

Policy Brief Carbon pricing instruments in Latin America

Latin America carbon pricing forum

Gustavo Velloso, Betânia Vilas Boas, Guilherme Lefèvre, Mariana Nicolletti¹



SÃO PAULO SCHOOL OF
BUSINESS ADMINISTRATION
*Center for Sustainability
Studies*



**Konrad-Adenauer-Stiftung e.V. (KAS)
Regional Programme Energy Security and
Climate Change in Latin America (EKLA)**

Head: Christian Hübner

Editorial coordination: Maria Fernanda Pineda / Karina Marzano

Fiscal address: Av. Larco 109, Piso 2, Miraflores, Lima 18 - Perú

Address: Calle Cantuarias 160 Of. 202, Miraflores, Lima 18 - Perú

Tel: +51 (1) 320 2870

energie-klima-la@kas.de

www.kas.de/energie-klima-lateinamerika/

INDEX

About the authors	3
1. Introduction	4
2. Existing initiatives and lessons learned	5
2.1. Carbon Pricing Instruments and the need for accurate information	6
3. Getting ready for a CPI: Assessments and simulations	7
3.1. Partnership for Market Readiness	8
4. Regional cooperation, linking and additional opportunities	9
5. Key messages and recommendations	10



Disclaimer:

The opinions expressed in this document are exclusive responsibility of the authors and may not coincide with those of FGVces. They also do not reflect necessarily the opinions of the Konrad Adenauer Foundation.

¹ The four authors are researchers at the Center for Sustainability Studies of Getulio Vargas Foundation (FGVces).

ABOUT THE AUTHORS

Gustavo Velloso Breviglieri (MSc)

Researcher at the Center for Sustainability Studies at Fundação Getulio Vargas (FGVces)

Betania Ap. Perboni Vilas Boas

Researcher at the Center for Sustainability Studies at Fundação Getulio Vargas (FGVces)

Guilherme Lefèvre

Project Coordinator at the Center for Sustainability Studies at Fundação Getulio Vargas (FGVces)

Mariana Nicolletti

Project Coordinator at the Center for Sustainability Studies at Fundação Getulio Vargas (FGVces)

1. INTRODUCTION

Climate change is a complex problem that demands cooperative efforts². Addressing such a problem likely requires the employment of diverse policies and instruments. An increasing number of jurisdictions have adopted **Carbon Pricing Instruments** (CPIs) as a way to reduce their greenhouse gas (GHG) emissions³. Indeed, in 2017, there were 51 CPIs implemented (or scheduled for implementation) in the world⁴. There is still great potential for further developments, since 88 countries mention the use of CPIs in their Nationally Determined Contributions under the **Paris Agreement**⁵.

Coordinated efforts can help to maximize the opportunities of governments, companies and other stakeholders involved with CPIs, for instance by leveraging political support and societal acceptance, as well as creating common markets and capitalizing on trade opportunities. To this point, the **Pacific Alliance**⁶ provides a good example: a regional trade agreement seeking to create a common market between its member countries - Chile, Colombia, Mexico and Peru- with the objective of promoting sustainable development.

It is always beneficial to explore good practices and lessons learned from both public and private sector experts and practitioners on this topic. In this sense, the outlook for carbon pricing in Latin America presents several important initiatives and events that happened

recently or are planned to take place in the coming years. There is plenty of opportunity to strength the connections and synergies among jurisdictional initiatives, as well to link and potentiate international efforts in the region.

For this purpose, The Center for Sustainability Studies of Getulio Vargas Foundation (FGVces) and Konrad Adenauer Foundation, through its Programme Energy Security and Climate Change in Latin America (EKLA), organized the **Latin America Carbon Pricing Forum**, a two-days event held at FGV in São Paulo, Brazil, promoting the exchange of experiences and enhancing the level of engagement from different stakeholders towards CPIs and related topics within this region.

Our goal is not to present policy options for a given problem, but rather to highlight interesting ideas and accumulated experiences discussed in this **Forum**. All content offered below comes from the panels, expositions and dialogues registered at such an event⁷, except when otherwise referenced; they do not (necessarily) represent a consensus between participants, but topics worthy of further consideration.

Throughout the following sections, we expect to provide a coherent narrative, tying together an **impressive array of concepts and ideas** regarding the use of CPIs in the region. At the end, we propose some key messages and recommendations.

2 Keohane, R. O. and Victor, D. G. (2016). Cooperation and discord in global climate policy. *Nature Climate Change*, 6, 570-575.

3 For an introduction on Carbon Pricing Instruments, refer to The Climate Reality Project. (2017). Handbook on carbon pricing instruments. Washington, DC: The Climate Reality Project.

4 World Bank; Ecofys (2018). State and Trends of Carbon Pricing 2018. Washington, DC: World Bank.

5 Agreement celebrated at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2015. It vows to "combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future". Source: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

6 <https://alianzapacifico.net/en/what-is-the-pacific-alliance/>.

2. EXISTING INITIATIVES AND LESSONS LEARNED

Latin America has gradually developed a number of initiatives on carbon pricing, mostly through the form of carbon taxes applied to fossil fuels (**Table 1**), and some lessons can already be extracted from these recent experiences.

Latin American countries are approaching carbon pricing mechanisms through gradual efforts. All existing CPIs can be expanded in scope, including more sources and fuels; tax rates could also be raised over time. Some experts would say that these are adequate strategies to deal with climate change⁸. On the other hand, transitioning to an Emissions Trading Scheme (ETS), as planned in Mexico and under consideration in Argentina, Chile and Colombia, would allow for market linkages, with benefits such as increased funding for mitigation activities, and further help countries to reach their Paris Agreement goals.

All four countries in **Table 1** implemented their CPIs as part of broader structural (tax) reforms. While in Argentina the tax substituted previous taxes on fuels, in the other three the tax had the intended purpose of increasing governments' revenues. International linking between initiatives is a desirable goal, however local experiences are fairly recent and the countries are still evolving in their use of CPIs. Yet the spreading of pricing experiences in the region provides meaningful opportunities for collaboration, such as the **Carbon Pricing in the Americas** (CPA) platform (see more below).

Conferring flexibility for regulated entities to comply with a CPI is one way to lower the economic impacts of the instrument and raise its public acceptability. In this sense, Colombia has allowed for companies to compensate (offset)

Table 1. Carbon taxes in Latin America

Country	Starting year	Goals	Regulated entities	Price
Argentina	2017	- Revenue neutral ² .	Producers and importers of fossil fuels (excluding natural gas and jet fuel).	USD 10,0/tCO ₂ .
Chile ¹	2017	- Finance educational reform. - Establish framework for other green taxes.	Plants with more than 50MWt of potential capacity (boilers and turbines).	USD 5,0/tCO ₂ .
Colombia	2017	- Discourage the use of fossil fuels. - Induce technological innovation.	Producers and importers of fossil fuels (excluding coal).	Approximately 7,0 USD/tCO ₂
Mexico	2014	- Reduce GHG emissions. - Increase governmental revenues.	Producers and importers of fossil fuels.	Approximately 2,5 USD/tCO ₂

Source: Prepared from presentations made by speakers from the mentioned countries.

1. Chile also has a local pollutants tax levied on new, light and medium duty, vehicles that indirectly affects GHG emissions.
2. The carbon tax substituted previously existing taxes on fuels (not related to their carbon content).

⁷ For a detailed report of the event and its sessions, please refer to: <http://www.kas.de/energie-klima-lateinamerika/en/publications/53071/>. For original slides, presentations, and event photos go to: <http://gvces.com.br/fgv-sedia-encontro-latino-americano-sobre-precificacao-de-carbono?locale=pt-br>.

⁸ See, for instance: Tol, R. S. J. (2017). The structure of the climate debate. *Energy Policy*, 104, 431-438.

their emissions elsewhere and avoid the tax; this possibility was used with forestry, commercial reforestation and hydroelectric projects amounting to between 7 and 9 million tCO₂e in 2017, domestically and internationally. Beginning in 2018, only domestic offsets will be accepted. Mexico also allows for offsets within its carbon tax.

In general, there is a substantial amount of learning by doing in the establishment of the existing CPIs in Latin America; all countries still need to address how their instruments overlap with other policies. Providing enough room for corrections and policy innovation within a CPI's legal framework seems to be a valuable lesson for decisions-makers in the region.

2.1. Carbon Pricing Instruments and the need for accurate information

There was a great deal of consensus among Forum participants regarding the need for a robust information system on GHG emission. It was agreed upon that the appropriate design, implementation and management of any CPI depend on accurate information about GHG emissions. Thus, **Measurement, Report and Verification (MRV)** tools and guidelines should anticipate and accompany efforts to price carbon, so to improve their effectiveness and to strengthen their environmental integrity. MRV schemes, however, can and often target different objectives, such as – corporate inventories, follow-up on national international commitment, support investors decisions.

In this regard, an MRV in support of a mandatory CPI generally requires detailed, comprehensive and bottom-up information on the relevant sources of GHG

emissions. Even countries with already established instruments vow to continue developing and expanding their MRV systems. Chile, for instance, is studying ways to improve its MRV practices under the World Bank's **Partnership for Market Readiness** (further discussed below).

Challenges still abound, particularly with regards to measurement practices in the agricultural and forest sectors, currently absent from existing CPIs in the region. Similarly, although arguments have long been made about Brazil's potential to sequester carbon emissions by reforestation and restoration activities, it is necessary to improve current MRV techniques to allow such a sector to participate in an environmentally sound CPI, for instance as offsets in an ETS.

3. GETTING READY FOR A CPI: ASSESSMENTS AND SIMULATIONS

For most Latin-American countries, (new) carbon pricing initiatives could (and likely will) be part of their climate change policy mix. Therefore, businesses and governmental bodies should anticipate and prepare themselves for such a future. Governments, for instance, can evaluate the likely impacts of different carbon pricing mechanisms on the economy, by carrying out Regulatory Impact Analysis (RIA). These assessments can also address the political acceptability of different forms of CPIs. Similar endeavors can assist policy-makers in understanding how to prevent carbon leakage, address competitiveness concerns and entertain possible uses for the revenues arising from a CPI.

These assessments can, for instance:

- Challenge the common belief that the adoption of low-carbon technologies is necessarily associated with economic losses;
- Highlight the fact that economy-wide CPIs allow countries to reduce emissions at a lower cost;
- Show that banking mechanisms allow for more efficient intertemporal emissions reductions trajectories, within an ETS.
- Disseminate the use of evaluation tools such as Marginal Abatement Cost Curves (MACC), both by governments and businesses.

Another route for capacity building, particularly for businesses, comes in the form of the two existing ETS simulations in the region:

- **Brazil:** Since 2013, a group of companies participates voluntarily in a carbon market simulation⁹, collectively discussing issues such as allowance allocation methods, points of regulation, offsetting mechanisms etc.
- **Mexico:** Since 2016, a voluntary Carbon Market Exercise¹⁰ runs through a digital platform, emulating all the elements of a regulated ETS, guiding participating businesses on how such an instrument works and providing inputs to future policy design. Mexico, indeed, will deploy a Pilot phase of an ETS starting in 2019.

Also on the businesses front, it has become ever more common for companies to attribute an **internal price on carbon**¹¹ to guide their commercial strategies and investment plans. The World Bank and Ecofys¹² reported that, in 2017, 1389 companies disclosed either the use or intention to employ an internal carbon price. Knowledgeable businesses leaders can better cope with the risks and seize the opportunities associated with CPIs.

9 Hosted at the Center for Sustainability Studies at the São Paulo School of Business Administration, Getulio Vargas Foundation. For more information, see <http://www.gvces.com.br/sistema-de-comercio-de-emissoes>.

10 Jointly developed by the Mexican Stock Exchange, MÉXICO2 and the Ministry of Environment and Natural Resources (SEMARNAT). For more information, see <http://www.mexico2.com.mx/medio-ambiente.php?id=13>.

11 In general, by adopting an internal price for their greenhouse gas emissions (so-called carbon emissions), companies seek to understand possible effects of mitigation policies on their business and investments, anticipating a future scenario of mandatory pricing. For a comprehensive review, see Chang, V. (2017). Private firm incentives to adopt internal carbon pricing. *Journal of Public and International Affairs*, 56-77.

12 World Bank; Ecofys (2018).

3.1. Partnership for Market Readiness

A meaningful initiative where national governments can evolve their understanding regarding CPIs is the Partnership for Market Readiness (PMR)¹³, a World Bank project that provides support for countries to prepare and implement their climate change policies. In Latin America, several countries participate in the initiative, being worth to mention¹⁴:

- **Argentina:** the country recently joined the PMR in order to explore possible ways to expand its existing carbon tax on fossil fuels, as well as incorporate new instruments, for instance, to enhance the deployment of renewable energy sources.
- **Brazil:** the largest emitter in the region, Brazil is investigating how to achieve its international

commitments in the most cost-effective way, modeling alternative policy scenarios and relying on public consultations to address their feasibility.

- **Chile:** the country is pursuing ways to improve its MRV system for its current carbon tax, develop a mandatory reporting system, and advance an MRV scheme for mitigation actions within its energy sector.
- **Colombia:** the country is developing a roadmap for the implementation of a domestic ETS, including its interactions with the existing carbon tax, with recommendations included in the national Climate Change Law, currently in legislative debate.

13 <https://www.thepmr.org/>.12 World Bank; Ecofys (2018).

14 Mexico and Peru also participate in the PMR.

4. REGIONAL COOPERATION, LINKING AND ADDITIONAL OPPORTUNITIES

Regional cooperation was seen by several Forum participants as a key issue when it comes to improve the cost-effectiveness of CPIs. As an example, globally integrated carbon markets could make it possible to achieve almost two times the emissions reductions from current climate policies with the same cost¹⁵. Locally, the cooperation between smaller groups of countries can help to foster confidence among policy-makers and businesses towards collaborative approaches to deal with climate change. In this sense, Mexico's intention to link up its prospective ETS with California (US) and Quebec (CA) represents a step in the right direction.

Another initiative worth mentioning is the **Carbon Pricing in the Americas (CPA)**, a cooperative framework launched in December 2017 by the government leaders of Canada, Chile, Colombia, Costa Rica, México, the Governors of California and Washington in the US, and the Premiers of Alberta, British Columbia, Nova Scotia, Ontario and Quebec in Canada. It vows to strengthen MRV schemes, develop common standards, share best practices, build capacities and engage stakeholders, whilst asserting CPIs' role as a central feature in climate policies.

Indeed, as more countries begin to develop their CPIs and join international coalitions, some benefits (among others) are to be expected:

- Approximating developed and developing countries;
- Lowering the costs of emissions reductions (globally);

- Minimizing concerns about competitiveness and carbon leakage;
- Addressing common issues, such as the inclusion of the forest sector within a CPI;
- Funding opportunities for technological transition and innovation;
- Promoting low-carbon regional development in Latin America.

Still on the issue of international cooperation, in a post-Paris Agreement scenario, capital could (and should) still flow from developed to developing economies. However, and contrary to initiatives in which funds are directed to "low-hanging fruits"¹⁶, it should be allocated to promote significant changes in infrastructural projects and to the deployment of new technologies.

With regards to additional opportunities, technological innovations could be associated to mitigation activities as well as to the design and operation of the CPIs themselves. A possible example is the use of Blockchain technology¹⁷ as a conceivable way to reduce the costs of establishing GHG emissions registries, preventing double counting of allowances and reducing transaction costs within an ETS.

15 P. Piris-Cabezas and R. Lubowski (2018) "Catalyzing carbon markets globally to realize the promise of Paris: The power of markets to increase ambition." Environmental Defense Fund. Washington, DC.

16 The experience with Kyoto's Clean Development Mechanism (CDM) could be interpreted as following such a path. This criticism is empirically and theoretically addressed, for instance, in Narain, U. & Velt, K. V. (2008). The Clean Development Mechanism's Low-hanging Fruit Problem: When Might it Arise, and How Might it be Solved? *Environmental and Resource Economics*, 40, 445-465.

17 For a broader discussion on the potentials of Blockchain in Latin America, see Hübner, C. (2018). More than Just Bitcoin. *International Reports of the Konrad-Adenauer-Stiftung*, 1/2018, 64-76.12 World Bank; Ecofys (2018).

5. KEY MESSAGES AND RECOMMENDATIONS

Some Latin American countries have recently implemented CPIs, mostly in the form of carbon taxes. Others are actively assessing how to best incorporate a CPI within their climate policies. That most of the region's GHG emissions will be covered by a pricing instrument is matter of when and not if, as believed by some panelists at the Forum. Thus, it is prudential to offer a few recommendations for the swift transition to such a future:

- **Expand knowledge about CPIs.** In Latin America, there is still a need to disseminate and improve knowledge on the benefits and challenges related to the use of CPIs as policy instruments. Benefits that should be highlighted are mainly associated with the ability of CPIs to achieve mitigation targets at the lowest cost (cost-effectiveness potential). Challenges that key actors need to be made aware of are mostly related to the implementation of a sound and trustworthy information (MRV) system.
- **Policy transfer in Latin America.** Latin American countries face similar problems regarding climate change and development and the exchange of public sector experiences, such as the efforts pursued by Argentina, Brazil, Chile and Colombia within the Partnership for Market Readiness, may lead to a swifter implementation of new climate policies and instruments.
- **Private sector's role as an instigator.** Several voluntary initiatives, such as the ETS simulations in Brazil and Mexico, serve as inspiration and provide additional impetus to further discussions over CPIs in regulatory contexts.
- **Integrated mindset to tackle climate change.** Although domestic, sectoral and theme-specific discussions should remain part of any efforts to address climate change, it is important to maintain an integrated and comprehensive approach to achieve mitigation targets in the most cost-effective manner, for the whole of Latin America, through the use of CPIs.
- **Greater regional integration is a definite win.** The mere provision of an environment for regional talks on CPIs already expands the potential for cooperation between countries. Initiatives such as the first **Latin American Carbon Pricing Forum** should continue into the future, connecting different stakeholders, initiatives, policies and instruments that share a common goal.



EKLA

Regional Programme Energy
Security and Climate Change
in Latin America

**Konrad-Adenauer-Stiftung e.V. (KAS)
Regional Programme Energy Security and
Climate Change in Latin America (EKLA)**

Fiscal address: Av. Larco 109, Piso 2, Miraflores, Lima 18 - Perú

Address: Calle Cantuarias 160 Of. 202, Miraflores, Lima 18 - Perú

Tel: +51 (1) 320 2870

energie-klima-la@kas.de

www.kas.de/energie-klima-lateinamerika/