Over the past few years, the implementation of domestic carbon pricing has been expanding at the national and sub-national level. This trend can be attributed to stakeholders and sectors at various levels recognising the benefits of carbon pricing and the ability of these policies to achieve cost-effective reductions.

In contrast to the Kyoto Protocol, the Paris Agreement has adopted a hybrid approach calling on all Parties to determine their own contributions to mitigate climate change affording flexibility to countries in their choice of policy tools. This new format of action gives the responsibility to Parties and sub-governments to implement domestic carbon pricing policies without recommending a specific tool.

Article 6 of the Paris Agreement promotes the use of voluntary cooperative approaches by introducing the prospect for Parties to use: ITMOs, SDM and non-market approaches. This provision could create a suitable framework to support the development of transnational carbon pricing policies by recognising the value of mitigation actions which could directly or indirectly put a price on carbon.

Overall expansion of domestic carbon pricing policies will depend on whether it can enable a cost-effective transition to a low-carbon economy with subsequent benefits and co-benefits. Additionally, it will depend on how the rules and modalities of the Paris Agreement, defined in the coming months and years, can be applied to the development of effective carbon pricing policies.

Section 1. A growing consensus on the use of carbon pricing policies to support the domestic transition towards a low-carbon economy

Over the last 25 years, there has been growing consensus from governments on the role of carbon pricing policies at enabling a cost-effective transition to a low-carbon economy (Figure 1). Between 2012 and 2015 alone, the number of countries that have implemented carbon pricing instruments has increased by 90% (World Bank, 2015) and at the end of 2015, carbon taxes and Emissions Trading Schemes (ETS) had been implemented by 40 governments and over 20 subnational jurisdictions, covering 4.3% and 8.8% of global GHG emissions respectively (I4CE, 2015).

Figure 1. Carbon pricing timeline: 25 years of ETS and carbon taxes

Carbon tax and ETS implementation timeline

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* 2004 carbon tax covers cars and motorcycle; 2006 carbon tax covers non EU ETS energy and industry sectors

Source: I4CE - Institute for Climate Economics, July 2016
There are several carbon pricing instruments that can be used by governments to lower their GHG emissions. These include carbon taxes, crediting mechanisms and ETS which directly price carbon emissions (explicit carbon pricing) and emission standards and energy taxes which indirectly price carbon (implicit carbon pricing). A carbon price, whether explicit or implicit, can also be established voluntarily by businesses and organizations (internal carbon pricing).

As seen in Figure 2, explicit carbon prices around the world will vary depending on where they have been implemented. As of 2015, explicit carbon prices ranged from €1.8 to €123/tCO₂e. When examining domestic carbon prices, it is important to note that the effectiveness of a carbon price cannot only be determined by its value, but rather the ability of that economic signal to motivate decarbonisation cost-effectively.

1.1. GROWING INTEREST IN DOMESTIC CARBON PRICING POLICIES: FROM BURDEN TO (CO)BENEFITS

Due to economic and political barriers, putting a price on carbon at the domestic level has been met with opposition and resistance (Grantham Institute & CCCEP, 2016) such as competitiveness concerns for industrial sectors. While these are legitimate concerns even today, several regulatory provisions have been designed to reduce adverse impacts of carbon pricing. Examples of provisions to counter competitiveness issues include free allocation to trade-exposed sectors or border carbon adjustments mechanisms. These provisions can ultimately encourage political support towards carbon pricing policies by alleviating industry and other stakeholder concerns.

Aside from the environmental and climate benefits of reducing GHG emissions, there is growing understanding among policy makers that if carbon pricing policies are well aligned with domestic interests, they could offer many other direct and indirect co-benefits (Parry, 2014). Putting a price on carbon can offer various co-benefits through enhanced energy security by increasing the competitiveness of fuel switching, renewable energy deployment, and investment in energy efficiency measures. Additionally, many social and health co-benefits can emerge. For example, if a carbon price is able to motivate changes in mobility behaviour, health co-benefits can be derived from the enhanced air quality resulting from reduced motoring emissions (Parry, 2015).

In terms of economic co-benefits, carbon pricing instruments can generate new proceeds for governments which can be invested in reducing emissions in sectors that may not be covered by the policy and thereby broaden the scope of environmental co-benefits (see Box 1). These revenues

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**FIGURE 2. CARBON PRICING WORLD MAP**

Source: I4CE - Institute for Climate Economics, July 2016
provide technical support for the implementation of carbon pricing. The Partnership for Market Readiness (PMR), for example, has been instrumental in aiding developing and emerging countries to prepare for the implementation of domestic carbon pricing. These high-level, multilateral and international discussions have played a key role in sending strong signals to businesses and other non-state actors on the likely expansion of policies that put a price on carbon. In addition to government initiatives, internal carbon pricing has also become an increasingly accepted strategy for companies wishing to prepare for future regulations that restrict GHG emissions and to gradually adapt their portfolios and investments to low-carbon pathways. According to CDP, in 2015, 435 companies across an array of sectors reported that they have put a price on carbon (a 190% increase from 2014) and that 583 companies anticipate implementing one within the next two years. These collaborations and dialogues are only a few of the existing initiatives that continue to build momentum and advance carbon pricing discussions at all levels and across sectors.

Section 2.
The Paris Agreement: facilitating domestic carbon pricing policies

The political momentum to put a price on carbon continues to steadily build throughout the United Nations Framework Convention Climate Change (UNFCCC) process established in 1992. Annual Conference of the Parties to the Convention (COP) have served as a platform to enhance the governance of international climate change objectives. The Kyoto Protocol was the first international attempt to set binding emissions reductions targets for industrialised countries, based on effort sharing between Parties. In 2020, the Kyoto

can also be allocated towards projects that aim to fulfil development objectives or reduce the effects of distortive taxes. For example, Québec and California allocate a large portion of cap-and-trade revenues towards building public transport infrastructure. Revenues can also be used to support those that are disproportionately affected by rising energy costs such as certain vulnerable industries or lower-income households. California, for example, invests at least 25% of proceeds in initiatives that target disadvantaged communities (California Senate Bill 535, 2012).

1.2. MULTILATERAL COALITIONS: CATALYSING CARBON PRICING THROUGH KNOWLEDGE SHARING

Along with the increased uptake of carbon pricing policies, several multilateral initiatives have emerged to create opportunities for public and private stakeholders to further discuss carbon pricing. These have rallied support for carbon pricing policies, enabled knowledge sharing and provided technical support thereby enhancing the feasibility of implementing effective carbon pricing policies world-wide. For instance, in 2015, the G7 established the Carbon Market Platform and aims to advance the development and linking of G7 countries’ carbon markets and explore new avenues for climate cooperation which has recently been extended to non-G7 countries. On the G7 platform, several carbon pricing policy issues have been identified for discussion, including the design of common rules and accounting guidelines, the use of market mechanisms, and possibilities for international coordination. In line with the same objective, platforms such as the International Carbon Action Partnership (ICAP) and the Carbon Pricing Leadership Coalition (CPLC), supported by the World Bank, gather public and private sector entities to share carbon pricing experiences and establish meaningful policies and practices. The World Bank has also developed programs

### BOX 1. EU ETS AND THE USE OF AUCTIONING REVENUES

EU ETS use of Auctioning Revenues: By 2030 Member States of the EU ETS will have accrued a total revenue of approximately €270 billion. EU ETS guidelines encourage States to allocate at least 50% of this revenue toward enhancing climate action. This provision has facilitated investment into a wide variety of GHG reduction initiatives that have spread benefits beyond EU ETS sectors. Most of the revenues have been allocated to reduce domestic GHG emissions via investments in renewable energy and energy efficiency programs. Some Member States have also used these revenues to support mitigation and adaptation in developing countries through climate action funds.

**FIGURE 3. EU ETS REVENUE SPENDING BY MEMBER STATES, 2013-2014**

- Renewables support: 34.4%
- Energy efficiency support: 20.6%
- International support: 25%
- Conservation (forestry, agriculture, ecosystem management etc.): 3.4%
- Low-carbon technologies and infrastructure: 16.6%

Source: I4CE - Institute for Climate Economics, 2015
Protocol’s second commitment period is due to expire and will be replaced by the Paris Agreement negotiated at COP21.

The new Paris Agreement established in December 2015 intends to be the world’s first multilateral climate change agreement to extend comprehensive responsibilities to both developed and developing countries. By adopting a bottom-up approach to determine and define Party ambition, the Agreement recognises that domestic low-carbon policies are the basis for addressing climate change and proactively seeks to engage parties in the decarbonisation of their economies.

2.1. THE PARIS AGREEMENT’S BOTTOM-UP APPROACH CAN ENHANCE THE UPTAKE OF DOMESTIC CARBON PRICING POLICIES

In contrast to the Kyoto protocol approach, the Paris Agreement adopts a hybrid approach to developing international climate commitments, based on national circumstances and on the principle of Common but Differentiated Responsibilities (UNEP, 1992). This approach calls on all Parties to voluntarily establish intended Nationally Determined Contributions (iNDCs) through a transparent UNFCCC process, detailing climate plans to be undertaken in the post-2020 period.1

Current iNDCs ambition levels are not sufficient to limit global warming to 2°C, with an expected emissions gap of roughly 12-16 GtCO₂e by 20302 (UNEP, 2015). To close this gap, it is necessary to internalize environmental and social costs of climate change (UNFCCC, 2015). Putting a price on carbon can be an effective way to reflect these costs while sending clear economic and political signals to stimulate cost-effective decarbonisation.

Of the 160 INDC submissions representing 187 countries, more than half mentioned putting a price on carbon through the potential use of market mechanisms. Several expressed interest in using bilateral and multilateral market mechanisms to meet their emissions reduction goals.

The “important role of providing incentives for emission reduction activities, including tools such as domestic policies and carbon pricing”3 is recognised in Decision 1374 (applicable to Non-Party Stakeholders). This broad reference to carbon pricing is in keeping with the Paris approach that respects countries’ sovereignty in choosing policies that achieve their iNDCs.

2.2. WITHIN THE AGREEMENT ITSELF, SEVERAL PROVISIONS COULD SUPPORT THE UPTAKE OF DOMESTIC CARBON PRICING POLICIES

The bottom-up architecture of the Paris Agreement affords Parties the ability to optimize their self-interests through the INDC process and creates a broad scope for the development of carbon pricing policies domestically.4 Additionally, by placing responsibilities on all Parties, the Agreement can help create a more level international playing field with a patchwork of carbon prices. This could help alleviate some competitiveness concerns that would otherwise inhibit the implementation of carbon pricing policies. The provision to review INDCs every five years5 could also help advance international and domestic carbon pricing by allowing room for Parties to explore and adopt different policy measures in the future, of which carbon pricing can be one.

Furthermore, some elements provided by the Agreement’s transparency framework6, such as the Global Stocktake, National Inventory Reporting and other provisions mandated under Article 13, could enable the tracking, recording and communication of progress towards INDCs. These, among other provisions could also improve the transparency on the choice of domestic carbon pricing policies which could influence the use of instruments that put a price on carbon within Parties’ contributions. Additionally, these

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1 Paris Agreement, 2015. Article 3
2 Calculated based on the 119 INDCs submitted on and before October 1st 2015
3 Paris Agreement, 2015. Draft decision 137/CP.21 (Section V: Non-Party Stakeholders)
4 Paris Agreement, 2015. Article 13
5 Paris Agreement, 2015. Article 4.11
6 Paris Agreement, 2015. Article 13
provisions could help provide an overview and enable mapping of decarbonisation pathway. In addition, regular communication and/or updates to INDCs will present the level of potential domestic needs for international emissions reductions that will require transfers between Parties.

Section 3. The Paris Agreement: Scaling up transnational carbon pricing policies through voluntary cooperative approaches

Although the Paris Agreement does not in itself establish an international carbon market or a carbon price, the provisions of the Paris Agreement and in particular Article 6, could in the future, facilitate the emergence of transnational approaches that directly or indirectly put a price on carbon.

3.1. THE PARIS AGREEMENT: INTRODUCING NEW VOLUNTARY COOPERATIVE APPROACHES THROUGH ARTICLE 6

The Paris Agreements recognises that “some parties may choose to pursue voluntary cooperation”7 to implement their INDCs to allow for higher climate ambition. These ‘cooperative approaches’ are supported by broad definitions at this stage, but could in the future, accommodate a large range of actions that Parties may choose to pursue. These include, general cooperative approaches to be defined by Parties, approaches that result in Internationally Transferred Mitigation Outcomes (ITMOs), a mechanism for sustainable development and a framework for non-market approaches. Article 6 outlines the following cooperative approaches:

Internationally Transferrable Mitigation Outcomes (ITMOs)
The Agreement introduces a voluntary option to use “internationally transferred mitigation outcomes”8 which could allow for bilateral and multilaterally transferred emissions reductions to count towards Parties’ INDCs. This provision could allow for Parties to jointly fulfil their INDCs through the international transfer of emission reductions attained through cooperative approaches. The Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA) will adopt guidelines on transparency and robust accounting to avoid double-counting and ensure the environmental integrity of transfers.9

Mechanism for Sustainable Development (SDM)
The Agreement also introduces a mechanism, available to all Parties, that aims “to promote the mitigation of greenhouse gas emissions while fostering sustainable development”.10 This Mechanism, dubbed the SDM, invites “public and private entities authorized by a Party”11 to “deliver overall mitigation in global emissions”12 and will operate under the supervision of the UNFCCC.13 This provision will allow for Parties “to benefit from mitigation activities resulting from emissions reductions that can also be used by another party to fulfil its nationally determined contributions”.14 The CMA will adopt rules and modalities for the SDM on the basis of voluntary participation; real, measurable and long-mitigation results; scope of activities; additionally of reductions; verification and certification; and past experiences adopted under the Convention.15

Framework for Non-Market Approaches

A framework for the use of non-market approaches to “promote mitigation and adaptation ambition” is introduced in Article 6.8. It allows parties to fulfil their INDCs through the coordination of effort using approaches such as “finance, technology transfer and capacity-building, as appropriate”.16 It further permits cooperation across instruments and relevant institutional arrangements17. The Subsidiary Body for Scientific and Technological Body (SBSTA) will develop a work program with the aim of enhancing linkages and synergies, and facilitating the implementation and coordination of various non-market approaches.18

3.2. ARTICLE 6 INTRODUCES FACILITATIVE RELIABLE CONDITIONS TO DRIVE TRANSNATIONAL TRADE OF EMISSIONS REDUCTIONS IN THE FUTURE

Provisions under Article 6 of the Paris Agreement could enable the international transfer of emissions reductions between heterogeneous policies by introducing:

- Flexibility in the cooperative approaches Parties choose to fulfil their national contributions and accommodating a variety of climate policies that directly or indirectly put a price on carbon.
- ITMOs which afford flexibility to Parties in two ways, first, by allowing for cooperation between Parties and secondly by providing flexibility in the type of emissions reduction they choose to transfer or make available to other Parties. For example, developing countries may be more inclined to use lower-cost emissions reductions towards fulfilling their own INDCs, thereby choosing to export higher-cost emissions reductions (Ecosystem Marketplace, 2015).
- The SDM which could enable the emergence of a large offset mechanism allowing Parties the flexibility to attain emission reductions outside of their jurisdiction which could lead to extending this carbon price signal to other sectors and countries.

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7 Paris Agreement, 2015. Article 6.1
8 Paris Agreement, 2015. Article 6.2/3
9 Paris Agreement, 2015. Article 6.2
10 Paris Agreement, 2015. Article 6.4
11 Paris Agreement, 2015. Article 6.4(b)
12 Paris Agreement, 2015. Article 6.4(d)
13 Paris Agreement, 2015. Article 6.4
14 Paris Agreement, 2015. Article 6.4(c)
15 Paris Agreement, 2015. Draft decision 38/CP.21 (Section III: Decisions to give effect to the Agreement)
16 Paris Agreement, 2015. Article 6.8
17 Paris Agreement, 2015. Article 6.8(c)
18 Paris Agreement, 2015. Draft decision 40/CP.21 (Section III: Decisions to give effect to the Agreement)
Carbon clubs are formed when small groups or individuals align themselves in order to jointly achieve carbon emission reductions (Petksonk et al, 2015). A good example of a carbon club is the Western Climate Initiative (WCI), a group of subnational jurisdictions composed of North American states and provinces. Through the WCI, members are able to work together to define and evaluate emissions trading policies which are suitable to national circumstances and could have an impact at the regional level.

This cooperative approach to policy development has enhanced the uptake of carbon pricing at the domestic and transnational level in North America by creating conditions that are suitable for the expansion and linking of carbon pricing instruments. Due to the common ETS framework developed ex-ante within the WCI, members of the WCI, who had already established individual ETSs, (California and Québec) were able to link their individual emissions trading scheme programs with greater ease. The success of the link has attracted other WCI members Ontario and Manitoba to establish ETS and link to the California-Québec market. This example of club formation and the linking of carbon markets is the first of its kind but could foreshadow the potential replication of this strategy by other national and subnational jurisdictions looking to adopt cooperative approaches to carbon pricing.

Using cooperative approaches, Parties are able, if they choose, to align national interests with other Parties who have similar national circumstances or are seeking mutually beneficial mitigation arrangements. In this way Article 6 provisions could help to overcome the fragmented INDC approach of the Paris process by potentially enabling the convergence of heterogeneous policies between Parties. Depending on the level of detail used to define the ‘accounting framework’ that will support Article 6, the common rules established by the CMA could also increase opportunities for the adoption of transnational policies that put a price on carbon. A harmonised accounting framework can be considered the bedrock of emissions trading schemes, and enables confidence in the transfer and trade of emissions reductions across jurisdictions. By introducing requirements for environmental integrity of emissions reductions and avoidance of double counting, within the accounting framework, all Parties could be held to the same standards. These standards could foster greater trust and thereby could increase the bilateral and multilateral flows of emission reductions.

By introducing this cooperative framework and recognising the effects of mitigation policies beyond borders, the likelihood of linking policy mechanisms in the future increases (UCL Institute, 2015). This prospect can be very attractive for the expansion of carbon pricing instruments, especially for smaller groups operating at the subnational level with well aligned interests, as they are likely to achieve results faster than as part of a larger multilateral process like the UNFCCC (Petksonk et al, 2015).

**Next steps**

The lack of definitions for concepts contained in the Agreement leaves significant room for interpretation of the text. The challenge moving forward will be agreeing on technical aspects (accounting, governance, environmentally integrity, etc.) of the provisions without political objectives hijacking the process which could then reopen the negotiations of Article 6 (Marcu, 2015).

Rules, modalities and guidance that further define ITMOs, the SDM and the framework for non-market approaches will be adopted under the authority of the CMA at the first session of the CMA (CMA1). Over the coming years, SBSTA will develop guidelines and recommend rules, modalities and procedures to further define provisions in Article 6, in addition to the work program for non-market approaches. The next and 44th Session of the UNFCCC Subsidiary Bodies will meet at the UNFCCC Bonn Climate Change Conference from 16-26 May 2016. The Agreement will enter into force one month after “55 countries representing 55% of total global greenhouse gas emissions” have ratified the Agreement.

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19 Paris Agreement, 2015. Article 6.2/7
20 UNFCCC, Decision 37.39.40/CP.21
21 The sessions will include SBI44, SBSTA44, and the first session of the Ad Hoc Working Group on the Paris Agreement (APA1)
22 Paris Agreement, 2015. Article 21
References


