their linking partner's cap.
- Competitiveness concerns and the automatic propagation of certain design elements from one system to the other are the main side effects policymakers should look out for.

TABLE 4.3: Overview of design elements and linking concerns

	System robustness	Environmental ambition	Possible side effects
Gas and sector coverage			x* competitiveness
Point of regulation	x		x
Inclusion thresholds			x* leakage and competitiveness
Opt-in/Opt-out provisions	x		x* leakage and competitiveness
Cap target		x	
Cap setting	x		
Absolute caps vs. intensity-based targets		x	
Allocation			x*
Offsets	x	x	x* automatic propagation, fairness, and domestic mitigation
Banking			x automatic propagation
Borrowing	x	x	x automatic propagation
Compliance periods			
Price floor		x	x automatic propagation
Price ceiling	x		x automatic propagation
Quantity-based mechanisms		x (positive)	x automatic propagation
Other adjustment mechanisms	x	x	x automatic propagation
MRV	x		
Registries	x		
Penalties	x		x

CHAPTER FIVE

Stakeholder Perspectives

5.1 INTRODUCTION

Although linking may be beneficial for the linked market as a whole, different groups of stakeholders (e.g., companies, government agencies, non-governmental organizations (NGOs), or the general public) will be differently affected, and may have different interests than those negotiating the link.¹⁰² **Successful linking, therefore, will also depend on the meaningful engagement of key stakeholders throughout the linking process.**

This chapter covers the main aspects of stakeholder engagement from general objectives, identifying stakeholder groups, to when and how such groups can be engaged. Four main challenges for stakeholder engagement are then outlined alongside suggestions as to how jurisdictions can best respond to, and plan for, such challenges. Following this, common stakeholder views on linking are outlined before concluding with general lessons on stakeholder engagement.

5.2 OBJECTIVES FOR ENGAGEMENT

Stakeholder engagement goes beyond the mere communication of information. Rather, it provides a forum in which concerns about linking can be articulated and potentially addressed, either by the regulator and/or by other participants. This can help policymakers develop linking arrangements that are appropriate for their jurisdiction, thereby bolstering public support for the policy. Additionally, engagement allows policymakers to draw on additional expertise (both outside of government and across different departments) and improves the transparency and inclusiveness of the policy.

Engaging stakeholders in the linking process can serve the following objectives:¹⁰³

- build acceptance and support for the linked market;

- identify issues and potential solutions;
- build understanding and expertise on all sides;
- build credibility and trust; and
- meet statutory obligations

5.3 TIMING

When stakeholders are engaged in the linking process will vary depending on four factors:

- The linking negotiation process: Although the decision to link may be a domestic decision, the diplomatic process of negotiating the link generally falls to the agency responsible for the ETS and the agency responsible for the realm of foreign affairs and/or interstate relations. As such, stakeholder involvement may be less intense during the negotiation phase as compared to purely domestic policy matters, such as the establishment of an ETS. The negotiation process, as well as those actors that can take part (e.g., which level and branch of government) in the negotiations, may already be prescribed in that jurisdiction's legal framework (for more, see section 3.5.3). As such, this will also influence the nature and scope of stakeholder consultation.
- The stage of development of that jurisdiction's ETS: The scope for stakeholder involvement and for changes to the ETS will be greater when the system is in the early design phases compared to one where the ETS is already operational and the legal framework has been finalized. See Box 5.1 for an example of stakeholder engagement during the design phase of RGGI.
- The specific topic under discussion: Stakeholder engagement does not necessitate public consultation for every single step and/or process. There may be certain steps that are highly technical or require specific expertise (e.g., specific legal

¹⁰² Metcalf & Weisbach (2010); Burtraw et al. (2013). Also see Chapter 8 in PMR & ICAP (2016) more generally on how stakeholders are affected by an ETS.

¹⁰³ PMR & ICAP (2016), Chapter 8.

issues) and may thus be less suited to broad stakeholder engagement.

- Legal framework and tradition of stakeholder engagement: The stakeholder engagement process may already be outlined in the respective legal frameworks of the linking partners. In addition, partners may also have their own tradition of stakeholder engagement (e.g., is there a history of extensive stakeholder engagement, do stakeholders generally tend to be actively involved in the jurisdiction’s legislative processes?).

Typically, there are two windows of opportunity for stakeholder consultation in the context of linking.

- The first opportunity is **when policymakers are deciding whether or not to link**, and if so, in discussions regarding the elements of such a link. During this stage, stakeholders may be asked to provide input on the link more broadly and to express support for, or concern about, the impacts of linking on the domestic carbon market.

- A second window for stakeholder engagement may open **when amendments and additional regulations that result from a linking agreement are translated into that jurisdiction’s legal framework**. Here, stakeholders may be given the chance to comment on the proposed changes and, in some cases, may need to give their approval (e.g., members of parliament). Although frequent consultation may be necessary to achieve desired objectives, overly frequent engagement can result in “consultation fatigue” for both stakeholders and policymakers.

5.4 EXTENT OF STAKEHOLDER ENGAGEMENT

Although stakeholder engagement is a key element of the linking process, the number and type of stakeholders to be consulted may vary depending on the purpose of the engagement and on available resources. See Figure 5.1¹⁰⁴ for an example of possible stakeholder groups to be involved when designing and implementing an ETS.

FIGURE 5.1: Stakeholder objectives and stakeholder mapping



¹⁰⁴ Adapted from PMR & ICAP (2016).

A balance should be struck between inclusiveness and administrative capacity, as policymakers may not have the capacity to meaningfully consider and respond to all stakeholder comments. However, stakeholders may be consulted and included to different degrees. For instance, a broad selection of stakeholders may be informed and given the opportunity to provide written comments, while a narrow group of highly relevant stakeholders may be engaged more substantively.

5.4.1 Announcement to link

Governments will also need to consider when to announce their intention to link. This may not happen immediately from the outset as initial consultations with another jurisdiction are likely to be confidential and **partners may want to be sure there is a reasonable prospect for linking before making a public announcement**. Yet in some cases, communicating linking intentions early may help shore up public support for a domestic ETS, as was the case in Switzerland where the support of the Swiss business community for a national ETS hinged on the prospects for linking. Given Switzerland’s relatively small ETS size and its

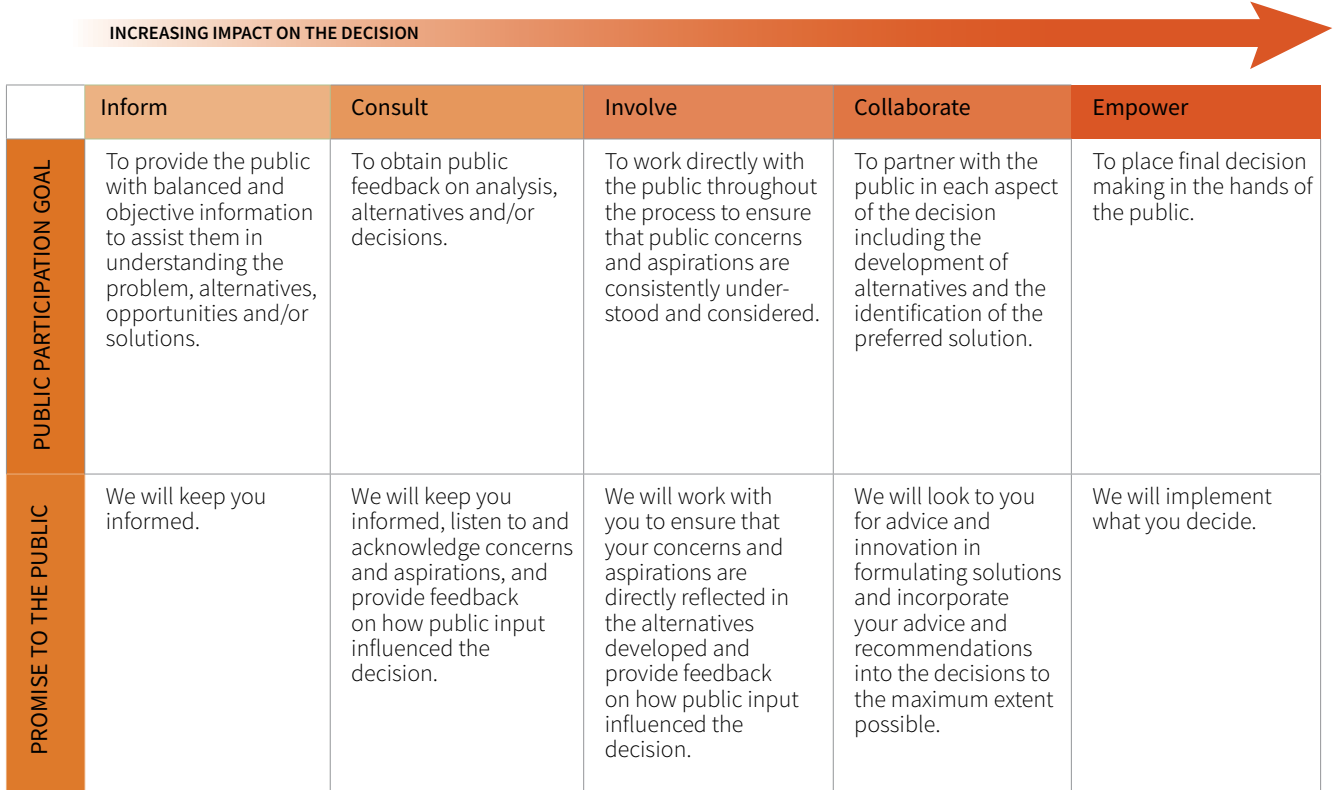
broader trading relationship with the EU, it is unlikely an ETS would have been acceptable to the business community in Switzerland had there not been the opportunity to link with the EU ETS.

5.5 MODES OF INVOLVEMENT

How policymakers choose to engage with stakeholders may vary according to the stakeholders identified, the objectives pursued, and the resources available. Similar to the factors identified in section 5.3, existing legislation may also provide guidance on consultation procedures, as well as the rights and obligations of policymakers and stakeholders. **Outlining clear consultation objectives, requirements, and procedures allows for a transparent and predictable approach that enables a smoother stakeholder engagement process.**¹⁰⁵

The International Association of Public Participation (IAP2) outlines a broad spectrum of different modes of public consultation with increasing levels of involvement. This ranges from information sessions to empowering stakeholders to make final decisions (see Figure 5.2¹⁰⁶ below).

FIGURE 5.2: Public participation spectrum



¹⁰⁵ Organization for Economic Co-operation and Development (OECD, 2012).

¹⁰⁶ IAP2 International Federation (2014).

Stakeholder engagement can take a variety of forms,

ranging from the solicitation of public comments to online discussion fora, and in-person workshops and meetings. Discussions and stakeholder workshops are not only a good opportunity for policymakers to raise awareness and inform affected stakeholders about the linking plans, but also to address and potentially develop solutions for issues raised by stakeholders.

5.5.1 External experts

Involvement of external experts can be useful when dealing with technical topics. For instance, linking may raise legal questions, require sector-specific knowledge, or necessitate modeling. Moreover, the use of external experts can be a way of building support for the linked market. RGGI-participating states relied (and continue to rely) on experts from other cap-and-trade programs and think tanks in their stakeholder workshops (see Box 5.1). Expert analyses and involvement in

the development of the linked market made RGGI more legitimate in the eyes of industry and environmental groups. RGGI-participating states engaged an external consultant to model the energy system for the region based on different emissions trajectories and caps. In addition, Resources for the Future, a non-profit organization, conducted several simulations of the power sector using different approaches to allowance allocation, which played a critical role in educating stakeholders on allocation issues.¹⁰⁷

5.5.2 Linking champions

Stakeholders themselves may emerge as “linking champions” who help convince other stakeholders of the benefits of linking. Having a vocal stakeholder supporting the link, such as the Clean Economy Alliance¹⁰⁸ in Ontario, can take the pressure off policymakers to build support among other stakeholders.¹⁰⁹

BOX 5.1: RGGI stakeholder consultation

RGGI-participating states extensively consulted stakeholders in the lead-up to the launch of the United States’ first carbon market. As the RGGI program was designed and launched as a linked market from the start, stakeholder engagement included both linking issues and those relating to program design in general. In 2004, five years before the scheme’s launch, RGGI-participating states initiated a two-year stakeholder consultation process, which gave an opportunity for power companies, electricity consumers, and environmental groups to provide their input on the system.^a The objective of the RGGI-participating states was to present analysis of the program, as well as to get feedback and input on program design issues. The consultation gave the participating states a better understanding of the potential impacts of the program on the region’s economy (see also Box 3.5). Moreover, the dialogue with stakeholders, combined with the modeling work and input from Resources for the Future (RFF), helped the RGGI-participating states select an appropriate cap and cost-containment mechanism.

As outlined in the RGGI stakeholder process plan (2004), a dedicated stakeholder working group was established to identify regional and national stakeholders (in addition to the existing stakeholder outreach processes of the participating states). The RGGI website was also developed as part of the stakeholder engagement process, establishing a mechanism for stakeholders to share their input, as well as a space for the working group to publish material for public review and comment.

Stakeholders’ comments were included in an analysis that helped with the design of the program, and extensive stakeholder engagement was conducted before all major decisions were made.^b In addition, several states conducted their own stakeholder consultation processes during the program’s first phase to ensure the proper functioning of the linked market. The extensive consultation undertaken by the RGGI-participating states has resulted in broad and lasting political support for the program,^c with both Republican- and Democratic-led states participating in the initiative. The system has also, by and large, withstood electoral changes in the individual states.^d When RGGI was first being developed, the program had limited public support beyond the environmental community. However, by engaging and working with regulated entities, over time a broad constituency in the business community has come to support the program. Opinion polls have pegged residents of RGGI-participating states’ approval of the program at nearly 80%.^e

^a Jones, Van Atten & Bangston (2017).

^b Jones et al. (2017).

^c Although the expenditure of revenue from the RGGI auctions has also been instrumental in building and maintaining public support: For instance- see Page (2016).

^d With the exception of the withdrawal of New Jersey under Governor Chris Christie in 2011. However, on 29 January 2018, the Governor Phil Murphy signed Executive Order 7 directing the New Jersey Department of Environmental Protection (NJDEP) and the Board of Public Utilities to negotiate with current RGGI states to determine how to best re-enter the program.

^e Sierra Club (2016).

¹⁰⁷ Jones et al. (2017).

¹⁰⁸ A group representing 100 organizations in Ontario, including businesses, trade associations, unions, health groups, and environmental NGOs.

¹⁰⁹ Clean Economy Alliance (2017).

5.6 CHALLENGES FOR STAKEHOLDER ENGAGEMENT

Effective stakeholder engagement is heavily contingent on the capacity of both the stakeholders involved and the policymakers. Alongside social, linguistic, and cultural barriers (e.g., multi-ethnic and multi-lingual countries), it may simply be difficult for some stakeholders to mobilize the resources needed to engage in the process. ICAP and PMR (2016) outline risks to effective stakeholder engagement that can be grouped into four categories: procedural, political, communication, and legal. Identifying potential risks and responses can help jurisdictions formulate a risk management strategy to guide the overall engagement process.

5.6.1 Procedural

Stakeholders may feel **overlooked or marginalized**. In addition, there is a risk that **obstructionists and/or interest groups** can capture or disrupt the engagement process. Possible measures to address these risks include:

- **Clear communication of purpose and objectives of the consultation:**
 - o Stating clearly that policymakers are committed to listening to the views of stakeholders before any decisions are made helps maintain the credibility of the engagement process. Clarity on the consultation process and treatment of stakeholder responses can also improve the credibility and transparency of the engagement. For instance, policymakers may seek public comments on draft linking regulations over a specific period, which will inform the next draft of regulations.
 - o Communicating a clear link between stakeholder responses and policy development of the linked market can help elicit useful responses from stakeholders, which give policymakers a deeper understanding of stakeholders' situations and highlight potential risks to linking.
- **Procedural set-up:** How the engagement itself is set up can help minimize the risks of marginalization and capture by certain stakeholder groups.
 - o Jurisdictions should ensure stakeholders are given an opportunity to comment, which can

filter out the propensity of certain groups to dominate the process.

- o Time or word limits on submissions can also help prevent domination by a single stakeholder group.
- o Expert or professional mediators, as well as the assistance of other stakeholders, may help address any tensions. In the long term, if engagement is more than a one-off process, as stakeholders come to know each other, this can also diffuse potential conflict.
- o Structuring input around the objectives of stakeholder engagement can also filter out non-constructive input.
- o To ensure a balance among stakeholder groups, aggregators could be used, whereby each group nominates a representative to participate in the stakeholder engagement process.
- o Finally, if there is real concern that specific stakeholders will obstruct or disrupt the engagement process, governments can also have a conversation with potential disruptors or dominant stakeholders beforehand to manage expectations and better understand their concerns.

5.6.2 Political

Engagement can shine the spotlight on certain issues, creating a **focal point for public opposition and protest**.

Acknowledging consultation as an opportunity to learn about the risks of linking and to build a better linking outcome for all stakeholders can help create a less antagonistic environment for stakeholder engagement. Policymakers should indicate their openness to redefining the ETS linking design or problem definitions when conducting linking negotiations or impact assessments as a result.

- “Linking champions” (see section 5.5) outside of government (e.g., in the private sector) can help persuade other stakeholders.
- Highlighting the co-benefits of linking can help counterbalance these concerns. This may be

particularly helpful when benefits may not be immediately obvious or apparent in the short term.

5.6.3 Communication

Policymakers need to be aware that **misinformation** on linking or emissions trading more broadly can be spread through inaccurate reporting from the media or other stakeholders and they need to know how to counter it.

- Communication strategies should be adjusted to target the concerns and knowledge level of the respective stakeholder groups. **Clear and plain language can be particularly helpful** as ETS is a complex and technical topic that can cause misunderstandings and alienate certain stakeholders.
- If multiple government bodies are involved, ensure there is a coordinated government process so that communications are clear and consistent.
- Proactive communication can help correct misconceptions on linking, for instance, through an evolving FAQ document in response to stakeholder concerns and general reporting on ETS and linking.
- Government representatives may not always be the most appropriate messenger for effectively engaging stakeholders. Policymakers may therefore want to **consider the involvement of institutions or external experts** to help facilitate workshops and commission independent analyses.

5.6.4 Legal

Jurisdictions need to ensure that the stakeholder engagement process is **in line with their regulatory/legislative obligations**. In addition, there is also the risk that stakeholders challenge the government and **litigation** can block or delay the linking process.

Awareness of the legal context in which the jurisdiction is operating is key.

- The stakeholder engagement process should be transparently planned based on statutory or legal obligations, ensuring that sufficient time and resources are available to meet these obligations.

- Implementing opportunities for stakeholders to provide feedback or take up grievances with policymakers can provide a window of opportunity to address these concerns before escalating to legal action.
- **A careful consideration of stakeholder interests and grievances by the jurisdiction, as well as openness to altering the decision to link or the linking design as a result, can negate the need for legal action by stakeholders.**
- If certain stakeholders opt for legal action, careful documentation of each decision reached, alongside a strong and transparent foundation behind such decisions, can help defend against potential lawsuits.

5.7 STAKEHOLDERS' VIEWS OF LINKING

Identifying the relevant stakeholders in a linking engagement process will likely vary on a case-by-case basis. This section focuses on the potential benefits and risks of linking that have been voiced by the following stakeholder groups: government (i.e., politicians or ministries/departments), regulated entities, industry associations, environmental groups, NGOs, and think tanks. How stakeholders in a system view linking will depend on the role they play in the ETS, as well as how they will be affected by the linked market (e.g., any distributional consequences). Stakeholder views on linking will also depend on the envisaged linking partner.

This section outlines four issues that stakeholders have raised in previous linking negotiations. These are:

- relationship with the potential linking partner; and
- compliance costs and competitiveness (for regulated entities); and
- demonstrating climate leadership and ensuring environmental ambition; and
- domestic mitigation, co-benefits and investments in low-carbon projects.

¹¹⁰ ClimateWire (2013).

Each of these aspects is discussed in more detail below.

5.7.1 Relationship with potential linking partner

As outlined in chapter 3, **stakeholders may be more comfortable with the idea of linking when there is a strong pre-existing relationship with the other jurisdiction**, with common policy goals and a similar climate policy framework.

Legislators in California at one point expressed concerns about linking with “far flung jurisdictions” rather than their neighbors.¹¹⁰ In the same vein and as discussed below, industry representatives may be advocates for linking with close trading partners, as this could help reduce competitiveness concerns. Connecting to a robust pre-existing system may also be more palatable to stakeholders than to a system still under consideration or development. Rather than taking a leap into the unknown, a jurisdiction can then link to an established market with a proven track record of emissions reductions.

5.7.2 Compliance costs and competitiveness

Lowered compliance costs

Generally, regulated entities tend to view linking positively if it results in cheaper compliance costs for them (see chapter 2). For example, a report from New York State prior to the establishment of RGGI found a regional approach would be more cost-effective than individual state regulation,¹¹¹ helping to build support among industry (and environmental groups) for a multi-state market.¹¹² In Australia, companies were initially resistant to the high allowance price when the domestic-only CPM was launched.¹¹³ Linking with the EU ETS was seen as a positive move by companies as the price of EUAs was significantly lower, which would make it cheaper for regulated entities in the CPM to meet their compliance obligations using EUAs rather than Australian allowances. In Switzerland, the Swiss business community also cited lower prices in the EU ETS as a reason for supporting a Swiss-EU link.¹¹⁴

On the other hand, linking can also increase ETS compliance costs for entities that do not receive their

allowances for free, but rather must buy them either at auction or on the open market. This is the case for entities in the linking partner with the lower pre-linking price.¹¹⁵ As buyers in this jurisdiction will have to pay a higher price for their allowances after linking, they may not support the link.

Competitiveness concerns

If linking partners have a trading relationship, linking can help level the playing field (i.e., address competitiveness concerns between linking partners) as regulated entities in both systems will be subject to the same allowance price. For covered entities that have this trading relationship, linking will solve this issue. It may even reduce competitiveness issues with third parties if linking results in a lower allowance price. However, broadly speaking, regulated entities will still have to compete with entities outside of the linked market that may be subject to a lower or no allowance price.

Equal treatment of regulated entities

At the same time, regulated entities will observe closely whether the different rules applying across the linked market (i.e., differences in allocation) might result in disadvantages for them and use their lobbying power accordingly. Although many businesses supported the proposed link between California and Québec, they stressed the importance of aligning the respective cap-and-trade provisions to ensure regulated entities are treated equally.¹¹⁶

Long-term policy signal

Linking with another system also establishes a clear, long-term framework for carbon pricing, which allows businesses to incorporate the allowance price into their investment decisions. This can reduce mitigation costs in the future and avoids locking in carbon-intensive technologies. As climate change becomes an increasing concern for businesses, they may also be more supportive of policies, such as linking and a long-term commitment to carbon pricing that provide long-term clarity in this regard.

¹¹¹ Center for Clean Air Policy (2003).

¹¹² Jones et al. (2017).

¹¹³ The Australian CPM began with a temporary AUD 23 fixed price. Had the CPM not been abolished, the flexible price system would have begun in 2015 with an AUD 15 price floor.

¹¹⁴ International Emissions Trading Association (IETA, 2017b).

¹¹⁵ Covered entities that receive more allowances than they need would be in a better position when the price increases as they can sell their excess allowances for more.

¹¹⁶ For instance, see the comments from Chevron Corporation, Pacific Gas and Electric Company, Southern California Public Power Authority, and others in the 2012 Air Resources Board Comments Log. For more, see ARB 2012a.

¹¹⁷ See Burtraw et al. (2017) discussion on the benefits of “linking by degrees”.

Harmonized regulations

Finally, linking can create efficiency gains from harmonized regulations. Businesses that operate across state and national borders, in particular, tend to express their support for a multi-jurisdictional approach to climate change for this reason. For instance, many of the electricity generation companies covered by RGGI own power plants in several RGGI states. Therefore, participating in a regional program makes sense, as having one set of harmonized regulations greatly simplifies the compliance process for these companies. Aligning policies, short of complete harmonization, can still deliver some cost-efficiency benefits.¹¹⁷ Business advocates in IETA have also supported the Pacific Alliance's work on carbon markets, given the potential for a converging regional market with aligned carbon pricing policies in Chile, Colombia, Mexico, and Peru.^{118, 119}

5.7.3 Climate leadership and environment ambition

As attitudes toward carbon pricing and climate change shift within the business community, certain regulated entities may also see linking as an opportunity

to frontload climate action and ease the transition to a low-carbon economy. For instance, Enegir, an energy company in Québec, put out a press release following Ontario's link with California and Québec in support of Ontario's emissions reduction efforts (2018).

From an environmental perspective, civil society stakeholders and green groups may view linking as a welcome opportunity for a jurisdiction to demonstrate leadership on climate change (for more, see chapter 2). While the ARB in California was preparing amendments to its cap-and-trade regulations in order to link with Québec's ETS, environmental groups were particularly vocal in supporting the establishment of the joint market in order to drive further North American efforts on climate change (for more, see Box 5.2).

Yet environmental groups may also express reservations about linking if they have doubts about the environmental ambition of the linking partner or have concerns that linking may dilute their own jurisdiction's broader climate ambition. For instance, when negotiating the link between the EU and Switzerland, NGOs and green parties in Switzerland flagged the relatively low prices in the EU ETS as a potential risk for Switzerland if

BOX 5.2: Stakeholder process in California prior to linking with Québec

The California ARB is legally mandated to inform the public about a proposed link and solicit public feedback before California and Québec could link their cap-and-trade programs.^a The ARB held a series of public hearings and set open comment periods for stakeholders to express their views; it also published a document outlining the reasons for linking with Québec. The vast majority of comments came from environmental groups and regulated entities. During the first three public comment periods, almost all submissions supported the creation of the joint market; however, some questions were also raised concerning the transparency of the decision-making process, the use of offsets, and the workings of the Québec carbon market.^b

Some regulated entities in California argued that the link with Québec would likely cause allowance prices to rise, thus harming businesses' ability to operate in the state,^c while one company publicly opposed the link due to fears that ARB and Québec had not had sufficient time to ensure the cost effectiveness of emissions reductions.^d Although more specifically related to the provisions of the California regulation than the link per se, the Union of Concerned Scientists urged the ARB to establish strict criteria on acceptable offsets.^e In response to the public comments received, the ARB directed its staff to propose regulatory amendments in light of specific stakeholder concerns and agreed to ensure the environmental value of offsets in the system.^f

^a California Administrative Procedure Act.

^b ARB (2013b).

^c Burns (2012).

^d Covert (2012).

^e Haya (2012).

^f ARB (2013b).

¹¹⁸ Although alignment will not necessarily eliminate the separate compliance requirements (and transaction costs) for each jurisdiction. This is only possible with fully harmonized conditions across the linked jurisdictions.

¹¹⁹ IETA (2017a).

¹²⁰ Shifting abatement effort and the ancillary benefits of mitigation are also issues that arise regardless of linking. This is because an ETS does not mandate where and when abatement should take place, but rather encourages abatement activity where it is most cost efficient.

¹²¹ Flachsland et al. (2009).

it wants to deliver a certain level of long-term emissions reductions.

5.7.4 Implications for domestic abatement and low-carbon investments

Stakeholders may also be concerned about the possible dampening effect of linking on domestic low-carbon investment (for more, see section 2.8.1). Environmental groups and citizens of the net buyer jurisdiction may criticize this ‘outsourcing’ of abatement efforts,¹²⁰ where their covered entities finance climate action in another part of the linked system. This is also because the local co-benefits, though still in the linked market, may be displaced from that jurisdiction.¹²¹

Second, where allowances are auctioned, government revenues will also be affected by linking. In the jurisdiction with a lower post-linking allowance price, revenues from auctioning will shrink. For instance, in Australia the post-linking price would have been lower, tracking more closely to the price in the European carbon market,¹²² especially as the Australian government had

decided to remove the AUD 15 price floor. Linking with the EU involved a trade-off. On the one hand, regulated entities would benefit from the cheaper mitigation opportunities in the EU; on the other hand, there would be a significant loss of auctioning revenue (estimated to be between AUD 3-5 billion annually) as capital flows and mitigation shifted to the EU.¹²³ However, in the jurisdiction with a higher post-linking allowance price,¹²⁴ the auctioning revenue will increase and may allow that jurisdiction to achieve more welfare benefits.

5.8 STAKEHOLDER ENGAGEMENT

Although a balance must be struck between engagement and administrative capacity, stakeholder engagement gives policymakers a valuable opportunity to better understand the effects of linking on their economy and stakeholders. They may also amend their decision to link and the proposed design of the linked market as a result. This can ensure a more successful linked market and build a supportive coalition for linking and carbon pricing.

At a glance: Stakeholder perspectives

- There are generally two opportunities for stakeholder consultation: when policymakers are deciding whether to link, and when the design of the linked market goes through the domestic legislative/regulatory process.
- The stage of ETS development, as well as the legal framework for both the linking negotiations and stakeholder engagement, will influence the nature and scale of stakeholder involvement.
- Jurisdictions must be clear on the role of the stakeholder engagement. This includes a commitment by policymakers to listen to the views of stakeholders. Because stakeholder engagement is a process for mutual learning, policymakers should also be open to amend its decision to link, as well as the design of the linked market. In addition, this improves the credibility and transparency of engagement.
- The effects of linking on compliance costs, climate leadership, and domestic mitigation are concerns most often raised in stakeholder consultations.

¹²² Given the EU carbon market was six times the size of the Australian market, Australia would have been a price taker had the link gone ahead.

¹²³ Drummond (2012).

¹²⁴ Assuming there is also auctioning.

CHAPTER SIX

Form and Content of a Linking Agreement

6.1 INTRODUCTION

This chapter looks at how linking arrangements can be adopted and implemented. A linking agreement is not strictly necessary for the design or operation of the linked carbon market; however, it can help solidify the partnership, providing partners with a shared understanding of the common goals they seek to accomplish and how coordination will look like going forward. As a political document, the linking agreement is also a sign of parties' commitment to the common market and can provide the partner with some reassurance in this regard.¹²⁵ Every case of bilateral linking has involved some form of linking agreement; the multilateral link with California, Québec, and Ontario also had a Linking Agreement. This chapter goes through the pros and cons of these options; it also examines how linking agreements can consider different types of links, linking different levels of governance and possible interactions with the international trade regime. Finally, it concludes with an outline of the typical content of a linking agreement.

6.2 FORM

Linking agreements are typically created either through a binding agreement under international law (such as a treaty¹²⁶), or when linking partners choose to sign a non-binding arrangement outlining mutual understandings and expectations (Memorandum of Understanding (MoU)). Table 6.1 provides a summary of the differences in the two forms. The latter case was adopted by the WCI-participating jurisdictions, in which the California, Québec and Ontario Linking Agreement states that mutual recognition and trading "...of the Parties' compliance instruments shall occur as provided for under their respective

cap-and-trade regulations" (articles 6,7). Similarly, RGGI jurisdictions adopted an MoU, which commits signatory states to adopt the Model Rule in their respective jurisdictions (articles 2, 3B).¹²⁷ The conclusion of the linking agreement is then followed by each jurisdiction adopting amendments to its legal framework in order to operationalize the link.¹²⁸

6.3 INTERNATIONAL TREATY

A treaty provides linking partners with the highest degree of legal certainty as it places binding obligations on the respective linking jurisdictions. Where available, Parties can also take recourse to compliance mechanisms in response to non-compliance or if there is a breach of the treaty terms.¹²⁹ Given the greater legal weight such agreements may carry and the specific procedural requirements for termination of such an agreement, they are harder to exit as compared to an MoU. For large-scale linking ventures, three factors—the scale of cooperation, the market impact, and the number of legal issues to be concluded—may also make a treaty the more appropriate linking arrangement. For instance, the EU has opted to pursue linking via international treaties in its EU ETS Directive.¹³⁰

6.3.1 Negotiation and ratification process

However, the treaty negotiation process, including the ratification of the treaty, can be a time-consuming one. Although the EU Commission and Switzerland signed an agreement to link their systems in November 2017, the link is only expected to become operational in 2020, after the ratification of the Linking Agreement by both partners.¹³¹ Additionally, one or both partners will need to make technical arrangements to establish the link.

¹²⁵ Note the form and content of the linking agreement may be predetermined by other agreements that commit partners to taking the first steps toward linking, such as a joint commitment to explore linking or to align reporting systems.

¹²⁶ A treaty can have any designation as long as its Parties are legally empowered to conclude a binding agreement under international law.

¹²⁷ RGGI (2005).

¹²⁸ Art 25 in Directive 2003/87/EC refers to Article 218 on the Treaty Establishing the European Community, which covers the adoption of international treaties. However, as Mehling and Haites (2008) note, this could constitute anything from a statutory amendment to a simple decision by the ETS administrator depending on the regulatory context. For more, see Görlach et al. (2015).

¹²⁹ Mehling (2007).

¹³⁰ For more, see Mehling (2007).

¹³¹ European Commission (2017c).

TABLE 6.1: Overview of treaties and MoUs

	Treaty	MoU
Scope	Limits on ability of sub-nationals to enter into agreements and cooperate with other jurisdictions	Open to all jurisdictions
Legal certainty	High Binding obligations on jurisdictions Compliance mechanisms if treaty terms are breached	Weaker High-level political document, but less binding and formal than a treaty
Negotiation process	Can be lengthy	Generally faster than treaty negotiations
Amendments	Amendments of treaty body can be a lengthy process	More flexibility to amend body of linking agreement

6.3.2 Intermediate linking solutions

Intermediate linking solutions that do not require a formal treaty can also be put in place prior to the agreement taking effect. Linking partners may start with an MoU and transition to a treaty over time. A linking arrangement via an international treaty can also be accompanied or preceded by a less formal arrangement to help prepare and facilitate the link. This would allow some of the benefits of linking and give regulated entities the opportunity to adapt to the linked market in a gradual manner. Such an intermediate linking solution was envisaged for the EU and Australia (see Box 6.1).

6.3.3 Annexes to an agreement

In addition, parties may move some of the agreement content to an annex, and define an expedited amendment procedure for the annex. Doing so would make it easier to revise certain elements of the linking arrangement in case subsequent changes are required. For instance, while core issues such as emissions accounting and coordination in the linked market are covered in the main text of the Linking Agreement between the EU and Switzerland, the essential criteria that regulated entities in both systems have to meet (e.g., gas coverage, offset limits) are addressed in annexes. Unlike

BOX 6.1: Intermediate linking arrangement between the EU and Australia

Had the link with the EU and Australia gone ahead, an indirect registry link would have been implemented by July 2015 through mutual regulatory amendments by both parties. Following the conclusion of treaty negotiations, this would then have transitioned into a full, two-way link. In turn, this would have enabled a one-way link that would let regulated Australian entities purchase EU allowances and surrender them for compliance^a (see also Figure 6.1). Rather than allowing the direct transfer of units, when an EU allowance was sold to a regulated Australian entity, these units would be held in an Australian government account in the EU Registry. Meanwhile, Australian units would be issued to the purchaser. Upon surrender, the EU allowances held in the Australian government’s account in the EU registry would be cancelled to avoid double counting.

^a For more, see Commonwealth of Australia & European Commission (2013).

the body of the treaty, the Joint Committee charged with administering the Linking Agreement can amend the annexes (or adopt new ones) (Article 13(2)). Any amendments to the Linking Agreement itself would trigger a new ratification process and involve the investment of considerable time and resources.

6.4 MEMORANDUM OF UNDERSTANDING

An MoU is a more informal alternative that can be faster to conclude than an international treaty. As it is less binding and formal than a treaty, it can be concluded more quickly and offers parties more flexibility should any amendments be necessary. Although the MoU itself lacks the formality and legal force of an international treaty, for practical purposes it may be beneficial to have a written agreement in place. As a high-level political document, it does send a visible signal of jurisdictions’ commitment and ensures parties are aligned in terms of their expectations and understanding of how the linked market would function. In the case of sub-national jurisdictions—such as the RGGI-participating states, the WCI jurisdictions, or Tokyo and Saitama—their agreements have been established through MoUs because sub-national jurisdictions generally cannot conclude treaties.

In sum, if the form of the legal agreement has not already been pre-determined, linking partners may want to consider the potential benefits of a treaty versus an MoU. As summarized in table 6.1, **treaties are more legally binding than an MoU but can be a time- and resource-intensive process. Conversely, MoUs may be faster to adopt and amend, although they are less binding on the signatories to the agreement. Regardless of whether parties adopt a treaty or an MoU, they will typically implement the link through domestic laws and regulations.** Aside from operationalizing and endorsing the link, these laws and regulations also give linking partners the authority to enforce the link.

6.5 LINKING DIFFERENT LEVELS OF GOVERNMENT

One barrier to the expansion of regional trading systems is the limitations generally placed on them by national law with regard to their ability to enter into agreements and cooperate with other jurisdictions. Such limitations apply, in particular, to the ability to enter into formal international treaties.

The case of the United States and arrangements within RGGI provides an illustrative example. The U.S. Constitution broadly prohibits states from entering into any ‘treaty, alliance or confederation [...] regardless of title, designation, or form’ (Article 1, section 10). Nor can they enter into any ‘agreement or compact [...] with a foreign Power’ without the consent of Congress.¹³² Although agreements involving trans-border issues, such as curbing pollution, may not require consent, any regional arrangement can always be superseded by national legislation.¹³³ More broadly, subject to its domestic constitutional law, certain arrangements between a regional jurisdiction and one outside of its national borders may require the consent of the national government, especially if these arrangements entail binding obligations or have national relevance. Most regional jurisdictions will therefore have to carefully balance concerns and any limitations imposed on the national level; as well, they would need to consult, if not directly involve, the national level in such negotiations. Even though RGGI-participating

states had only signed a non-binding MoU, participating states still had to ensure the language was drafted in a manner that was not construed as breaching the compact clause. In addition, the RGGI-participating states jointly publish principles after each revision of their Model Rule as a means of expressing their joint commitment to the linked carbon market.¹³⁴

A similar situation arose when Saitama and Tokyo sought to link their cap-and-trade programs. Tokyo worked with their public prosecutors to ensure there were no complications in having a local government (rather than a national government) enter into an MoU concerning regulatory climate change measures.

Conversely, in Canada, federal legislation allows for Québec to negotiate, implement, and administer an international agreement that falls solely within its own jurisdiction so long as it is approved by its provincial National Assembly and ratified by the Government of Québec.¹³⁵ This precedent has also been followed by other Canadian provinces, which engage in para-diplomacy and have entered into their own international agreements without consulting the federal government. Although authority over environmental legislation is shared between federal and provincial powers, GHG emissions from specific, identifiable sources within the respective province may be regulated by that provincial authority; furthermore, the Pan-Canadian Framework on Clean Growth and Climate Change awards provinces flexibility to enact their own carbon pricing legislation.¹³⁶ Québec adopted an amendment to its provincial cap-and-trade regulation in 2012, which allowed it to link its system with California. Upon signing the Linking Agreement with California in 2013, it became mandatory under Québec law. However, as California does not have this same authority, the Linking Agreement contains specific language that differentiates it from a legally binding treaty and keeps it from breaching the two compact clauses of the U.S. Constitution.

Linking or opportunities for carbon markets cooperation could take place within larger agreements that would already pre-determine form and content. For instance, the inclusion of Norway, Iceland, and Liechtenstein into

¹³² Ibid; also see Mehling (2007).

¹³³ Sterk & Kruger (2009).

¹³⁴ See for instance, RGGI (2017b).

¹³⁵ Gouvernement du Québec, “Act Respecting the Ministère Des Relations Internationales.”(2018).

¹³⁶ Becklumb (2013).

the EU ETS took place as part of the broader Agreement on the European Economic Area.

6.6 ONE-WAY LINKING

A number of systems have been linked to the Clean Development Mechanism of the Kyoto Protocol. Arrangements for such one-way links have been relatively straightforward, with, for instance, the EU and New Zealand allowing for the surrender of CDM units in their systems subject to certain conditions. In principle, this could also work for a one-way link with other systems as the link could be operationalized without the substantive involvement and approval of the seller jurisdiction.¹³⁷ However, even though the flow of allowances will only be one way, this will still affect the seller's market. Although the exact impact will depend on the size of the buyer's system and any conditions (e.g., quantitative or qualitative limits) on their purchase, a one-way link would increase the scarcity in the seller's system, increasing the allowance price. To counteract this effect, the seller could attach certain conditions to their allowances that limit the time period in which they could be surrendered for compliance (after which time they would be cancelled and reissued). In reality though, **any one-way link would likely still involve negotiations with the seller system.**

In 2016, the Washington Department of Ecology proposed draft regulations that would have allowed regulated entities surrender allowances from the California, Québec, and RGGI markets.¹³⁸ Partly in response to Washington's proposal, California released regulations that establish a pathway for one-way linking through a retirement-only agreement. Under this arrangement, a formal approval through the regulatory process would need to be conducted by ARB prior to such a linkage. Following such approval, an external holding account would be created allowing entities to purchase Californian allowances for compliance. Unlike a bilateral linking arrangement, outside buyers would be subject to fewer administrative requirements. Should the one-way link with Washington (or any other state) go ahead, additional amendments specifically relating to that program would likely also be released.

6.7 LINKING AND INTERNATIONAL TRADE RULES

The question of whether and how the linking of carbon markets is consistent with WTO's international trade rules reveals significant legal uncertainty and is an issue of continuing debate.¹³⁹ This is because a linked market could be construed as restricting trading rights to partner countries, potentially violating the principle of non-discrimination. However, it is highly probable that allowances are not covered by WTO guidelines as they do not have the character of a "product" or a "service" as understood in the General Agreement on Tariffs and Trade (GATT), the General Agreement on Trade in Services (GATS), and other relevant WTO jurisprudence, since no WTO agreement refers to the trade of emissions units.¹⁴⁰ **The compatibility of linking with WTO guidelines is an issue that is largely hypothetical and has never arisen in any practical context to date.**

6.8 TYPICAL CONTENT OF A LINKING AGREEMENT

The content of the linking agreement will generally depend on the form of the agreement and the type of link. For instance, the California, Québec and Ontario Linking Agreement¹⁴¹ establishes a broad framework for alignment and coordination. As outlined in Article 1, the objective of the Linking Agreement is for:

"Parties to work jointly and collaboratively towards the harmonization and integration of the Parties' mandatory greenhouse gas emissions reporting programs and Cap-and-Trade Programs for reducing greenhouse gas emissions."¹⁴²

In most cases, making amendments to the text of the linking agreement will be harder than amending details covered in the annexes or their respective legislation and ordinances. This is why issues such as the essential criteria for the design of the Swiss and EU systems or obligations for their regulated entities are covered in the annexes to the Linking Agreement, given that these requirements will likely be different in future phases. Even an MoU can be difficult to adjust, as that would require high-level politicians in all linked jurisdictions to agree on an amended political document. In the case of RGGI, participating states conduct their program review and

¹³⁷ Assuming the seller system allows entities other than the regulated entities to engage in trading, as well as open and maintain a registry account.

¹³⁸ Clean Air Rule, section 173-442-190.

¹³⁹ See, for example, Hawkins (2016); Holzer (2016); Munro (2014); Petsonk & Keohane (2015).

¹⁴⁰ Petsonk & Keohane (2015).

¹⁴¹ Agreement Concerning the Harmonization and Integration of Cap-and-Trade Programs for Reducing Greenhouse Gases (2017).

¹⁴² ARB, Le Gouvernement de Québec & Government of Ontario, Agreement Concerning the Harmonization and Integration of Cap-and-Trade Programs for Reducing Greenhouse Gases (2017). Hereafter "California, Québec and Ontario Linking Agreement".

other amendments by updating the Model Rule, rather than revisiting the original MoU, which would otherwise open up broader negotiations and necessitate higher-level political involvement (see Box 6.2. That being

said, the revision of the Model Rule does not negate the domestic legal processes that each RGGI-participating state then has to go through to incorporate these changes into the relevant state legislation/regulations.

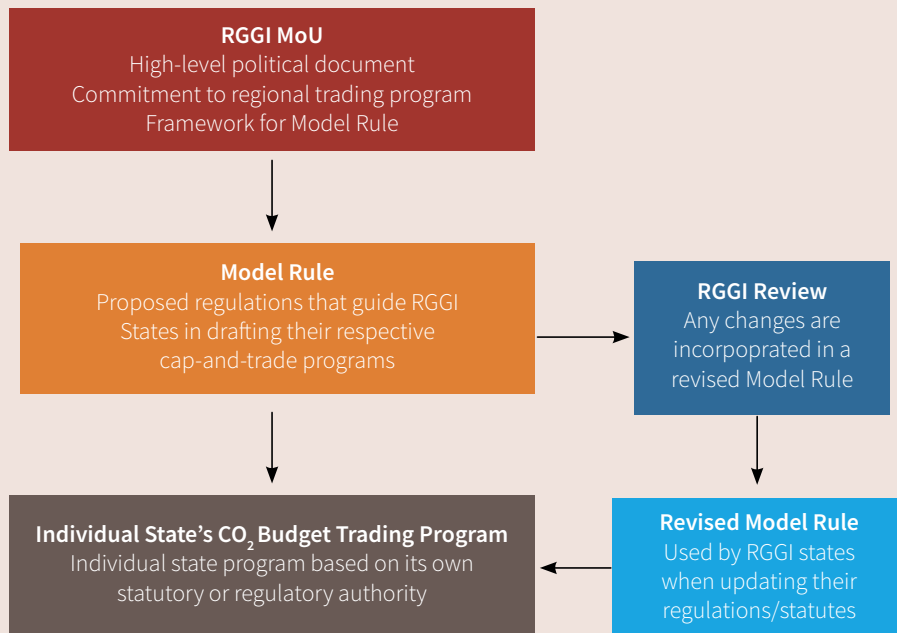
BOX 6.2: Linking arrangements in the RGGI-participating states

The RGGI MoU itself does not impose any legal obligations^a on the signatories. However, as a high-level political document, it signals the commitment of signatory states to the objective of reducing greenhouse gas emissions through a regional trading program, as well as the framework for a Model Rule. The Model Rule is a set of provisions that form the basis of each RGGI-participating state's cap-and-trade program ("*CO₂ Budget Trading Program*"). As outlined in the MoU, these states commit to implementing legislation and/or regulations for a CO₂ budget trading program that substantially reflects the Model Rule (section 2). Thus the regulatory authority for the program comes from the respective states' legislation and/or regulations. Taken together, these programs constitute the RGGI carbon market.

During RGGI program reviews, the states' trading programs are examined and any changes are then incorporated in a revised Model Rule, rather than amending the MoU. Following this, the new Model Rule is then used by each state as a guide when updating their own programs.

^a The legal obligations come from the respective state laws or rules that implement the RGGI program within their jurisdiction.

FIGURE 6.1: RGGI program review



Not every detail of the link or the design elements for the linked market needs to be set out in the agreement itself. The linking agreement can establish the wider framework, such as: the objectives and principles governing the link; the institutions and procedures to operate and manage the linked market; and the suspension, termination, and entry into force of the agreement. Operational details can be outlined in the respective legislation of the linking partners. The following subsections outline a list of topics that partners may want to consider for inclusion in their linking agreement.

6.8.1 Provision for the establishment of the link

The core of linking is that **allowances from the linking partner's ETS can be used for compliance and surrender in the other jurisdiction**. An explicit provision recognizing this fungibility can be included in the linking agreement. In addition, **how allowances from third parties are treated** could also be outlined. This will be important if linking partners are involved in other links (or if such links are envisaged in the future). The EU-Swiss Linking Agreement has an explicit provision outlining the process for linking with a third party. For instance, if the EU negotiates a link with a third party, Switzerland must be notified and regularly updated on the negotiations. Switzerland can also decide whether it accepts the other linking agreement or terminates the EU-Swiss Linking Agreement, Article 18.

6.8.2 System alignment and compatibility management

An obligation of the respective linking partners to **align their respective systems and ensure they stay aligned** over time ensures the robust functioning of the linked market. The EU and Switzerland Linking Agreement, for example, outlines essential criteria that must be met in their respective systems,¹⁴³ while the WCI partners commit to continually examining their respective regulations to ensure their systems remain harmonized and integrated.¹⁴⁴

6.8.3 Change management

General **processes to review the ETS and manage any changes within the linked market** (including the withdrawal or addition of new partners) can be dealt with in the linking agreement, as well as **outlining a process to**

amend the linked market. In Article 4 of the California, Québec and Ontario Linking Agreement, each Party reserves the right to make changes to their program as they see fit. However, any proposed changes will be discussed between the Parties, particularly if they affect the harmonization and integration process or have any other effects on the linking partner.

6.8.4 Accounting

Robust accounting systems, alongside consistent coordination and information sharing across the linked systems, will be necessary to safeguard the integrity of the linked market. **How the flow of allowances between the linking partners will be accounted** for can also be included in the linking agreement. This will help linking partners track their share of the reductions in the linked system. If relevant, parties may also consider international accounting issues in relation to the UNFCCC and the Paris Agreement directly in the linking agreement itself (for more, see section 1.4). In the EU-Swiss Linking Agreement and the California, Québec and Ontario Linking Agreement, accounting for the net flows of allowances according to UNFCCC principles and rules is mentioned; however, given the continuing evolution of these rules under the Paris Agreement, it is flagged as an issue that will be looked at in due course.¹⁴⁵

6.8.5 Information sharing and coordination

The importance of **information sharing and coordination, as well as establishing processes to ensure this happens in a regular and structured fashion**, can also be included in the linking agreement. This can help ensure MRV processes are applied transparently and consistently, ease the process of market monitoring, and help prevent fraud, market abuse, and manipulation. These processes will help safeguard the robustness of the linked market. This is broadly covered in Article 11 of the California, Québec and Ontario Linking Agreement. The **handling of sensitive information** and the type of information that will be confidential can also be established in the linking agreement. The definition, handling, and release of sensitive information by both the EU and Switzerland are outlined in Articles 8 and 9 of the Linking Agreement (2017). Furthermore, the California, Québec and Ontario Linking Agreement ensures **public communication is coordinated** so that

¹⁴³ EU-Swiss Linking Agreement, Article 2 (2017).

¹⁴⁴ California, Québec and Ontario Linking Agreement, Article 4.

¹⁴⁵ EU-Swiss Linking Agreement, Preamble, Article 4; California, Québec and Ontario Linking Agreement, Article 8.

market information is available for all participants at the same time (art 16).

6.8.6 Effective and consistent enforcement

Ensuring **market regulations and processes are consistently and effectively enforced** across the linked market will be crucial to ensure the smooth functioning of the linked program. It will also build trust and confidence in the system among the market participants. Provisions to cooperate on issues such as market fraud and abuse or to ensure the relevant laws are applied to transactions among entities in each partner's jurisdiction can be included in the linking agreement. Supervision and enforcement of the linked market is also related to information sharing and cooperation.

6.8.7 Establishment of joint institutions and procedures

Some aspects of the linked market, such as market oversight, may be jointly operated by both linking partners. The **establishment of any joint institutions and procedures**, as well as any subsidiary bodies or working groups, can be outlined here. New institutions may be created, such as the Joint Committee in the EU-Swiss Linking Agreement. Alternatively, parties may choose to rely on existing bodies, such as those established during the linking negotiation process (for more, see section 7.4). As outlined in Chapter 7, the management of the linked market can take place through several institutions and communications networks on both the technical and political levels. The **type of decisions that should be made jointly** can also be stated in the linking agreement. For instance, in the California, Québec and Ontario Linking Agreement, Articles 9 and 10 lay out the establishment of joint auctioning procedures, as well as the use of a common registry and auction platforms. In addition, Article 13 establishes a Consultation Committee with a representative from each of the linking partners to support the objectives of the Linking Agreement. Furthermore, the Agreement also refers to the centralized administrative and technical support (art 12) that the WCI, Inc. provides.

6.8.8 Dispute resolution

Procedures for resolving any disputes between the linking partners can be outlined in the linking agreement.

This may be quite formal, for instance, through the establishment of dispute resolution mechanisms, as is the case in international trade treaties analyzed by Görlach et al. (2015). Disputes on the interpretation and application of the Linking Agreement between the EU and Switzerland are initially discussed in the Joint Committee. If unsuccessful, the dispute can be referred to the Permanent Court of Arbitration.¹⁴⁶ It can also take the form of a looser commitment to constructive consultation, as is the case in the California, Québec and Ontario Linking Agreement.

6.8.9 Suspension and termination

Conditions and the processes for the **suspension or termination of the link** are also regularly included in the linking agreement. This can cover procedural conditions for withdrawal from the agreement (e.g., notification in writing of withdrawal), as well as substantive conditions, such as a violation of the terms of the link or force majeure. While issues of delinking (for more, see section 7.6) such as the validity of allowances from the former linking partner can also be included in the linking agreement itself,¹⁴⁷ partners may also choose to leave such issues to another body or set of documents (for more, see Chapter 7). This is the case for the EU and Switzerland, as well as for the WCI carbon market. The WCI does provide for conditions for withdrawal (art 17) in its Linking Agreement, but the agreement is non-binding.

6.8.10 Ratification and entry into force

A linking agreement will usually also set out **provisions on its duration and entry into force**. Where the link is implemented through an international treaty, moreover, the conditions for its entry into force—such as ratification—may also be outlined.¹⁴⁸ In addition, prior to its entry into force, the treaty may have contained articles on its **provisional application**.

For an overview of how these issues have been addressed in linking agreements to date, see Table 6.2.

¹⁴⁶ EU-Swiss treaty, Article 14.

¹⁴⁷ See RGGI (2005), 5B.

¹⁴⁸ EU-Swiss Linking Agreement, Article 21 (2017).

TABLE 6.2: Comparison of major elements in Linking Agreements

	EU-Switzerland	California-Québec-Ontario	RGGI	Tokyo-Saitama
Form of linking agreement	International treaty	MoU	MoU	MoU
Provisions for the establishment of the linked market	x	x	x	x
Information sharing and coordination	x	x	x	x
Effective and consistent enforcement	x	x	x	
Establishment of joint procedures	x	x Joint auctions, common program registry, and auction platforms	x Program monitoring and review	
Establishment of joint institutions	x Joint Committee	x Consultation Committee and refers to WCI, Inc.	x Regional organization (now RGGI, Inc.)	
Accounting	x	x	x	x
Dispute resolution	x	x		
Termination and/or withdrawal	x Suspension and termination of link, termination of agreement	x Withdrawal procedure from MoU	x Addition or removal of signatory states from MoU	
Change management	x	x	x	
Ratification and entry into force	x	x Coming into force and duration of agreement		

6.9 FUTURE LINKS

Finally, parties should consider the scalability of the agreement. Scalability refers to whether it is meant to serve as a stand-alone bilateral linking agreement or whether it could serve as a blueprint for future links and can be extended to include more parties as this will also influence the content and framing of the agreement (also see chapter 3). California and Québec have used their Linking Agreement as the basis for the Linking Agreement with Ontario¹⁴⁹ —with some adjustments to cater to the specificities of Ontario’s legal

and regulatory framework. **For the WCI jurisdictions, the Linking Agreement is a model for engaging with other jurisdictions in the future.** In addition to providing an accession clause for new partners (art 19), the Linking Agreement provides a standard template for linking that signals to potential linking partners the key issues and design elements that would be prioritized in linking negotiations. This way, future partners can better assess the potential risks and benefits of joining the WCI carbon market, including the extent to which their system is compatible with the design of the linked market.

¹⁴⁹ The linking agreement between California and Québec was terminated once the California, Québec and Ontario Linking Agreement was signed. See preamble in California Air Resources Board, Le Gouvernement de Québec and the Government of Ontario (2017).

At a glance: form and content of a linking agreement

- A linking agreement can help solidify the partnership and give partners a shared understanding of common goals and coordination needs.
- Treaties offer higher legal certainty, but can be a time- and resource-intensive process.
- Although less binding on the signatories, MoUs are faster to adopt and amend.
- The linking agreement establishes the wider framework for the linked market (e.g., goals, institutions, and core operating procedures) while operational details can be outlined in the respective legislation/regulations of the linking partners.

CHAPTER SEVEN

Management of the Linked System

7.1 INTRODUCTION

An ETS will have institutions and mechanisms in place to ensure the smooth functioning of the market. Although these structures will largely be retained when an ETS is linked to another, they may be altered or expanded to allow linking partners to work together to ensure the routine operation of the linked market. Parties may discuss how they envisage such coordination as part of the linking negotiations. For example, joint processes or new institutions may already be drafted in the linking agreement (see section 6.8.7). However, as linking agreements generally tend to focus on macro issues, the finer details—such as the codes of conduct for a joint institution—may still need further development following the conclusion of the linking agreement.

This chapter looks at two main areas that need to be managed in a linked market: routine operation and change management. Routine operation requires parties to coordinate such tasks as information sharing, market monitoring, the operation of joint elements of the linked market, as well as dispute resolution. Linking partners also need to consult one another to ensure their systems remain aligned and compatible over time, particularly in the face of scheduled changes to the system or in the case of unexpected changes, such as an economic crisis.¹⁵⁰ The next section examines the different types of coordination structures in a linked market. Linking partners may use its system's existing institutions and processes (or establish new ones) to assist in the joint operation of the linked market. A dedicated service organization may also be set up to take over the technical and administrative aspects of managing the linked market. The final section considers the risk that a jurisdiction may decide to delink. Partners should have processes in place to deal with this eventuality. Three major issues include the treatment of the allowances from the departing jurisdiction, the cap, and the overall governance mechanisms.

7.2 ROUTINE OPERATION

Before the linked carbon market becomes operational, coordination processes between the linking partners should be established in order to ensure the routine operation of the linked market. Like in the linking process (see chapter 3), parties may also need to consider practical issues, such as the working language, dealing with different time zones, or the use of different currencies.

Partners need to coordinate on four main areas:

- information sharing and coordination;
- market operation and oversight;
- operation of joint elements of the linked market (if any); and
- dispute resolution.

7.2.1 Information sharing and coordination

Parties should be committed to a strong working relationship that enables their staff to work constructively with each other, develop a transparent carbon market across the jurisdictions, and **share market-relevant information in a timely and secure manner**.¹⁵¹ Information sharing refers to both the flow of information between the linking partners and the release of information to market participants and the public. In particular, coordinating the timing of the release of information is necessary to ensure an even playing field for market participants in both systems and to guard against arbitrage. Linking partners also **need to ensure the protection of private, commercially sensitive, and confidential information**. Generally, when such information is shared across the linked systems, additional care is taken to ensure there is no breach of privacy or confidentiality obligations in both jurisdictions.¹⁵²

¹⁵⁰ Haites & Wang (2009); Görlach et al. (2015); Mehling & Haites (2008).

¹⁵¹ For instance, information that may affect market integrity, supervision, or enforcement, and information related to public announcements and consultations.

¹⁵² For instance, see Articles 8-9 in the EU-Swiss Linking Agreement or Article 15 in California, Québec & Ontario Linking Agreement (2017).

7.2.2 Market operation and oversight

Coordinated and effective oversight of the linked market is critical to ensure the common market functions properly. This may include **ensuring robust accounting across the jurisdictions, preventing market misconduct, and safeguarding the system against fraud and market manipulation**. Under the EU-Swiss Linking Agreement, the respective administrators of the EU and Swiss registries will cooperate to minimize fraud and other criminal activities.¹⁵³ The exact measures they can take will be decided by the Joint Committee.¹⁵⁴ The California, Québec and Ontario Linking Agreement also requires all parties to supervise and enforce the linked market.¹⁵⁵

7.2.3 Operation of joint elements (if applicable)

Linking partners may decide to operate parts of the linked market jointly, such as adopting a joint registry or common auctioning platform. This is the case in the WCI and RGGI carbon markets. Partners (or a contracted third party) will have to **establish these joint structures, outline rules for their operation, and oversee their functioning**. However, systems can also be linked without establishing joint design elements. In the case of the EU and Switzerland, both partners will run their registries separately; a direct link between the two registries will enable allowances to be traded across the two systems.

7.2.4 Dispute resolution (both among market actors and between jurisdictions)

When disagreements between the linking partners arise, **procedures for resolving such disagreements in a timely and effective manner are needed**. These are often outlined in the linking agreement (see also section 6.8.6).

7.3 CHANGE MANAGEMENT

Coordination is particularly important when there are changes to the system, such as reforms to the respective systems, scheduled adjustments to ETS legislation/regulations, or when unforeseen developments require additional intervention.¹⁵⁶

7.3.1 Expected changes

Linking partners need to consult one another to respond to any changes in the design (or related operating procedures) of one or both of their systems. The EU-Swiss Linking Agreement has a general provision stating that when the relevant ETS legislation of one party changes, it must be checked by the Joint Committee as to whether it affects the Linking Agreement. If so, the Committee is then authorized to take corresponding actions.¹⁵⁷ Furthermore, there is another review provision that explicitly addresses changes concerning aviation activities.¹⁵⁸

Reviews and reforms may have a significant impact on the system and are thus typically timed to precede new trading periods to ensure a smoother transition.¹⁵⁹

When an ETS is linked to another system, any changes to its system will also have implications for the linked market. The level to which a jurisdiction chooses to involve its linking partner in its system review or reform process will be influenced by the type of link and level of ETS design alignment. Ultimately, it is a political question for the linking partners. **At the minimum, some consultation between the partners can ensure any changes result in minimal disruptions to the linked market.** Partners could specify the process for sharing and discussing findings of any system reviews, the timeframe for announcing changes to the public, and the minimum amount of advance warning for major changes with their linking partner(s). There is a high level of consultation and coordination during the RGGI program reviews, with all RGGI-participating states involved in the review of the RGGI program in their respective states. Changes to the Model Rule – which proposes regulations that guide RGGI-participating states in drafting and implementing their respective, domestic cap-and-trade programs—are done in consultation with all the participating states (for more, see Box 6.2).

7.3.2 Unexpected changes

Linking partners may need **to coordinate their response to unforeseen events that directly affect the ETS or the environment it operates in**, such as a severe economic crisis leading to a sudden drop in the

¹⁵³ EU-Swiss Linking Agreement, Article 3(5) (2017).

¹⁵⁴ Ibid.

¹⁵⁵ California, Québec and Ontario Linking Agreement, Article 11 (2017).

¹⁵⁶ See also Görlach et al. (2015).

¹⁵⁷ EU-Swiss Linking Agreement, Article 10 (2017).

¹⁵⁸ Ibid, Article 7.

¹⁵⁹ See also Görlach et al. (2015).

allowance price or a drastic shift in political majorities and attitudes toward climate policy.¹⁶⁰ Depending on the relationship and nature of the link, partners may want to outline notification obligations, as well as ensure there is an appropriate forum in place in which such changes can be discussed. This could be discussed in regular meetings of the coordination bodies (described below) or linking partners could call a special meeting as necessary.

7.3.3 Delinking or expansion of the linked market

Conditions and procedures for the suspension or termination of the link are usually included in the linking agreement (see section 6.8.9). Section 7.6 will provide more details on the process of delinking and issues that partners may need to address.

Similarly, an expansion of the linked market to additional systems is another special case of change management, whose conditions and procedures are also usually included in the linking agreement (as outlined in chapter 6).

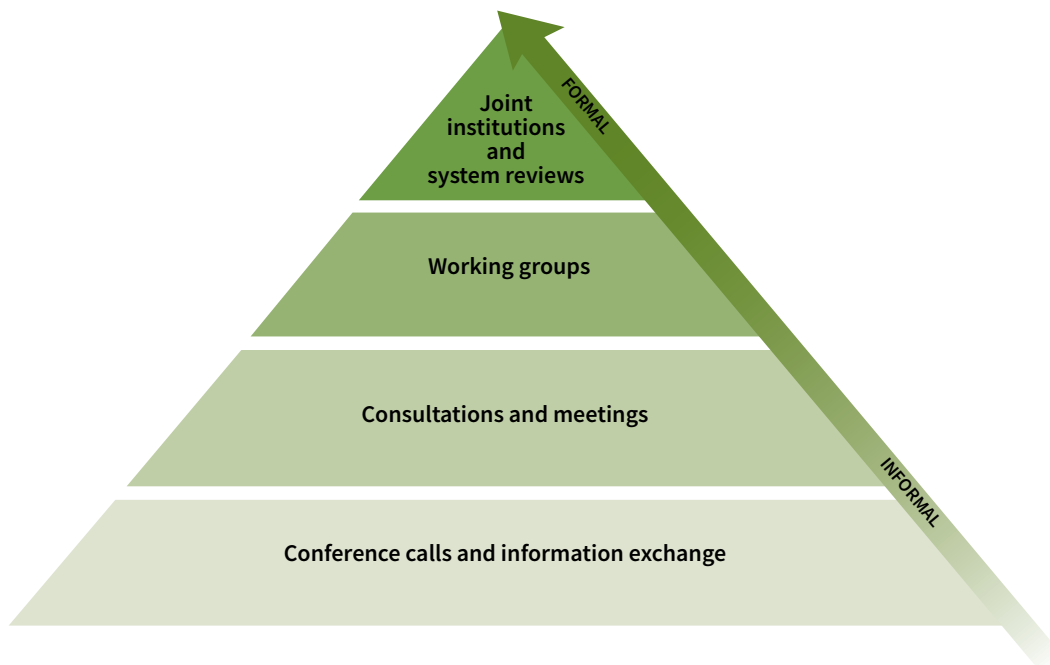
7.4 COORDINATION STRUCTURES

Coordination structures are likely to unfold in a dynamic and evolutionary process, like the systems themselves.¹⁶¹

Initially, coordination may occur through informal networks such as processes to share information, promote comparable or standard approaches, and other outreach activities. As integration intensifies, jurisdictions may see the necessity for, or be willing to consider, more formal coordination structures such as mutual notification and information-sharing obligations, external review procedures, reciprocal market monitoring, or even the creation of new institutions.¹⁶²

Jurisdictions can coordinate their linked market using a variety of structures, ranging from informal to formal set-ups. Similar to the linking process (see chapter 3), communication may also happen at different levels (i.e., political and technical, as well as higher level to working levels), reflecting the nature and significance of the issues. For instance, **it is likely that informal, technical coordination will happen continuously in the background, whereas exchanges and decision making on the political level are likely to occur less frequently.** Although most of the coordination may be undertaken by the ministries responsible for the ETS in the respective linking partners, they may also choose to outsource some tasks and responsibilities to third-party service providers or a dedicated service institution, as is the case in linked markets in both the WCI and RGGI carbon markets.

FIGURE 7.1: Different forms of coordination for managing the linked market



¹⁶⁰ Ibid.

¹⁶¹ Tuerk et al. (2009a).

¹⁶² Görlach et al. (2015).

Linking partners can consider the following coordination structures:¹⁶³

7.4.1 Use or adapt existing structures established during linking preparations

While drafting and negotiating both the linking agreement and the design of the common market, jurisdictions may set up structures such as joint committees, working

groups, or task forces to facilitate coordination. Existing working relationships and structures established during the linking process may offer a natural foundation on which to build coordination structures to manage the linked market. However, some adjustments to these bodies may be necessary as governance needs evolve or change, compared to the negotiation phase. Box 7.1 highlights how coordination works in the WCI.¹⁶⁴

BOX 7.1: Coordination of the WCI carbon market

California and Québec officially linked their cap-and-trade programs in 2014. Ontario signed a Linking Agreement with California and Québec in September 2017 to join in their linked market starting in January 2018 (see Figure 7.2; note that Ontario has now repealed their cap-and-trade program; for more, see Box 7.9).

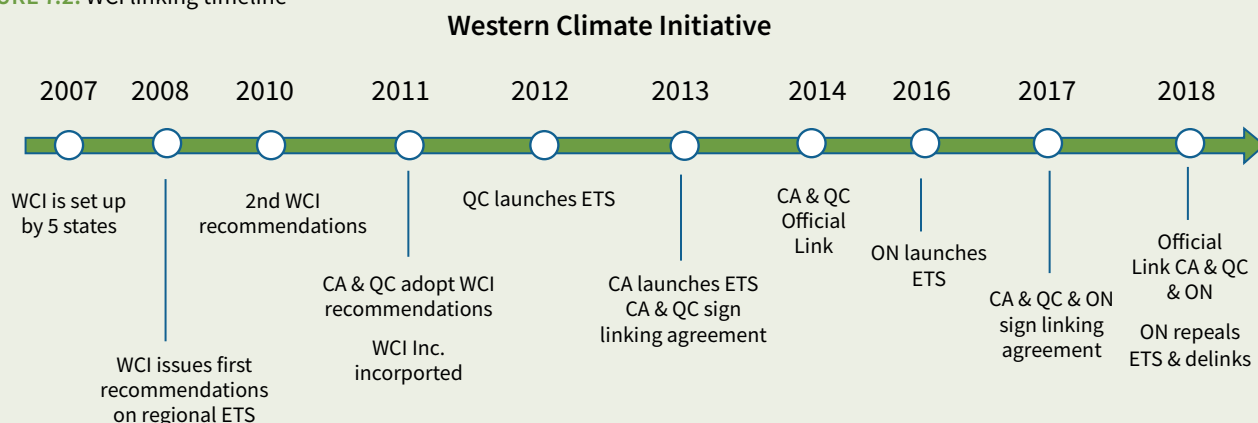
Although these systems are fully linked, they retain independent jurisdiction over their systems. Staff from all the WCI jurisdictions are constantly in contact with each other and the day-to-day coordination is based on frequent engagement at multiple levels. Coordinating calls occur at the staff and management level on a weekly basis. Coordination at the minister and secretary levels also happens when important issues arise with regards to the partnership engagement.

Various institutional bodies support these coordination processes in a more structured manner. Staff workgroups, that meet on a weekly basis, function as a standing forum to assess the linking arrangement and its operation, and to discuss improvements where needed.^a These bodies were established in the Linking Agreement and consist of the following:

- Technical level: The Tracking System workgroup focuses on the development and operation of the joint registry, while the Auction and Monitoring workgroup focuses on the development and operation of the joint auction platform. These workgroups also work together with WCI, Inc., which then coordinates with the sub-contractors (see Box 7.4).
- A high-level management workgroup oversees the well-being of the linked market. It addresses any issues that cannot be resolved in the WGs, sets overall priorities, and tracks their progress.
- At the top level, the Consultation Committee (one representative per jurisdiction) monitors the implementation of the linked market, makes recommendations for its improvement, provides an annual report, addresses any other issues raised by either party, and resolves differences that cannot be resolved in the technical and management WGs.
- Each party also designates a contact person to facilitate communications. At the request of any linking partner, the contact shall identify an office or official responsible for the matter and assist, as necessary, in facilitating communication between them. The overall management structure is illustrated in Figure 7.3.

^a Görlach et al. (2015).

FIGURE 7.2: WCI linking timeline



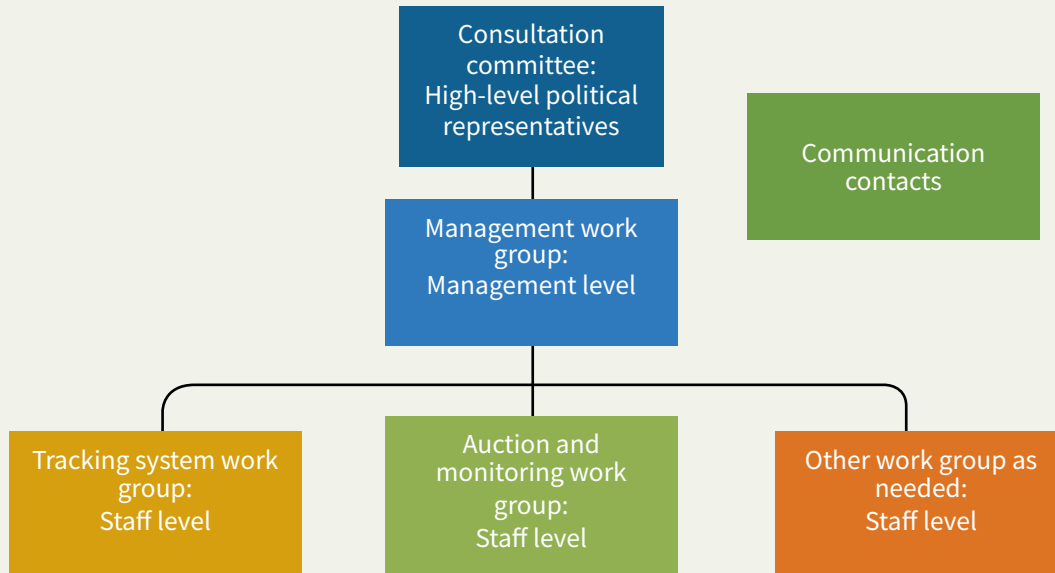
(continued)

¹⁶³ Note: these structures are not mutually exclusive.

¹⁶⁴ Sometimes meetings will be held with service providers such as WCI, Inc. or its sub-contractors. More information on these organizations is available in sub-chapter 2.

BOX 7.1: (continued)

FIGURE 7.3: Coordination bodies within WCI, Inc.



BOX 7.2: Governance of EU-Swiss link

Although the EU ETS and Swiss ETS will be fully linked, they will also continue to operate as independent systems. It is common practice for the EU and Switzerland to establish joint committees to oversee their bilateral agreements. To help coordinate and govern the two systems, the Linking Agreement also contains provisions for a Joint Committee.

The Joint Committee is composed of representatives from both Parties of the Linking Agreement, either of whom can convene a committee meeting.^a Decisions must be unanimous and, upon their entry into force, are binding for both Parties. It can also set up sub-committees or working groups to assist its work.

The functions of the Joint Committee are defined as follows (art 13):

- administering the Linking Agreement and ensuring its proper implementation;
- adopting a new annex or amending existing ones;
- discussing and proposing amendments to the main text of the Linking Agreement;
- holding an exchange of views on proposed legislation or amendments by either party that may affect linking;
- holding an exchange of views in case of the link's suspension or prior to the notification of the link's termination;
- settling disputes; and
- conducting periodic reviews on the integrity and functioning of the linked market.

The details on the exact composition, detailed rules and procedures of the Joint Committee are yet to be established.

^a EU-Swiss Linking Agreement, Article 12 (2017).

A dedicated service organization is not necessary to manage a linked market, but the benefits, such as; allowing linking partners to pool resources, which can be particularly attractive for smaller jurisdictions with limited resources; increases administrative efficiencies and making the linked market more secure. The organization may be responsible for providing a range of services depending on the needs of the linking partners.

7.4.2 Establish joint coordination bodies

New bodies may also be set up at a later stage in the linking process to coordinate and oversee the joint market to replace or complement coordination bodies that were used during linking negotiations. For instance, a joint committee or informal working groups could be established at both the technical and political levels. The mandate for these bodies may be defined in the linking agreement. For the EU-Swiss link, linking partners agreed to establish a Joint Committee to administer and implement the Linking Agreement (see Box 7.2).

7.4.3 Establish a dedicated service organization

While linking partners will be directly involved in managing the linked market, they may also choose to outsource part of these responsibilities to one or more service providers. These could be pre-existing service providers that may, for instance, have played a role in linking negotiations. Partners can also choose to set up a new institution. In North America, both the RGGI states and the WCI-participating jurisdictions set up their own separate institution (RGGI, Inc., and WCI, Inc.,

respectively) to support the administrative and technical implementation of their respective linked joint markets (see Boxes 7.3 and 7.4 respectively).

Although a dedicated service organization is not necessary to manage a linked market, it has several benefits.

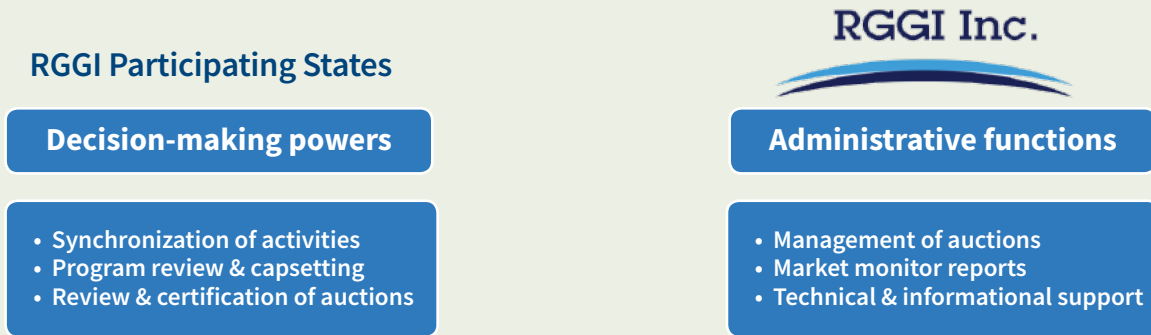
- Jointly funding such an organization to manage the market lets linking partners **pool resources**, which can be particularly attractive for smaller jurisdictions with limited resources.
- Using the same system also **increases administrative efficiencies** and makes the linked market more secure.
- Delegating some management tasks to a third party may also be a good way of **‘de-politicizing’ the process** and reducing potential conflict.

The organization may be responsible for providing a range of services depending on the needs of the linking partners. This can range from running joint mechanisms in the linked market,¹⁶⁵ such as a joint auctioning platform or a common registry, to facilitating knowledge exchange between the linking partners.

¹⁶⁵ In the case of RGGI, Inc. and WCI, Inc., these bodies sub-contract and interface with the respective service providers that perform certain functions in the linked market.

BOX 7.3: RGGI, Inc.

RGGI is made up of nine sub-national US states operating as one fully integrated carbon market. The RGGI-participating states synchronize their activities and decision making, but have also formed a joint organization (RGGI, Inc.) as a non-profit entity to help the RGGI-participating states administer the carbon market (e.g., by providing technical, informational, and contractual support).

FIGURE 7.4: RGGI-participating states vs. RGGI, Inc.**Administrative and technical services**

RGGI, Inc. has no regulatory or enforcement authority and sovereign authority is reserved to the RGGI states. Based in New York City, RGGI, Inc. provides a range of services to the RGGI-participating states:

- Development, implementation, and maintenance of a registry: The RGGI CO₂ Allowance Tracking System (RGGI COATS) is the electronic platform that records and tracks data for each state's ETS. It enables the public to view, customize, and download reports of market activity and RGGI program data.
- Regional auctioning of allowances: RGGI, Inc. implements a regional auction platform via a third-party service provider. The auctions are conducted in accordance with the statutory and/or regulatory authority of each state offering CO₂ allowances for sale in that auction. The proceeds are returned to the states.
- Market monitoring: RGGI, Inc. contracts an independent market monitor to provide expert monitoring of the competitive performance and efficiency of the RGGI Allowance Market. Their services include identifying attempts to manipulate the price during auctions or on the secondary market, and making recommendations to improve market efficiency.

Technical support to program review:

RGGI, Inc. provides technical assistance for the review processes, such as conducting or commissioning technical analyses. It also facilitates public meetings to gather stakeholder input for the program review on behalf of the RGGI states.

The services provided by RGGI, Inc. still involve the input and oversight of the participating states. For instance, with auctioning:

- All participating states are involved (e.g., through the auction working group) in updating the conditions regarding auction rules and related materials.
- Once this has been concluded, the contractor of the auction platform of RGGI, Inc. runs the auction. The results of that auction and the market monitor report are presented to the states afterward and each individual state has to approve them.
- After each auction, every state reviews all of the applications and their certification. States then sign the decisions to express acceptance of the materials that have been submitted at that stage.

(continued)

FIGURE 7.4: RGGI-participating states vs. RGGI, Inc. *(continued)***Decision-making process**

The participating states also hold weekly meetings that are facilitated by RGGI, Inc., to discuss current operational mechanisms and upcoming policy developments. The decisions made in these coordination meetings are reached by consensus. Although it may take more time to resolve issues, a consensus-based decision-making process ensures the support and acceptance of all participating states. In addition, the agency heads of the RGGI-participating states meet as needed (e.g., on issues requiring higher-level political decisions).

Organizational structure

RGGI, Inc. is funded by the RGGI-participating states, with each of them entering into a contract with RGGI, Inc. in order to establish their financial contribution. Cost sharing is connected to the share of the allowances of each state in the total cap.

RGGI, Inc. is governed by the Board of Directors, which includes the agency heads of both the energy and environmental regulatory agencies in each RGGI state. The Board of Directors has three standing committees: the Executive Committee, the Finance Committee, and the Audit Committee. The official board member-elected representatives of the Executive Committee of RGGI, Inc. – the chair and the vice-chair – are often the same individuals as those who guide or facilitate the discussions among the agency heads of the individual states. This modus operandi makes the meetings run more smoothly and enables consensus building.

BOX 7.4: WCI, Inc.

WCI, Inc. was founded by WCI-participating jurisdictions in 2011 as a non-profit organization to provide administrative and technical services for the WCI partners. Initially, it also provided services to the California-Québec market and these were extended to Ontario in 2016 following the development of their Cap-and-Trade program.

A range of services to the California-Québec joint market are provided through its sub-contractors, including:

- Development, implementation, and maintenance of a registry: The Compliance Instrument Tracking System Service (CITSS) has been set up as a joint registry so that covered entities can open allowance accounts, as well as hold and retire allowances. The CITSS also records any transfers of allowances and supports market oversight. The system was heavily tested prior to linking and has been routinely updated under the oversight of the Tracking System Workgroup.
- Joint auctioning of allowances: Private entities have been contracted to provide auctioning-related services such as the Auction and Reserve Sale Administrator and the Financial Services Administrator.
- Market monitoring: An independent market monitor is contracted to monitor auctions, sales from the APCR, and the secondary markets.

WCI, Inc. is governed by a Board of Directors, which is composed of two senior representatives of each participating jurisdiction. The Board of Directors has three standing committees: the Executive Committee, the Finance Committee, and the Audit Committee.

The budget of WCI, Inc. comes from the participating jurisdictions with contributions based on the total number of jurisdictions and the total emissions covered by their respective systems. The total budget of WCI, Inc. for 2018 is USD 4.65 million, of which California, Québec and Ontario contributed approximately USD 2 million, USD 0.83 million and USD 1.24 million respectively.^a The remaining funds came from savings from previous years. A comprehensive financial management system has been set up for WCI, Inc. including Financing Committee, Audit Committee, Treasurer, and Custodian. Investments, budget, transactions, and assets of WCI, Inc. are also reported and monitored.

^a WCI, Inc. (2017).

Although it is more time-intensive, experience suggests that establishing new institutions is desirable for a newly-launched carbon market that is fully linked and highly integrated. This does not imply linking partners need to start from the beginning. Where similar structures already exist between linking partners in other areas, these can also be extended and applied to the management of the joint market. In the case of the EU-Swiss linking, a Joint Committee has been chosen, as it is a common arrangement for all previous bilateral agreements. For systems that maintain a higher degree of independence in the linked market, a lighter-touch approach may be more suitable, such as in the case of the Tokyo-Saitama link (see Box 7.5).

Given the potential costs for travel and restrictive government budgets, regular coordination may also be conducted via tele-conference calls, complemented with an annual face-to-face meeting. In the case of WCI, Inc. and RGGI, Inc., meeting minutes and all written materials are made publicly available. In the case of WCI Inc., because meetings are held in both French and English,¹⁶⁶ all important decisions and policies are also made available in both languages.

Regardless of which structures are chosen, experience has shown that building trust and strong interpersonal relationships are paramount to effective collaboration both at the operational and political levels. For these

BOX 7.5: Tokyo and Saitama Link

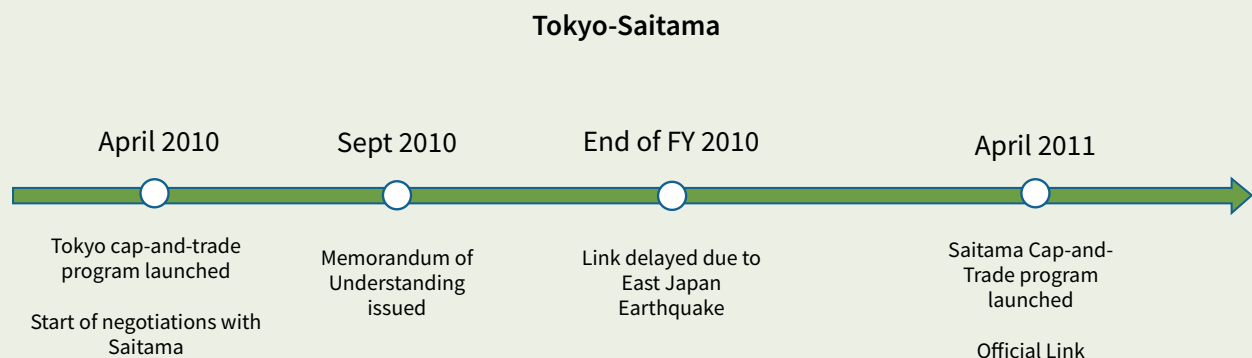
Tokyo and the Saitama prefecture are the only two jurisdictions currently operating an ETS in Japan. Tokyo helped Saitama design its system, which was launched a year after Tokyo's.

The two systems are largely identical, except for the use of forestry credits in Saitama. Saitama also does not impose penalties for non-compliance. The systems have been linked since the launch of the Saitama system in April 2011, based on a Linking Agreement made between Tokyo and Saitama in September 2010.

Given that both systems focus on reducing emissions as a primary goal, the exchange of units is limited to those that promote the reduction of emissions in their respective jurisdictions. Thus, only Small and Mid-Size Facility Credits (offsets) and credits from excess emission reductions (beyond the targets set for the regulated entities) can be traded. The Agreement also simplified the registration process for audit firms that verify emissions under the ETS if these firms work for both Tokyo and Saitama.

During the first compliance period (2011-2014), 14 credit transfers took place between the Saitama Prefecture and Tokyo (8 cases from Tokyo to Saitama, 6 cases from Saitama to Tokyo).

FIGURE 7.5: Tokyo-Saitama linking timeline



¹⁶⁶ Translation in French and English is provided in the WCI, Inc. meetings, though in practice they have held the meetings in English as much as possible. For more, see WCI, Inc. (2013).

reasons, it is crucial to meet face-to-face regularly, especially at the beginning of operating the joint program.

7.5 MANAGING OTHER TYPES OF LINKING

Some considerations as to how other types of linking can be managed are outlined in the following section.

7.5.1 One-way linking

In principle, this requires less coordination between the linked systems and fewer formal structures as compared to a full link.¹⁶⁷ However, it also depends on the partners' linking plans.¹⁶⁸ If one-way linking is meant to be a transitional instrument, with the intention of having a full link when design elements (and resulting allowance prices) are better aligned in future compliance periods, jurisdictions may prefer light-touch coordination in the early stages that nevertheless lays the groundwork for a more comprehensive management system. This happened in the first phase of the Norway ETS, before the country officially joined the EU ETS and only had a one-way link to the latter, as well as for the one-way linking phase of the intended Australia-EU link. No additional coordination body was created, but the bilateral communication and information-sharing processes established in the negotiation phase continued.

7.5.2 Restricted linking

Setting quality or quantity limits may be a way to help address near-term concerns about full harmonization (for more, see chapter 2). If only a certain share of allowances is eligible for surrender in the linked system, this may reduce coordination needs (see Box 7.5 on the light-touch approach taken by Tokyo and Saitama). At the same time, the use of quotas or exchange/discount rates also creates more management needs (e.g., coordinating reviews or updates of the exchange rates) that will require additional coordination processes.

7.5.3 Multilateral linking

In a situation where a pre-existing, linked carbon market expands to include a new jurisdiction, it is likely that existing management structures would be expanded or slightly modified to include the new jurisdiction (e.g.,

a representative would be included in the pre-existing joint institutions and decision-making processes).

However, this also depends on how the multilateral link evolves, for instance, whether it originates around a common governance framework that is designed to cater to more linking partners, such as the WCI carbon market, or whether the linked market grows through the incremental expansion of bilateral linkages without any broader central coordination. Although the latter scenario has not eventuated (and is beyond the scope of the Guide), if one linking partner has multiple bilateral links, these links would still indirectly affect one another. Therefore, some level of coordination and consultation will be required among the multiple parties.

7.6 MANAGING THE DELINKING PROCESS

Delinking refers to the situation in which one or more systems decide to terminate their link. When building a linked market, there may be a reluctance to address the issue of delinking and how this could look in practice as this may be a politically sensitive subject. However, policymakers should still consider the implications and actions that may be required in the case of delinking in order to manage a smooth transition. The departure of New Jersey from RGGI (see Box 7.7), Brexit preparations by both the EU and the United Kingdom (see Box 7.8), as well as the departure of Ontario from the WCI carbon market (Box 7.9), all yield lessons for managing the delinking process.

How and when a linking partner can delink will be influenced by the legal basis of the link and any conditions set out in the linking agreement.¹⁶⁹ In principle, withdrawing from a two-way link based on a non-binding MoU is easier and quicker than an international treaty.¹⁷⁰ The type of link also influences the delinking process: termination of a one-way link is also easier than terminating a two-way link. However, even terminating a one-way link would require intensive consultation with the linking partner in order to mitigate any undesired impacts, such as a sudden shock to the market (see chapter 6 for more). On the issue of timing, delinking could happen in

¹⁶⁷ This may not be equally divided though, as the net buyer may need or want more management structures in place to regulate the quantity and quality of allowances flowing into their system.

¹⁶⁸ Although this Guide focuses on linking between ETS systems, it may be worth noting that governing a one-way link between an ETS and a crediting system (e.g., an ETS with the Clean Development Mechanism (CDM)) may look very different to governing a one-way link between two emissions trading systems.

¹⁶⁹ Görlach et al. (2015).

¹⁷⁰ Ibid.

the face of a sudden event, such as a change in political leadership, or result from the accumulation of multiple issues. If the issues faced by linking partners are deemed to be temporary or solvable, a suspension might be an alternative to complete delinking.¹⁷¹ Conditions for the suspension and termination of the link are generally outlined in partners’ linking agreements, as is the case in the EU-Swiss Linking Agreement (see Box 7.6).

BOX 7.6: Suspension and termination provisions in the EU-Swiss Linking Agreement

The Linking Agreement between the EU and Switzerland sets out provisions for both the suspension and termination of their link (2017).

During suspension, allowances cannot be surrendered for compliance but are still tradable.^a Suspension may happen in three cases: non-compliance with obligations under the link by a Party to the Agreement, notice of the intention to link with a third system, and notice of the intention to terminate the link. In the first case, suspension shall end with the resolution of the dispute. In the second and third cases, the Party initiating the intention to link to a third party or initiating a termination shall notify its decision in writing to the other Party, which has the option to call a temporary suspension of three months (with the option to shorten or extend the duration).

Termination of the link takes effect six months after submission of the written notification of the decision to delink, or occurs automatically if that Party’s ETS is no longer continued or has been abolished.^b

In both circumstances, the Joint Committee for the linking parties shall hold an exchange of views and shall aim to find agreement to end the suspension or prevent the termination of the link (art 13).

^a Ibid., Article 15.

^b Ibid., Article 16.

7.6.1 Key Issues

The decision to leave a linked carbon market will affect the remaining partners, and certain market design and operational issues will need to be addressed. Some of these issues may already be addressed in the linking agreement (see more in chapter 7). Alternatively, the agreement may outline appropriate processes or fora for linking partners to address these issues.

For the partners, there are three major issues:

- the treatment of the allowances from the departing jurisdiction;
- the cap (if applicable); and
- joint institutions (if any).

Treatment of allowances from the departing jurisdiction

Decisions on how to treat the allowances from the departing jurisdiction can affect market behavior both prior to and after delinking takes place.¹⁷² **The other partner(s) needs to decide whether their entities will still be able to trade and use allowances from the delinking jurisdiction for compliance purposes.**¹⁷³

There is a spectrum of available options, from no restrictions (allowing both trading and compliance eligibility) at the beginning of Table 7.1¹⁷⁴ to full restriction at the other.¹⁷⁵

These options have their pros and cons. If delinking does not happen at the end of a trading phase (and the allowances are difficult to distinguish, e.g., via a mark or serial number signifying the different jurisdictions),

TABLE 7.1: Options for restrictions on the use of allowances from the delinking jurisdiction

Restrictions on tradability	EU-Switzerland
<ul style="list-style-type: none"> • No suspension of trading • Suspension of imports from the delinking system (domestic trade and exports into the delinking system remain possible) • Suspension of cross-jurisdictional trade only (intra-jurisdictional trade remains possible) • Suspension of all trading after a sunset period (or by end of the trading period) • Suspension of all trading for current and future vintages • Suspension of all trading immediately 	<ul style="list-style-type: none"> • All allowances remain eligible for compliance • Only allowances of past vintages remain eligible for compliance • These allowances only remain eligible for compliance during a sunset period (or until the end of the trading period) • These allowances are no longer eligible for compliances
<p>Source: Adapted from Görlach et al. (2015).</p>	

¹⁷¹ See more theoretical discussions on gradual or sudden termination in chapter 6.3.2 of Görlach et al. (2015).

¹⁷² See Pizer and Yates (2014) for an analysis of the impact of different treatments of banked allowances under delinking.

¹⁷³ Görlach et al. (2015).

¹⁷⁴ In this case, the economic value of the allowances should remain practically unchanged compared to that of domestic allowances (Görlach et al., 2015).

¹⁷⁵ This effectively nullifies their value and amounts to expropriation (Ibid.).

then setting no restrictions on the tradability and eligibility of those allowances may result in a sell-off of allowances from the leaving jurisdiction. This will in turn affect market behavior, as well as the allowance price. At the same time, restrictions may put certain firms at a disadvantage, depending on their initial compliance strategy. For instance, firms with internal mitigation strategies may have planned on selling their excess allowances or may be banking allowances to sell at a profit at a later date.

Cap adjustment, if applicable

If linking partners have a joint cap, this will have to be adjusted as the volume of total emissions under the cap will be smaller as a result of delinking. Adjustments may also be needed for other design elements related to coverage or the cap, such as the auctioning amount or the size of the market reserve (i.e., for the new entrants or for the purpose of market controls).¹⁷⁶

The timing of the delinking jurisdiction's departure will influence the adjustment of the cap and other relevant elements; in general, it is more complicated to calculate such adjustments within a compliance phase rather than at the end of it. New Jersey's decision to delink coincided with the end of the first compliance phase, which made the cap adjustment of the following phase easier (see Box 7.8). Changing midway through the compliance phase would be more difficult because the annual cap is calculated based on the calendar year.

Joint institutions, if applicable

If linking partners use a joint institution or service provider, all partners also generally participate in the relevant decision-making process and share the associated financial costs. **The delinking jurisdiction will most likely no longer participate in the decision-making processes and bodies.**¹⁷⁷ In addition, the other linking partners may need to reapportion their financial contributions to make up for any budget gap (see

BOX 7.7: New Jersey delinking from RGGI

RGGI was originally made up of 10 states in the United States as a linked, regional carbon market. In May 2011, Governor Chris Christie of New Jersey withdrew the state from RGGI ahead of the second commitment period (2012–2014) via an executive order.^a The timing (at the end of a compliance period) and cooperative attitude among all relevant jurisdictions helped the delinking process to take place relatively smoothly.

- **Cap adjustment:** The RGGI cap had to be modified to account for the departure of 40 regulated emitters from New Jersey. The nine remaining RGGI states jointly decided that the cap for the second compliance period would be reduced from 188 to 165 million short tonnes of CO₂, while the apportionment of the allowances among the states stayed the same. New Jersey completed the first compliance period before officially withdrawing.
- **Treatment of New Jersey allowances:** Another key policy decision by the remaining jurisdictions was to ensure that New Jersey allowances that had been auctioned and might have been banked (as RGGI allows unlimited banking) would still be fungible and eligible for compliance. New Jersey allowances from future vintages that had been auctioned were also honored.
- **Joint institution:** Administratively, New Jersey needed to withdraw from the RGGI, Inc. Board of Directors and no longer participate in the decision-making and budgeting processes. The cost sharing of RGGI, Inc. was then recalculated among the nine states.
- **Market monitoring:** RGGI, Inc. continued to track the 10-state market after New Jersey's departure for a short period after the delinking because of the concern of carbon leakage.
- **Other issues:** Other issues—such as the calculation of total emissions or the sold current and future vintage allowances with New Jersey, that helped inform larger decisions on issues such as the cap adjustment—were resolved through negotiations between New Jersey and the remaining RGGI-participating states.

The delinking negotiation between the remaining RGGI-participating states and New Jersey was led by a high-level staff member of New York. The Agreement was endorsed by the agency heads of all the RGGI-participating states.

^a Martin (2011).

¹⁷⁶ In addition, delinking may affect expectation and behavior of market participants, as well as the allowance price even for links without a joint cap (see Pizer and Yates (2014) for such an analysis). Adjustment may also be needed to combat the aforementioned potential effects on market behavior and expectations.

¹⁷⁷ Although in theory it may still be involved in the related discussions with the remaining jurisdictions in case there is still space or expectation to re-link later.

Box 7.7 on how this was handled with New Jersey and RGGI).

Another unique case is the imminent departure of the UK from the EU as a result of “Brexit”, which will also affect the UK’s involvement in the EU ETS (see Box 7.8).

In 2018, the Progressive Conservative party won the Ontario general election on a platform that included ending the Ontario ETS and withdrawing from the link with California and Québec. This departure raises similar issues to the exit of the UK from the EU ETS and New Jersey from the RGGI carbon market (see Box 7.9).

BOX 7.8: Brexit and its implications for the EU ETS

Brexit

Following the results of the UK national referendum on 23 June 2016, the UK will withdraw from the EU on 29 March 2019. However, whether the UK will continue to participate in the EU ETS in the post-2020 period is still under consideration.

The UK’s long-term emissions trading policy

The UK has three potential options for its emissions trading policy following Brexit^a

- In the long term, the UK could opt to remain in the EU ETS with a similar arrangement to Norway, which has also transposed the EU ETS legislation into its own domestic legal system and has entities regulated under the EU ETS despite not being part of the EU. This would provide continuity for regulated entities in the UK and ensure carbon price parity with the EU.^b
- The UK could follow the example of Switzerland and conclude a linking agreement with the EU, effectively ensuring that allowances in both markets were fungible across the linked systems. However, negotiations could be lengthy and complicated, although an interim link in line with the Australian model could be implemented.^c
- The UK could leave the EU ETS with no link; this would create considerable uncertainty regarding the cost of compliance for regulated UK entities. It would also require additional policies for the UK to meet its carbon budgets and its commitments under the Paris Agreement, although the existing UK carbon floor price policy could provide a basis for further policy development.

In addition, the departure of the UK will raise similar issues for the EU as the departure of New Jersey did for the remaining RGGI-participating states, such as the need for adjustments to the cap among the remaining participating jurisdictions, as well as the question of the continued validity of UK allowances.

The UK’s emissions trading policy until 2020

Without any transitional deal in place, once the UK leaves the EU, regulated UK entities may sell all their allowances as they would no longer be obligated to surrender allowances under the EU ETS. Given that the UK has roughly 1,000 installations covered by the EU ETS and represents approximately 10% of the overall EU ETS emissions, a smooth delinking or transitional process for the UK from the EU ETS is important to minimize any market disruptions. At the time of publication, negotiators continue to make progress toward an agreement on a transition period until December 2020. This would ensure that UK regulated entities would be legally required to comply with the EU ETS for 2019 and 2020.

To protect the system robustness of the EU ETS if the UK left the EU ETS in March 2019, the EU introduced a so-called “Brexit Safeguard Mechanism” on 14 February 2018. The Mechanism would void allowances from a Member State that no longer had compliance obligations under the EU ETS after January 2018. Allowances issued by the UK would have a country stamp in order to differentiate them from allowances from the other Member States. The UK has also passed legislation to bring forward the 2018 compliance deadline for UK participants to before the UK exit date.

^a For more, see Vivid Economics (2017).

^b Ibid.

^c Ibid.

BOX 7.9: Termination of Ontario's cap-and-trade program and implications for the WCI carbon market

On 3 July 2018, the Ontario government filed a regulation that revoked Ontario's cap-and-trade regulation. This regulation also prohibits Ontario's cap-and-trade participants from purchasing, selling, trading, or otherwise dealing with emission allowances. Thus, all accounts registered in Ontario have been suspended.^a Ontario allowances already held by Californian or Québec accounts remain valid for compliance. The Premier's actions also effectively withdrew Ontario from its link with the California and Québec cap-and-trade programs under the WCI, even if no formal notice was given.

Currently, regulated entities under the Ontario cap-and-trade program have compliance obligations until the end of the first period (2017-2020). Given that allowances are no longer tradable, this suggests such obligations may no longer hold. On 25 July, the Ontario government introduced the Cap-and-Trade Cancellation Act^b that proposes steps for the winding down of the province's ETS and addresses the retirement, cancellation and compensation of Ontario allowances. At the time of publication, the Bill had not been passed.

^a Ontario Regulation 386/18.

^b Bill 41 (2018).

At a glance: management of the linked market

- Linking partners need coordination structures in place to ensure the linked system functions properly and that it can respond to any changes to the system (i.e., through system reform or in light of a sudden, unexpected change).
- Although a dedicated service organization is not necessary to manage a linked market, it can reduce costs, increase administrative efficiencies, and “de-politicize” the management of the linked market.
- Linking partners should think through the potential implications of delinking, and actions that may be required once delinking occurs, given that the decision by one system to leave a linked carbon market will affect the rest of the market. In particular, the treatment of allowances from the system that is no longer linked, cap adjustments, and adjustments to any joint institutions will be important issues to address.

CHAPTER EIGHT

Looking to the Future

As countries around the world consider how their Nationally Determined Contribution (NDC) targets can be reached and ramped up to meet the long-term goals of the Paris Agreement, international cooperation can be a means of achieving this in a cost-effective manner. More than 80 Parties have also indicated an interest in carbon pricing as part of their NDCs,¹⁷⁸ which, alongside the provisions for cooperating carbon markets under article 6 of the Paris Agreement, could act as a catalyst for further linking efforts. The World Bank, for example, estimates that full, worldwide linking could reduce the estimated cost of climate action in line with a 2°C pathway by 50% by 2050.¹⁷⁹

Although progress toward a global carbon price remains elusive, the growth of emissions trading and their emerging networks could lead to multiple carbon hubs (or “carbon clubs”¹⁸⁰) that bring jurisdictions committed to carbon pricing together. Over time, they can jointly move from mutual learning to policy alignment and finally linking. While a European carbon market

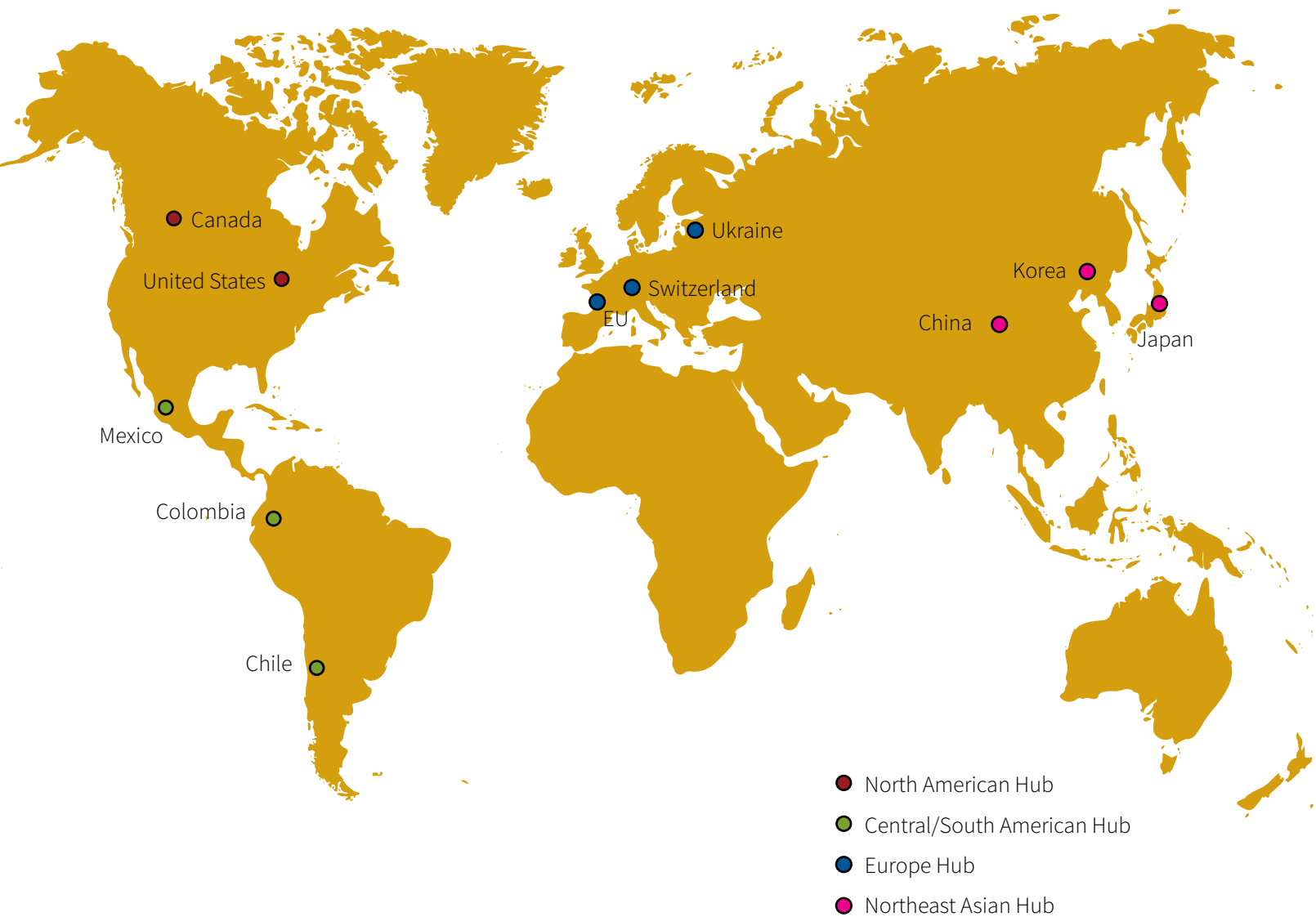
continues to grow through the linking of the EU with its neighbouring states like Switzerland, one could also imagine a North American hub with the expansion of sub-national systems in the US and Canada, including a bicoastal link of the East and West Coast markets. A Latin America hub may also be on the horizon based on the discussions toward a common monitoring, reporting and verification (MRV) framework under the Carbon Pricing in the Americas Platform. Chile, Colombia, and Mexico are all in various stages of designing and implementing carbon pricing instruments and could be the forerunners for such a hub. A roadmap for a potential Northeast Asian carbon market involving China, the Republic of Korea, and Japan has also been proposed.¹⁸¹ These hubs could also be driven by trade flows and trade liberalization policies. Actions such as lowering tariffs on environmental goods or technical and financial assistance on clean energy would deepen economic and energy integration, thereby potentially facilitating a transition to linked carbon markets.

¹⁷⁸ Marcu & Sugathan (2018).

¹⁷⁹ World Bank, Ecofys & Vivid Economics (2016).

¹⁸⁰ Also see Keohane, Petsonk & Hanafi (2017) on issues that such carbon clubs would have to consider, including minimum eligibility criteria to ensure they drive a certain level of mitigation and adopt ambitious climate policies.

¹⁸¹ Ewing (2016); also see Marcu & Sugathan (2018).



Although progress toward a global carbon price remains elusive, the growth of emissions trading and their emerging networks could lead to multiple carbon hubs.

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