6

Carbon Pricing

Overlaps and Formal Collaboration

JAKOB SKOVGAARD AND JANA CANAVAN

6.1 Introduction

Putting a price on carbon provides a straightforward instrument for climate policy, but it also has important repercussions for energy use. This is because most emissions covered by carbon pricing and markets stem from industries with high energy use, and because carbon prices suppress the consumption of energy through directing the choice of fuels away from emissions-intensive fuels. A global price on carbon has been touted as *the* solution to climate change by actors across the political and geographical spectrum, especially economists (Ball 2018).

It is no surprise then that the last ten years have seen a surge in international and transnational institutions aimed at promoting carbon pricing and carbon markets. A couple of such institutions have existed since the 1990s (most notably the International Emissions Trading Association, IETA), but most have appeared since 2007 (Sanderink et al. 2016). These institutions have promoted carbon taxes and emissions trading, as well as systems for the offsetting of emissions. More specifically, the general promotion of placing a price on carbon has taken its shape in the form of the setting of standards and commitments, information-sharing and networking, operational activities such as pilot and demonstration projects, and, to a lesser degree, financing.

The overall purpose of this chapter is to provide an overview of the existing carbon pricing and trading institutions. Specific attention lies on mapping out their focus areas and points of interaction that shape the roles, areas of specialization, and underlying norms that relate to the pricing of carbon emissions. We illustrate that carbon-pricing institutions constitute a subfield of interconnected and interactive parts, which together perform crucial tasks of carbon taxing, emissions trading, and offsetting; all directed toward promoting wider carbon-pricing efforts. In this, we follow the argument of Sanderink et al. (2016), as well as Zelli et al., and Sanderink et al. in Chapters 2 and 3, that it is instructive to identify the

membership, governance functions, and interlinkages between institutions within such a subfield of the climate-energy nexus.

The institutions we target for such an analysis constitute global (public and hybrid) institutions that focus on promoting carbon pricing on the international level and are vital to the wider field of climate change governance. While no orchestrating entity exists, we hold that the United Nations Framework Convention on Climate Change (UNFCCC) and carbon-pricing institutions embedded in the World Bank (the Carbon Pricing Leadership Coalition [CPLC], the Networked Carbon Markets [NCM], and the Partnership for Market Readiness [PMR]) constitute the most important institutions within the subfield. The UNFCCC and the World Bank differ in that the UNFCCC is an environmental institution that constitutes the incumbent and the central hub within the climate nexus, while the World Bank's involvement with climate change is more peripheral but has been increasing during the last twenty years (Park 2010; Gallagher and Yuan 2017). Beyond the UNFCCC and the World Bank institutions, a range of public, hybrid, and especially private institutions also constitute parts of the carbon-pricing subfield. Public institutions included here are the Western Climate Initiative (WCI), the International Carbon Action Partnership (ICAP), the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), and, as mentioned, the UNFCCC and the PMR. Hybrid institutions cover the UN Global Compact for Climate (C4C), the NCM, and the CPLC. Lastly, covered private institutions are the Gold Standard, Carbon Neutral Protocol (CNP), Verified Carbon Standard (VCS), the (IETA), and the International Air Transport Association Carbon Offset Program (IATA_COP).

So far, studies of carbon pricing have mainly focused on economic aspects and on single cases of carbon-pricing efforts at national, provincial, and European Union levels (Skjærseth and Wettestad 2008; Harrison 2012; Sterner and Coria 2012; but see Betsill and Hoffmann 2011). Several scholars have analyzed carbon markets from a critical perspective and emphasized their neoliberal underpinnings (Stephan and Paterson 2012; Lane and Newell 2016). Analyses covering both carbon taxes and emissions trading are rare, as are comparative studies of the adoption of carbon pricing (Harrison 2012; Rabe and Borick 2012). Concerning the international level, studies of the diffusion of carbon-pricing instruments, such as carbon markets, tend to focus on the diffusion between peers (from government and industry) in different polities, while paying less attention to the role of international institutions that promote such diffusion (Meckling 2011a; 2011b; Stephan and Paterson 2012; Paterson et al. 2014).

This chapter will contribute to this literature by focusing on the neglected issue of what the governance of carbon pricing on the international level looks like. In the same vein, the chapter contributes to the analytical ambition of this book by

exploring and mapping out the meso level of international institutions that are promoting carbon pricing.

The existence of no less than thirteen institutions promoting carbon pricing begs the question of how the institutions align in terms of membership, governance functions, and their interpretation of the norm of carbon pricing, as well as how they interact, especially given that there is no immediately visible division of labour or orchestrating entity. The alignment and interaction are particularly important given the interdependence among these institutions in their efforts to promote carbon pricing. This interdependence is also rooted in the core norm of carbon pricing, which is based on the notion that climate change should be addressed through placing a price on emissions corresponding to its social costs (Nordhaus 2008). All institutions within the carbon-pricing subfield subscribe to this core norm of the subfield, yet there seems to be differences in terms of how this idea has been interpreted in practice (Meckling and Jenner 2016), which may have implications for the legitimacy and effectiveness of the work that they undertake.

The fact that the core norm has been interpreted in diverging ways and that the subfield is characterized by a medium number of institutions (fewer than the institutions addressing renewable energy, more than those addressing fossil fuel subsidies) also implies that it is difficult to predict the degrees of coherence and management of the subfield. Scholars of institutional fragmentation and polycentricity have argued that a shared core norm can enhance the coherence across a governance system (Ostrom 1990; Biermann et al. 2009). Yet, the diverging interpretations of the core norm may qualify such an effect. The same goes for potential cross-institutional variations of other dimensions such as membership or governance function. All this suggests to study the actual degree of coherence and management of the carbon-pricing subfield in greater detail.

Furthermore, it is worth mapping the subfield of carbon-pricing institutions due to their place within the climate-energy nexus complex (see Chapter 1). Carbon pricing, unlike fossil fuel subsidy reform and renewable energy, is explicitly climate-focused. Consequently, the UNFCCC plays a central role among the institutions that promote carbon pricing, but there is also a plethora of other institutions with little or no relation to the UNFCCC that have been highly active in the promotion of carbon pricing. We therefore explore the overall level of coherence between the institutions, and zoom in on the dyadic interlinkage between the UNFCCC and institutions embedded in the World Bank.

Following the analytical framework laid out in Chapter 2, we examine to which degree the interlinkage of said institutions is characterized by coherence, and how the degree of coherence has been managed by the institutions. Methodologically, this chapter is based on a qualitative case study that involves documentary analysis of official documents and secondary sources, as well as targeted interviews with

key officials previously or currently working for the secretariats of the institutions under scrutiny or for closely related international organizations. All in all, twenty semi-structured interviews were conducted, either in person or via phone and Skype, whilst being audio-recorded, transcribed, coded, and analyzed with the NVivo programme. The interview questions as well as the coding of the interviews focused on the role of the individual institutions, their interlinkages and the attempts to manage them, and the overall subfield, as well as how the norm of carbon pricing has been interpreted.

Our chapter will proceed with first providing an overview of carbon pricing as a policy instrument, including a discussion of carbon taxes, carbon markets, and offsets as well as a review of the literature on carbon pricing. Subsequently, the international institutions that promote carbon pricing and carbon markets are mapped in terms of their interpretation of the previously mentioned core norm, their membership (public, private, or hybrid), and their governance functions. After this meso-level analysis, the chapter zooms into the interlinkage between the UNFCCC and the World Bank institutions and on how the interlinkage between these institutions has been managed.

6.2 Carbon Pricing: An Economic Solution to an Environmental Problem

Pricing greenhouse gas emissions is the fundamental solution to climate change, according to much of the environmental economics literature (see, for instance, Jacobs 1997; Tol 2011; Sterner and Coria 2012). Institutions that promote such pricing of emissions can be said to reflect the norm complex of liberal environmentalism (Bernstein 2001), and carbon markets in particular have been described as a key component of 'climate capitalism' (Lane and Newell 2016). Consequently, these institutions have been promoted by leading economists, economic organizations such as the International Monetary Fund and the World Bank, and influential journals and newspapers such as the Economist or Financial Times, as well as environmental NGOs such as the World Wildlife Fund (WWF).

Carbon pricing can take form through carbon taxation or the trading of allowances to emit greenhouse gases in a carbon market. The term 'carbon market' refers to systems for trading with other entities that are covered by the same emissions trading or cap-and-trade system with an overarching cap. Moreover, the term covers systems for purchasing carbon credits (or 'offsets') from entities outside of said target and that can be counted toward an emissions target, e.g. the Clean Development Mechanism (CDM) (Paterson et al. 2014).

Measures of carbon pricing were first adopted by Nordic countries such as Finland (1990) and Sweden (1991), which introduced carbon taxes preceding

international agreements on climate change. Throughout the 1990s, carbon taxes were adopted by (mainly smaller) European countries. Carbon markets, which were inspired by US experiences with creating a market for trading allowances to emit sulphur (Aldy and Stavins 2012), quickly became one of the most popular climate-policy instruments in the period following the adoption of the Kyoto Protocol (Meckling 2011a; Meckling 2011b; Paterson 2012). In terms of covered emissions, the EU emissions-trading system introduced in 2005 constitutes the largest carbon-pricing instrument in the world and was crucial in establishing carbon markets as a key climate policy instrument. Private corporations (e.g. British Petroleum) as well as local and regional governments (e.g. California) also adopted carbon-pricing instruments.

More recently, however, carbon taxes have regained some of the attention they had received in the early and mid-1990s, while carbon markets (especially the EU emissions-trading system and the offset markets) have been plagued by periods of falling demand and prices. Both instruments have since 2010 been adopted by a diverse set of countries covering all regions of the world and different political systems and levels of income (Skovgaard et al. 2019). The emissions covered by carbon-pricing policies across the globe encompass 20 per cent of global emissions, mainly stemming from energy use within industry, transportation, and power generation, whereas emissions from non-energy use (e.g. agriculture, forestry, or waste) are covered in very few cases (World Bank 2018b).

6.3 Meso-Level Coherence

In this third section of the chapter, we will map out the field of international carbon-pricing institutions that are anchored around the World Bank and the UNFCCC. The first subsection is dedicated to provide a short overview of the emergence of the institutional complex on carbon pricing, followed by a fourfold distinction of how the institutions under scrutiny interpret the core norm underlying this subfield. Next, we describe the patterns of memberships and governance functions that shape the resulting net and coalitions among the selected institutions.

6.3.1 Emergence of the Institutional Complex on Carbon Pricing

The first cases of carbon pricing occurred long before the establishment of international institutions that would support such efforts. It was only following the introduction of carbon markets in the Kyoto Protocol that the first institutions were introduced specifically to promote carbon pricing. These were transnational business coalitions, most noteworthy IETA, that cover particularly finance and energy corporations and environmental NGOs, and are often highlighted as a

key factor in the early diffusion of carbon markets (Meckling 2011a; Paterson 2012). These early carbon-pricing institutions promoted carbon markets as *the solution* to climate change and were important in the adoption of carbon markets in the European Union and US states; particularly in California and the north-eastern states (Meckling 2011a; Paterson 2012). The UNFCCC played an important role both in defining carbon markets as a key policy instrument in the Kyoto Protocol and in subsequently promoting and defining the rules for offsets within the Kyoto Protocol framework (see discussion of the offsets in Section 6.4.1).

Yet, most of the carbon-pricing institutions that are currently active have been established since 2007. Recently, institutions promoting carbon pricing have proliferated, rather than solely carbon markets. This indicates a significant, yet under-explored, new development in the international governance of carbon pricing. It is important to note that this surge in carbon-pricing institutions involves public actors to a much larger degree than the initial carbon-market promoters, as discussed in the sections to follow. As we will show, the differences among these approaches reflect variations in how the underlying core norm of reducing emissions through pricing is interpreted.

6.3.2 The Core Norm of Carbon Pricing

The core norm of carbon pricing is based on the notion that climate change is best mitigated by giving emitters an incentive to reduce emissions in terms of a price signal, and that the decision of how to reduce emissions is best left to the market. These notions are, in turn, underpinned by the understanding of actors as economically rational, and of the response to climate change as compatible with liberal and capitalist systems.

Yet, while this core norm is fundamental to all carbon-pricing policies and efforts to promote carbon pricing, it can in practice be interpreted in rather diverging ways. In an institutional complex in which several institutions with different memberships are embedded within the climate-energy nexus, there is scope for diverging and even conflicting applications of this norm. We therefore distinguish four dimensions along which interpretations of the core norm may vary: quantity versus price instruments, whether polluters should pay for all of their emissions or not, mandatory versus voluntary schemes, and carbon pricing within a given jurisdiction versus offsetting. For each dimension, we discuss how the institutions have interpreted the dimension in practice.

First, on the most basic conceptual level, there is a key distinction between placing the costs of the externality of climate change on the polluters (Pigou 1932; Jacobs 1997) – thus also adhering to the 'polluter pays principle'

(OECD 1974) – and between creating a system to allocate property rights to emit greenhouse gases, as well as to the trading of these rights (Coase 1960; Felli 2015). While carbon taxes explicitly constitute taxation, the tax component of carbon markets with auctioning consists of the money that polluters have to pay to the state (or other auctioning entity) for each emission allowance, and is hence more implicit. Nonetheless, this tax component is easily identifiable to the industry sectors that have to purchase the allowances (Rabe and Borick 2012).

Furthermore, carbon markets regulate the quantity of emissions, while carbon taxes regulate the price of emissions. This distinction between quantity and price instruments led Meckling and Jenner (2016) to argue that whereas carbon markets are rooted in neoliberalism and a US-dominated tradition of policy making, carbon taxes are rooted in ordo-liberalism and the European policy-making tradition. According to Meckling and Jenner, the former tradition delegates more authority to market forces since it creates a new regulatory market. Yet, we are not convinced by the association between carbon taxes and ordo-liberalism, since Pigou was a Keynesian economist and since carbon taxes are preferred over carbon markets by all kinds of economists worldwide (including neo-classical ones). This is due to its more direct imposition of the externality on the polluter (Rabe and Borick 2012).

While all institutions have promoted carbon markets, carbon taxes have almost solely been established by public and especially hybrid institutions, most notably the CPLC and the PMR. This is unsurprising given that the private institutions in question have been established to promote functioning carbon markets (with the exception of the C4C, which advocates that companies set an internal shadow carbon price). A more interesting development is an apparent move away from focusing almost solely on carbon markets to increasingly promoting carbon taxes in parallel. We will discuss this development further when focusing on the World Bank institutions in a subsequent section.

Second, there is a distinction between whether polluters must pay for all of their emissions – as they do in systems with a carbon tax and in emissions-trading systems in which all allowances are auctioned – or whether polluters only pay for emissions above a given baseline – as they do in emissions-trading systems with free allocation (so called grandfathering; see Aldy and Stavins 2012) and in case of voluntary offsets. These two options constitute parts of a continuum, with several carbon-market policies operating somewhere in between. For example, most of the world's emissions-trading systems combine grandfathering and auctioning of allowances. Mandatory carbon taxes nonetheless always imply that all emissions are subject to the polluter paying for them. In terms of concrete interpretation, most of the institutions do not hold an explicit official position in this regard. This may be explained by the fact that a bulk of institutions that promote carbon markets

would meet less support for their efforts if they explicitly preferred full pricing of all emissions.[1]

The third conceptual dimension is whether carbon pricing is mandatory or voluntary. Carbon pricing has been adopted either in the form of mandatory schemes that cover all entities within particular sectors operating within the polity (states, sub-national entities such as provinces, and supranational entities such as the EU), or as voluntary schemes (mainly carbon markets) joined by companies that would like to commit to reducing or offsetting their emissions. Unlike most other mitigation policies, mandatory carbon pricing provides revenue for the public budget, a characteristic appealing to powerful finance ministries and politicians facing budgetary constraints. Voluntary carbon markets, on the other hand, refer to institutionalized markets that are responsible for trading those verified emissions reductions (VERs) that are not part of the regulatory schemes under the Kyoto Protocol and the EU ETS (Benwell 2009; Segerson 2013).

The voluntary carbon-trading actions of this sector are thus constituted of the activities of organizations or individuals taken outside of, in addition to, or beyond the existing environmental policies or basic environmental laws and regulations on carbon emission and trading. Operating independently from the UNFCCC emission targets and offset mechanisms, the voluntary carbon-trading markets are led by various public and private actors and follow standards created by its industrial stakeholders. Besides offering opportunities to engage in emissions trading and to enable genuine reduction of carbon emissions that could potentially exceed the goals set by mandatory carbon-trading markets, there are several other motivational factors for engaging in voluntary carbon-trading measures. In reaction to the normative pressure from NGOs or externally existing regulations to reduce emissions, actors can use carbon-trading measures to fulfil corporate social responsibility (CSR) goals and to realize marketing opportunities in line with liberal environmentalist goals and values (Lyon and Maxwell 2007; Benwell 2009). The voluntary carbon market therefore plays an influential role for the private sector as it focuses on individual consumers and green consumerism (Lyon and Maxwell 2007; Choi 2015). However, voluntary schemes are often established in relation to existing regulatory schemes, which means that they may undermine the process of establishing successful mandatory policies (Lyon and Maxwell 2003; Segerson 2013).

The institutions analyzed here have not explicitly taken a stance on whether mandatory or voluntary approaches are preferable. Most public and hybrid institutions (except the C4C) work mainly with mandatory policies, whereas

[1] Interview with senior official from the NCM, 25 May 2017; interview with senior official from the CNP, 28 July 2017.

IATA_COP and, to some degree, the Gold Standard and the NCM work with voluntary carbon markets or voluntary offsets. The different involvement in either regulatory or voluntary carbon pricing reinforces the divide between public actors such as the UN, the World Bank Group, and closely related state regulations and policies on the one hand, and the private actors referring to business corporations and individual consumers on the other hand. Within some areas, most notably aviation, there has been a development to move from voluntary standards (IATA_COP) to mandatory ones (CORSIA).

The fourth dimension of the norm of carbon pricing relates to the distinction between carbon taxes and emissions trading that reduce emissions within a defined jurisdiction on the one hand, and offsetting on the other hand, which enables the purchasing of carbon credits (or 'offsets') from entities in other jurisdictions, for example as in the CDM. Whereas both taxational emissions trading and monetary offsets are referred to as constituting carbon markets due to their shared focus on operating through the trading of emissions allowances, they differ regarding this key distinction of jurisdictions.

Thus, none of the institutions have explicitly endorsed offsets over within-jurisdiction reductions, or vice versa. In their practices, however, they have generally promoted one or the other. Today, offsets are to a larger degree supported and disseminated by private institutions, rather than by public and hybrid ones. Nevertheless, none of the latter are, as such, opposed to them. Offsets such as the CDM were defined as a key instrument in the global response to climate change by the UNFCCC and the Word Bank institutions in the years between the Kyoto Protocol and the Copenhagen Accord. Importantly however, the focus has increasingly turned to the linking of carbon markets, especially in the context of Article 6 of the Paris Agreement (Kansy 2016).[2]

In summary, while all institutions promote the norm of carbon pricing, there are important differences in how they interpret the norm in practice, creating clusters of private institutions on the one hand, and public and hybrid institutions on the other. These differences were most pronounced regarding the choice between carbon markets and carbon taxes.

6.3.3 Membership

In this section, we will outline the membership of the carbon-pricing and carbon-market institutions. This allows us to map how the institutions differ in terms of coverage of actors that have diverging preferences from the members of another

[2] The Paris Agreement does contain a provision establishing a new 'sustainable development mechanism' (Article 6.4), which will constitute a new kind of offset mechanism oriented not only toward trading emissions allowances but also promoting sustainable development beyond climate change.

Table 6.1 *Overview of governance functions across different types of institutions (public, hybrid, private) for carbon pricing.*

	Public	Hybrid	Private
Standards & Commitments		UN Global Compact Caring for Climate (C4C)	Gold Standard Carbon Neutral Protocol (CNP) Verified Carbon Standard (VCS)
Operational Activities	Western Climate Initiative (WCI)		
Information & Networking	International Carbon Action Partnership (ICAP)	Networked Carbon Markets Initiative (NCM) Carbon Pricing Leadership Coalition (CPLC)	International Emissions Trading Association (IETA)
Standards & Commitments; Operational	Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)		International Air Transport Association Carbon Offset Program (IATA_COP)
Information & Networking; Financing	Partnership for Market Readiness (PMR)		
Standards & Commitments; Information & Networking	United Nations Framework Convention on Climate Change (UNFCCC)		

institution, e.g. business and state actors. The carbon-pricing issue area mapped out here consists of thirteen institutions (see Table 6.1), comprising public, private, and hybrid constituencies. While a few of them have existed since the 1990s, most have been established from 2007 onwards. Business and public actors (states, IOs, and sub-national governments) are the main constituents, while civil society organizations are only involved in the CPLC, the C4C, the Gold Standard, and the NCM. With the exception of the WCI (which covers the states and provinces on the West coast of the USA and Canada), all institutions are global in terms of membership and reach. However, their members (especially from business and CSOs) tend to be concentrated in industrialized countries and, to a lesser degree, emerging economies.

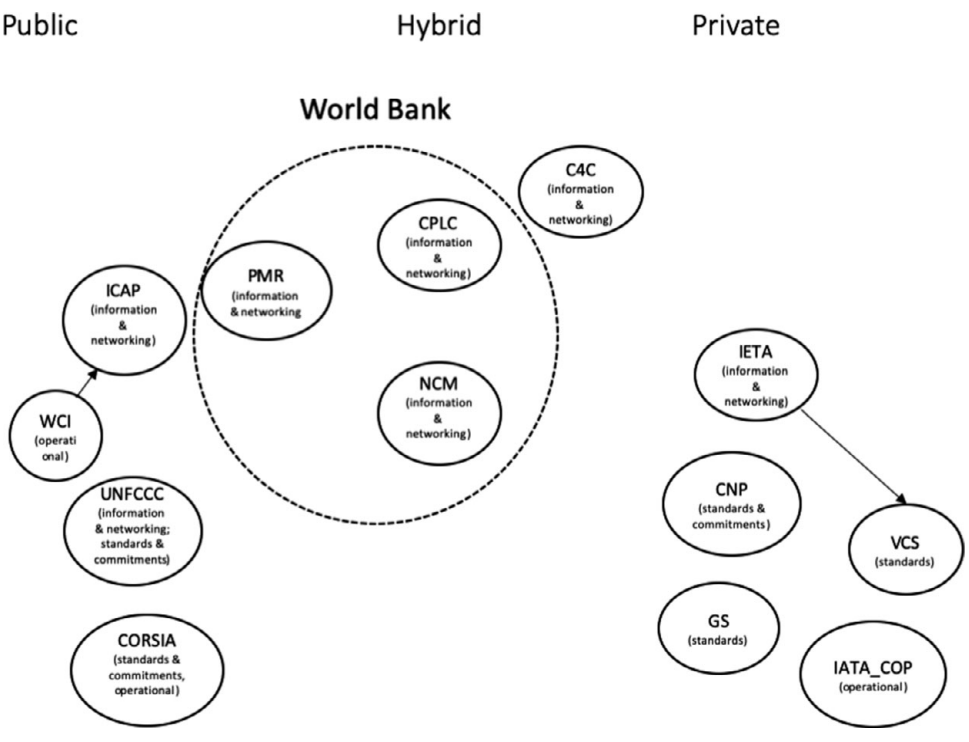

Figure 6.1 Public, hybrid, and private carbon pricing institutions and their membership relations.

One important feature of carbon market institutions is, thus, that several of them are related to, or nested within, wider institutions. For instance, the C4C is nested in the UN Global Compact, which is a UN initiative to motivate businesses to adopt sustainable and socially responsible policies, while the PMR, the NCM, and the CPLC are nested within the World Bank (see also Figure 6.1). Regarding the aviation sector, CORSIA, adopted in 2016, is nested within the public International Civil Aviation Organization (ICAO), whereas IATA_COP is nested within IATA, which is the international trade association for the aviation industry. Institutions that are not couched within wider overarching institutions were often established by other international institutions, e.g. IETA being one of the founders of VCS, and the Gold Standard being founded by the WWF. Thus, some of the relations between the institutions are not only very close, but also hierarchical in nature (Alter and Meunier 2009).

Figure 6.1 depicts some of these connections and also provides a first general overview of the institutions' governance functions, which will be discussed in further detail in Section 6.4. The figure pictures the membership relations whilst being organized under the categories of public, hybrid, and private. Arrows denote

that the institution is a member of the institution that the arrow points to. Note that the institutions' position within the public, hybrid, and private groups, respectively, does not implicate a hierarchy or that they are in other ways more or less 'public' or private than other institutions within the same group.

6.3.4 Governance Functions

Mapping out the membership and governance functions of the thirteen institutions shows that they differ to some degree in their focus on various carbon-market activities, but that there are also considerable geographical and functional overlaps. In this section, we therefore identify and discuss two major clusters within the issue area; one centred around the public and hybrid institutions embedded in the World Bank, and another consisting of private institutions, mainly centred around IETA (see Figure 6.1). In order to illustrate our chosen approach to clustering the institutions, we later zoom in on two sets of public and hybrid institutions, namely the UNFCCC and the World Bank institutions, as we find them more politically and academically relevant than the private institutions (Section 6.4).

The **private institutions** have been instrumental in promoting emissions trading globally and in different polities around the world (Meckling 2011b; Paterson 2012; Paterson et al. 2014). Their key objective is to further carbon markets, which offers companies (including financial companies) useful business opportunities in the growing carbon-market sector. At the same time, they give emitting industries the possibility to continue their activities without costly carbon taxes and regulation (Paterson 2012). The Gold Standard's efforts to ensure and improve the environmental and social integrity of offsets stands out in this respect, due to its clear and comprehensive focus on supporting social aspects of sustainable development.

In terms of governance functions, the private institutions focus on providing a venue for information and networking (IETA), on setting standards and commitments for offsets (VCS, Gold Standard), and on advancing company carbon neutrality (CNP). In order to facilitate successful and validated greenhouse gas emissions trading, actors such as CNP and VCS offer businesses, organizations, and technical partners a global standard framework for achieving carbon neutrality through internal mitigation measures (e.g. energy efficiency) and emission offsetting.

The goal of most of these private institutions is to achieve carbon neutral economic growth. For example, IATA_COP, a leading carbon offset programme for the aviation industry, endorses voluntary offset schemes in which passengers pay to offset the emissions caused by their individual share of the flight's emissions (IATA 2009). Investing in such voluntary efforts to combat climate

change with a focus on the individual customers allows businesses to address the CO_2-emissions impact of their industry without having to suppress the demand for air travel, and diminishes the call for mandatory and public regulation.

The governance functions of **public institutions** mainly regard the provision of information and networking possibilities between carbon-pricing actors, particularly from countries that have, or are considering to, implement carbon-pricing policies. The UNFCCC and CORSIA also engage in setting standards and commitments (both described subsequently). Of the public institutions, CORSIA and the WCI engage in operational activities, while the PMR provides financing for polities interested in adopting carbon-pricing policies. The aim of these undertakings is generally to offer platforms for collaboration to achieve decarbonization of specific sectors, countries, or states within federal systems. The goal of ICAP, for instance, is to provide a platform to strengthen the compatibility and effectiveness of the regulated carbon-trading market in order to promote innovation and allow for ambitious global reductions of global warming emissions. The objective of public institutions such as ICAP, the PMR, and the WCI is thus to provide a platform to strengthen the compatibility and effectiveness of carbon pricing. Following dissatisfaction with the private, voluntary efforts to curb aviation emissions, public and mandatory regulations to reach carbon neutrality were introduced with the establishment of CORSIA in 2016.

In public institutions, both carbon markets and taxes are promoted, albeit with a stronger emphasis on promoting carbon markets. Important in this respect is the objective of creating a global carbon market or at least to link the different carbon markets. Such linking is believed to improve economic efficiency by ensuring uniform prices and thus avoid distorting competitiveness and utilize low-cost abatement options (Kansy 2016). For instance, PMR-led programmes provide countries with grant funding to support the implementation of carbon taxes or emissions trading and include programmes for technical and policy work. The most recently established institution, CORSIA, has been created by the public aviation institution ICAO to ensure the offsetting of emissions above a given level; here relating to the total emissions of global aviation in 2020. CORSIA is voluntary until 2027, after which participation becomes mandatory for all countries except for those with a very low share of global aviation or those that are most vulnerable to climate change due to poverty and other structural inequalities.

Hybrid institutions perform governance actions and services that largely seek to bridge the gap between the public regulatory and the private voluntary markets to achieve broader and globally applicable schemes. The NCM, for instance, aims to support various actors from civil society, governments, and the private sector to

link voluntary and mandatory carbon markets. Their goal is thus to facilitate cross-border trade and link carbon markets through improving the transparency and comparability of the existing markets (NCM 2017). The CPLC, too, offers voluntary partnership for leaders across governments, the private business sector, and civil society who share the long-term goal of achieving a global carbon-pricing economy.

The major governance functions of hybrid institutions include information-sharing, networking, capacity building, and knowledge-sharing, which are viewed as necessary instruments to connect strong institutions and regulations with the workings of the market economy. The CPLC and the C4C, for example, view carbon pricing as an essential step to approach zero net emissions, and both institutions see their core role in forming coalitions to approach a global carbon-pricing economy.

The institutions we studied are, with the exception of the WRI, all global in scope. Apart from CORSIA and IATA_COP, which focus on aviation, none of these institutions have specific sectoral foci, but focus on mitigation in general. De facto, this implies that the institutions address emissions from energy use to a significant degree, since virtually all carbon-pricing measures address energy use while not many of them cover emissions from other sources.

When summing up the just-presented mapping of institutional governance functions, it can be said that although all thirteen institutions work toward mitigating climate change by placing a price on carbon emissions, they do differ in regard to which activities they support. Broadly speaking, the public and hybrid institutions mainly focus on the support of *political decisions* to implement carbon pricing (e.g. CPLC, PMR) and to link mandatory carbon markets (e.g. ICAP, NCM), whereas the private institutions tend to focus on the facilitation of the *trading* of emissions allowances between private entities (e.g. IETA, see subsequent discussion). Among the private institutions we examined, both the Gold Standard and VCS aim to improve the social and environmental integrity of offsets. IETA[3] is an association for companies within the carbon-market sector that works for a functional international framework for carbon trading, whereas IATA_COP offers voluntary offsets for air travel.

6.3.5 Summary: Coherence at the Meso Level

When assessing the overall consistency of the thirteen carbon-pricing institutions, one needs to consider that there is no clear division of labour, as their functions and

[3] IETA also comprises the International Carbon Reduction and Offset Alliance (ICROA), which sets standards for voluntary offsets.

activities overlap to a large degree. Not only do most of them cover the same global geographical scope and the same policy sectors (although CORSIA and IATA_COP focus on international aviation), but they often also perform similar governance functions with similar objectives. It can thus generally be said that the institutional carbon-pricing complex is characterized by a medium level of consistency with some duplication and coexistence.

Regarding the application of the core norm, one can observe medium consistency, with several of the private institutions promoting voluntary carbon markets and offsets, while public institutions promote mandatory carbon pricing in the shape of taxes as well as carbon markets. Yet, these differences in application do not inherently involve conflict. In terms of membership, we also see a medium degree of consistency, with considerable overlap between the memberships of the different institutions – and without any organizing principles except for institutions being respectively public, hybrid, and private.

Finally, concerning governance functions, there are considerable overlaps in terms of undertaking similar functions (especially Information and Networking, see Table 6.1) on a global level, but also a divergence that ensured that most governance functions were covered. In many cases, public, private, and hybrid institutions are performing similar governance functions to achieve similar or related objectives. For instance, ICAP (public), the NCM (hybrid), and IETA (private) all work to promote the linking of carbon markets by providing information and networking opportunities. They thus overlap in terms of what they do (governance functions and carbon markets) but represent different members with potentially diverging preferences, e.g. IETA representing the interests of the carbon-market sector and ICAP those of the polities with emissions-trading policies.

This notwithstanding, our interviews show that collaboration is more common than competition. The widespread information and networking activities (e.g. conferences and workshops) provide ample opportunities for maintaining informal personal contacts.[4] Furthermore, sometimes institutional interlinkages are formalized in terms of Memoranda of Understanding or other written agreements between institutions, such as the Memorandum of Understanding between the IATA_COP and IETA. Importantly, formal relationships also exist in terms of institutions being members of each other (e.g. the WCI being a member of ICAP) or through participating in meetings of major institutions (e.g. of the UNFCCC). The World Bank institutions also often act as central hubs for interlinkages since they can draw on the expertise of the different World Bank departments.[5]

[4] Interview with VCS official, 31 May 2017.
[5] Interview with NCM official, 22 May 2017, Interview with NCM and PMR official, 25 May 2017.

While the large amount of institutions may indicate possible competition, especially when new initiatives enter the field, our analysis shows that the here-mapped institutions often seek to avoid this by informal communication and networking, e.g. on the individual level.[6] Through bilateral or multilateral exchange, policy makers engage in technical dialogue on the operation of their carbon markets and opportunities for deepening and connecting those markets.[7] Hence, situations that could potentially lead to conflict have been defused through behavioural mechanisms of ad-hoc coordination. Furthermore, the institutions often collaborate on operational activities, e.g. the implementation of offset projects, and institutionalized benchmarking, for instance in making sure that CORSIA will only use credits that followed the standards of VCS or other institutions.[8]

However, the most predominant mechanism for collaboration includes knowledge production and leadership to drive ambition. Key activities include organizing workshops for stakeholders and co-developing guidance materials to mainstream climate-leadership practices. All collaborations are multi-stakeholder in nature, involving companies large and small as well as civil society and public institutions.[9] Often such collaboration is based on complementarity, e.g. the diverse areas of expertise that the institutions exhibit.[10] It equally builds on their diverse membership circles, inasmuch as private institutions often collaborate with public and hybrid institutions.[11] Such divisions of labour are generally not based on official agreements as much as on informal assessments of relative strengths.[12]

Altogether, the field is characterized by some duplication but also bilateral (sometimes ad-hoc) coordination. Arguably, had the institutions differed more on the core norm, e.g. if not all of them were in favour of carbon markets, coordination could not have played the same role. The conducted interviews indicate that the level of coherence can be explained due to informal contacts and a desire to avoid overlaps, rather than the institutions being synergetic by design.

6.4 Micro-Level Coherence

6.4.1 Institutions under Scrutiny

We argue that the UNFCCC and the World Bank–embedded institutions constitute the most politically important institutions within the subfield of carbon pricing, and two incumbent nodal institutions of the climate-energy nexus as a whole. Apart

[6] Interview with senior PMR official, 27 August 2018.
[7] Interview with senior ICAP official, 23 May 2017.
[8] Interview with VCS official, 31 May 2017.
[9] Interview with NCM and PMR official, 25 May 2017.
[10] Interview with Gold Standard official, 22 May 2017; Interview with NCM and PMR official, 25 May 2017.
[11] Interview with C4C official, 20 June 2017; Interview with IATA official, 25 May 2017.
[12] Interview with senior PMR official, 27 August 2018.

from their empirical importance, their crucial differences also give them high theoretical relevance. The UNFCCC is an intergovernmental environmental institution based on a multilateral environmental agreement, which serves as the forum for further intergovernmental negotiations concerning how to address climate change on the global level. The World Bank, on the other hand, is an economic institution, more specifically a multilateral development bank, focusing on poverty eradication and building shared prosperity in developing countries (Nielson and Tierney 2005; Park 2005). These thematic differences notwithstanding, both the UNFCCC and the World Bank, together with their secretariats and embedded institutions, share certain characteristics, such as their global membership reach and their public or hybrid (the CPLC and the NCM) constituencies.

Not unlike the way in which the UNFCCC Secretariat supports the UN climate regime, the World Bank provides secretariat services to the PMR, the NCM, and the CPLC. These services are managed by the World Bank's climate change group, sometimes with the same person working for more than one institution. We refer to this form of relationship as embeddedness within the World Bank, although the associated institutions differ in their nature, with the CPLC being a coalition, the PMR a trust fund, and the NCM a World Bank initiative. Physically located at the World Bank headquarters in Washington, DC, the three World Bank institutions differ in their roles. The CPLC is a coalition of actors from business, civil society, and politics with the purpose of advocating carbon pricing and, increasingly, promoting carbon pricing among businesses. The PMR is a World Bank Group multi-donor trust fund that provides technical advice and funding to the (at the time of writing) nineteen developing countries that are interested in developing carbon-pricing policies. None of these countries are low-income countries. The trust fund also seeks to create and share knowledge about carbon pricing.[13] The members of the PMR are state governments, usually represented by UNFCCC negotiators. The World Bank is also the trustee and the delivery partner of the PMR. Finally, the NCM supports the linking of climate markets through ensuring that the tradeable units from the different markets are comparable and fungible (that their units are interchangeable).

The UNFCCC has historically addressed carbon pricing in the context of the Kyoto Protocol's flexibility mechanisms, namely the CDM, Joint Implementation, and emissions trading between industrialized countries. After 2015, the focus has changed from the flexible mechanisms of the Kyoto Protocol to the specific operationalization of Article 6 of the Paris Agreement (UNFCCC 2015), which includes the linking of emissions-trading systems and offsets as well as non-market approaches. Within the UNFCCC as an institution, the international bureaucracy of

[13] Interview with senior official from the PMR, 27 August 2018.

the UNFCCC Secretariat[14] supports the negotiations and other activities of the UN climate regime, especially by providing information, arranging meetings, and drafting proposals (Busch 2009). Like other environmental regime secretariats, it performs key regime functions and has agency in its own right (Jinnah 2014, ch. 2). This said, the UNFCCC Secretariat has limited autonomy in its mandate and resources compared to the World Bank. The Secretariat is included in this analysis because of its important carbon-pricing activities, which can be divided into: (1) the support of negotiations specifying the contents of Article 6; (2) supporting the operation of clean development mechanisms; and (3) the supporting of countries that adopt carbon pricing to meet their Nationally Determined Contributions by providing technical advice, etc.[15]

Regarding the core norm of carbon pricing, the World Bank institutions are as such not permitted to promote official opinions about how carbon ideally should be priced, but they nonetheless have considerable autonomy from their member states (Nielson and Tierney 2005). The UNFCCC's position on carbon pricing reflects a compromise between its member states. Even more restricted than the World Bank institutions, the UNFCCC Secretariat is not permitted to hold an official position on how carbon ideally should be priced. Nonetheless, it is possible to identify how the UNFCCC Secretariat and the three World Bank institutions have addressed and framed carbon pricing in their day-to-day practices and, in this way, interpreted key aspects of the norm.

The World Bank as well as the institutions embedded within it have since 2014 stressed the importance of pricing carbon and, except for the NCM, have emphasized carbon taxes, emissions trading, and, to a lesser degree, offsets. The current framing aims to internalize the 'external costs of carbon emissions . . . and tie them to their sources through a price on carbon' and to 'shift the burden for the damage back to those who are responsible for it and who can reduce it. . . . In this way, the overall environmental goal is achieved in the most flexible and least-cost way to society' (World Bank 2018a). This framing and the bracketing of carbon taxes with carbon markets is a recent development. Prior to 2014, the World Bank focused on carbon markets and paid little attention to carbon taxes. Tellingly, the World Bank's influential annual report, which since 2014 has been named 'The State and Trends of Carbon Pricing', was from the initial publication in 2003 and until 2012 named 'The State and Trends of the Carbon Market' (no report was published in 2013).[16] This change is also visible in the content of the reports, with the pre-2014 reports focusing on the functioning of the carbon markets around the

[14] We use the term 'The UNFCCC' to refer to the institution as a whole, and state it explicitly when we refer to the Secretariat.
[15] Interview with UNFCCC Secretariat official, 3 July 2017.
[16] We are grateful to Matt Paterson for alerting us to this development.

globe and their total volume measured in tonnes of CO_2-equivalents and US dollars, rather than carbon pricing as an instrument to address the externality of climate change or shift the burden (World Bank 2012). Thus, the focus was put on creating functioning markets and linking them rather than pricing emissions and ensuring that those responsible pay for them. This position is close to that of other carbon-market institutions such as IETA. Finally, whereas the PMR (founded in 2010) and the NCM (founded in 2013) contain the word 'market' in their names, the CPLC (founded in 2014) focuses on carbon pricing.

The UNFCCC also changed focus, from initially concentrating on the Kyoto Protocol mechanisms to now targeting the mechanisms under Article 6 of the Paris Agreement as well as promoting carbon pricing as a policy instrument. This change was driven by the UNFCCC negotiation process that culminated in the Paris Agreement. The UN climate regime did not adopt specific positions on what domestic carbon pricing should look like, including whether polluters should pay for all of their emissions. Instead, it implicitly emphasized and facilitated particular practices, including a new offset mechanism, the Sustainable Development Mechanism, under the Paris Agreement, which focuses on sustainable development in a broader sense, rather than just mitigation. The UNFCCC Secretariat considered carbon pricing a key policy instrument, without defining it as a stand-alone instrument but rather as one among many.[17] Importantly, the Secretariat views carbon pricing as a tool to shift investment from carbon-intensive to sustainable means of production and to promote the deployment of the low-carbon technologies required for meeting the 2 or 1.5 degree target.[18]

6.4.2 Interlinkages

In terms of governance functions, all four institutions (UNFCCC, CPLC, PMR, and NCM) focus on sharing and creating new information as well as networking, while the PMR also engages in the provision of financing. These governance functions do not have the same inherent potential for conflict between the institutions as standard setting (see Chapter 2).

Regarding the core norm, the World Bank and its carbon-pricing institutions have tended to focus on first carbon markets and then carbon pricing as the crucial step in fighting climate change: once implemented, there is little reason to intervene politically in the subsequent causal chain leading to lower emissions. Nonetheless, there is also significant convergence between the UNFCCC and the World Bank institutions: they all place a strong emphasis on creating a functioning global

[17] Interview with senior UNFCCC official, 30 June 2017.
[18] Interview with UNFCCC Secretariat official, 3 July 2017.

carbon market, but in the interviews they did not take a stance on whether all emissions should be priced or if grandfathering was acceptable. Importantly, the World Bank has operated within the structures established by the UNFCCC (JI/CDM; NDCs; Article 6), but the main change in the perspective of the World Bank institutions (from a focus on carbon markets toward carbon pricing) did not originate in the UNFCCC. Likewise, all four institutions have promoted offsets as well as carbon pricing within given jurisdictions in various ways. The UNFCCC, the PMR, and the NCM all focus on mandatory carbon pricing, whereas the CPLC also has promoted voluntary carbon pricing within businesses.

A more important dividing line is the different confidence in the ability of the market. The World Bank institutions have been agnostic about how carbon pricing would lead to reduced emissions and framed the fact that carbon pricing leaves the decisions of how to mitigate to the market as a key strength. This neoclassical approach is based on the notion of the market as making the optimal choices. By contrast, the UNFCCC's approach to carbon pricing leaves considerable discretion to the states in the context of their Nationally Determined Contributions (NDCs) and only operates with carbon pricing as one instrument among many. Although the Paris Agreement and subsequent activities in the context of the Agreement's Article 6 endorse offset mechanisms and the linking of carbon markets, they very much leave any action up to the Parties and avoid talking about introducing a carbon price (Marcu 2016). The difference can be explained by the considerable autonomy of the World Bank institutions from their member states – compared to the UNFCCC set-up, in which states are involved in the decision-making process and can individually veto proposals.

6.4.3 Mechanisms

The UNFCCC and World Bank institutions interact in a range of different ways. First, and unlike for the subfield of carbon pricing in general, normative interlinkages play a major role. A sequence of rules from the UN climate regime, from the Kyoto Protocol to the 2015 Paris Agreement, have shaped much of the action of the World Bank institutions. The PMR is working with several countries to develop carbon-pricing policies that will help them achieving their NDCs. The NCM seeks to develop tools for linking of carbon markets that can be relevant under Article 6. Prior to the Paris Agreement, the Kyoto Protocol provided a similar context for the World Bank, which was key in developing JI/CDM – inter alia through its Prototype Carbon Fund and through its support for capacity building in countries seeking to host JI/CDM projects (Lazarowicz 2009; Lederer 2012). The World Bank institutions also promoted domestic carbon markets to help countries meet their targets under the Kyoto Protocol – and currently they

(especially the PMR and the CPLC) promote carbon pricing as an instrument for countries to meet their NDC commitments.

Second, the World Bank institutions and the UNFCCC engage in behavioural interlinkages, especially through interlocking memberships. The UNFCCC Secretariat is an observer to the PMR and the CPLC, the same way that the World Bank is an observer to the UNFCCC. Importantly, several of the officials representing national governments within the PMR are also UNFCCC negotiators working on Article 6 within these negotiations.[19] Furthermore, The CPLC was launched at COP21 in Paris.

Third, the behavioural interlinkages often provided the basis for cognitive interlinkages, especially in terms of exchanging information and knowledge. The UNFCCC has especially collaborated with the PMR, both regarding turning the provisions of Article 6 into more concrete guidelines and providing support for countries adopting carbon pricing in the context of their NDCs.

6.5 Micro-Level Management

Drawing on the typology of micro-level management outlined in Chapter 2, it can be stated that the relationship between the UNFCCC and the World Bank–embedded institutions is managed jointly, with both sides trying to ensure compatibility between their activities. There were not any attempts of orchestration by third parties. Notwithstanding some unilateral low-key attempts, management was mainly bi- or multilateral and mainly took place through regular institutionalized contacts and meetings between officials. Officials working on carbon pricing constitute the main agents of management, whereas higher echelons of the World Bank and the UNFCCC (e.g. the World Bank Group Boards of Directors or the UNFCCC Executive Secretary) were less involved.

The institutions tend to collaborate in case they operate within the same countries, especially in Africa.[20] Regarding the support for countries adopting carbon pricing in the context of their NDCs, an informal division of labour has emerged bottom-up: the PMR mainly works with middle-income countries while the UNFCCC Secretariat concentrates on less developed countries.

Altogether, it makes sense to characterize the interlinkage between the UNFCCC and the World Bank institutions as one of coordination, although the management attempts have been taken in a bottom-up, incremental manner rather than as the result of overarching deliberate planning. The carbon-pricing subsystem has been constantly evolving and proliferating, which makes it more

[19] Interview with senior PMR official, 27 August 2018.
[20] Interview with senior PMR official, 27 August 2018.

difficult to assess the degree of coherence in a counterfactual no-management scenario. Yet, the informants interviewed for this study underscored the importance of management efforts in avoiding outright competition or conflict, albeit mainly for preventing deterioration. It is thus not possible to say whether the level of coherence has improved over time.

6.6 Conclusions

The analysis showed that the plethora of institutions that promote carbon pricing at the international level overlap to a significant degree in terms of geographical scope and governance functions. Most of them have global reach and membership, and several of them focus on either information-sharing and networking or standard-setting. The institutions were found to differ in terms of membership constituencies, with five public, three hybrid, and five private institutions. Mapping out institutional membership illustrated that the public and hybrid institutions are clustered around the World Bank, while the private ones circle around IETA. The institutions also differed in terms of their jurisdictional focus, with public and hybrid institutions mainly focusing on supporting political decisions to implement carbon pricing and to link carbon markets, and with private institutions focusing on the trading of emissions.

Altogether the field is characterized by coordination or coexistence, with significant attempts to establish a division of labour, and only little outright competition or conflict. Interlinkages have mainly been cognitive in nature (through workshops, co-developing knowledge, and information) and institutional (through interlocking memberships or written agreements). Generally, these interlinkages have been informal and took place between two or more institutions without significant differences in power.

We particularly focused on the interlinkage between, on the one hand, the UNFCCC and, on the other hand, the World Bank and the institutions embedded within it. The analysis showed that, despite the differences between the two camps, interlinkages are characterized by close coordination. This coordination has been mainly informed by a cognitive interaction mechanism – with institutions being observers at each other's meetings – and a normative mechanism – with the World Bank institutions operating within the framework set by the UNFCCC, particularly the offset mechanisms and the NDCs. Both the UNFCCC and the World Bank institutions promoted carbon pricing in general and a global carbon price in terms of linking carbon markets specifically. Differences between both sides were managed in a bottom-up, incremental fashion, which leads us to characterizing the relationship between the two institutions as one of coordination.

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