

Latin America Carbon Pricing Forum

Report: topics discussed and final messages

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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.

The event was aimed at promoting the exchange of experiences and strengthening the actuation of the stakeholders, of different sectors, involved in carbon pricing agenda, based on the lessons learned from the initiatives undertaken so far in the region.

The first day was for presentation and debate of research projects and articles, in three sessions, and included a panel on the Brazil Partnership for Market Readiness (PMR) Project. In the second day expert and decision-makers presented their experiences and shared their knowledge about carbon pricing mechanisms in Latin America in four panels; one of these panels embraced four parallel sectorial sections: agribusiness, energy and transportation, forestry and industry.

More information on the agenda is available [here](#).

1st DAY

June 25th – Academic Sessions and Partnership for Market Readiness (PMR) Panel

Opening

During the Event's opening, representatives of the organizing institutions - Konrad Adenauer Foundation (KAS) and Getulio Vargas Foundation (FGV) - underscored the current relevance of the carbon pricing agenda in Latin America. Several carbon pricing initiatives are under way in the region, such as the various PMR¹ initiatives, which justify interactions and the exchange of experiences among the Latin American people on this subject.

In addition to a brief background on carbon pricing initiatives in Latin American countries, representatives from KAS and FGV thanked partner institutions and presented the programme for the first day. Finally, they informed the audience that the carbon emissions of both days of the Forum would be offset, a courtesy of the South Pole Group.

1st Session: research on carbon pricing in relation to forest/agriculture and MRV

The first session of presentations dealt with the topic of Measurement, Reporting and Verification (MRV) of GHG emissions, given that accurate and reliable information are necessary to support the design, implementation and operation of any Carbon Pricing Instrument (CPI), either under voluntary or mandatory arrangements. In this sense, three researchers at the World Resources

¹ Partnership for Market Readiness: www.thepmr.org

Institute (WRI) – Juliana Speranza, Talita Esturba and Alexandre Prado (in this order) – gave talks concerning recent developments on the standards and tools adopted at the GHG Protocol², which allow for businesses to measure and better manage their carbon emissions.

Presentations started with a brief overview of Brazil’s GHG emissions pattern, increasingly marked by energy and agricultural related emissions; highlighted the different purposes that an MRV scheme can have – corporate inventories, follow-up on national international commitment, support investors decisions; and enunciated some of the challenges currently present within the Brazilian context, for instance with regards to the need to harmonize state-based efforts and to provide a clearer and more effective national climate governance.

On the topic of agricultural GHG emissions, in particular, Ms. Esturba presented some of the opportunities for the sector stemming from an increased focus on harmonized MRV guidelines, for instance by creating the conditions to better assess the benefits associated with recovering degraded forest areas and providing additional impetus for Brazil’s Low-carbon Agriculture Plan (“Plano ABC”, in Portuguese)³.

Closing the session, Mr. Prado offered some of the reasons why forests should also be considered within a CPI in Brazil, such as the country’s considerable potential to sequester carbon emissions by restoration and reforestation activities and the need to incentivize conservation activities among rural producers. If, indeed, forest become part of a CPI, for instance as offsets, there is also the need to improve current MRV techniques to measure both carbon emissions and sequestration.

2nd Session – costs and impacts of the emissions reductions, fiscal policy and Brazilian NDC

This session addressed issues related to the possible economic impacts of climate change policies, especially those that put a price on carbon emissions.

The first speaker, Mrs. Camila Gramkow (Tyndall Centre for Climate Change Research) offered a presentation entitled: “Fiscal policy for green growth: a case study from Brazil”. In this presentation, Mrs. Gramkow include some results of a research carried out as part of her PhD. The main message brought forward by Mrs. Gramkow was that it is possible to align economic growth with the implementation of mitigation measures that put a price on carbon. In some scenarios included in her thesis, GDP increases after the establishment of a pricing instruments.

² For more information, see <https://ghgprotocol.org/>. For information regarding Brazil’s GHG Protocol Program hosted at FGVces, see <http://www.ghgprotocolbrasil.com.br/?locale=en>.

³ <http://www.agricultura.gov.br/assuntos/sustentabilidade/plano-abc/plano-abc-agricultura-de-baixa-emissao-de-carbono>.

As second speaker, Mr. Angelo Gurgel (FGV) presented a research led by him entitled: “The Impacts of the Brazilian NDC and their contribution to the Paris Agreement on Climate Change”. Two main questions that this research tried to answer were: (1) What are the economic costs of the Brazilian NDC as it was announced? And (2) What are the costs of alternative climate policies to achieve the same NDC targets? The following main results were presented: Brazilian NDC proposed at COP-21 (Paris) may be achieved by 2025 and 2030 at relatively low costs. However, low cost abatement opportunities from land use changes and renewables are gone after that. As such, carbon pricing instrument could play an important role in the Country’s mitigation strategies after 2030. Scenario’s modelled showed that carbon pricing instruments for a large number of participants from different economic sector could impact the economy less than when an instrument is designed for a limited number of sectors.

Mr. Flávio Pereira (FGV) and Mr. Rafael dos Santos (FGV) were the two speakers for the third presentation. They presented a research regarding “banking” provisions in carbon markets, focusing on rules for banking of allowances in the Californian Cap-and-trade. The main message brought forward by both researchers was that banking provisions contribute to soften negative economic impacts of carbon pricing instruments. In addition, the possibility of banking between market phases may work as a way to establish a stable price signal at the end of phases.

As last speaker, Mr. Rodrigo Oliveira (Invesciente) presented a tool that allows individuals or organizations to simulate possible impacts of carbon pricing in valuation indicators. The tool, as described by Mr. Oliveira, helps to understand the tangible effects of climate change on companies' financial results, to mitigate potential unrecorded credit risk and to be a simple and easy-to-use tool to support impact analysis.

3rd Session: costs and impacts from MACC and design of emissions trading in Colombia and Mexico

The third Session began with Mr. Torres de Souza (EACH/USP⁴) presentation on Marginal Abatement Cost Curves (MACC) applied at national and regional levels, in which emissions abatement measures are ranked according to their cost (per unit of CO₂e). For the State of São Paulo, after consultations with experts, seventeen abatement measures were considered – all focused on the industrial sector and varying from more efficient motors, to cogeneration, and even carbon capture and storage (CCS). Results from the study show that total emissions to potentially be mitigated between 2014 and 2030 were estimated 78,4 MtCO₂e at an average cost of negative US\$ 29,11/tCO₂e, although results should always and constantly be updated.

The second presentation of this Session addressed the “Design of a roadmap for an Emissions Trading Scheme in Colombia”, object of study under the World Bank’s Partnership for Market

⁴ Escola de Artes, Ciências e Humanidades da Universidade de São Paulo.

Readiness (PMR). In it, Mr. Nieto (Econometria Consultores) and Mr. Lubowski (EDF⁵) laid out the steps of ETS design as applied to the Colombian context, such as scope definition, allowance distribution, and flexibility mechanisms, while taking into consideration the fact that the country does not have a high level of GHG emissions and that they are mostly derived from deforestation, cattle raising and energy use. Colombia already has a carbon tax on liquid fuels and natural gas, that could be used as a price floor (with tax rebates when allowances are bought) or as price ceiling (as a penalty for non-compliance) in the allowance auctions if an ETS is adopted.

Thirdly, Mr. Oronoz (MÉXICO₂) addressed Mexico's experience with a Carbon Market Simulation Exercise. Such a simulation was merited, given that the country will launch a pilot phase of an ETS beginning in 2019. The simulation, conducted by the Mexican Stock Exchange, MÉXICO₂ and the Ministry of Environment and Natural Resources (SEMARNAT), runs through a digital platform, is voluntarily and free of charge to participants. Currently the exercise more than 100 enterprises, accounting for approximately 67% of the country's GHG emissions. Once the simulation started offering prizes in accordance to participants' performance, their behavior noticeably changed and different strategies, for instance with regards to banking allowances, began to be adopted.

Finally, and closing the session, Mr. Lubowski (EDF) talked about how Brazil can reduce its GHG emissions, in a cost-effective way, beyond its international commitments. The speaker proposed that Brazil has a significant comparative advantage to reduce emission in large scale. Through the deployment of a partial equilibrium model, Mr. Lubowski estimated the cost of achieving emissions reductions from avoided deforestation and other sectors. Given the premises adopted, results showed that the banking of emissions reductions is an important measure to achieve a cost-effective path to achieve the country's NDC and, if emissions reductions could be sold internationally, Brazil could cover all costs to fulfill its commitments by selling additional reductions at a price of US\$ 6,50 tCO₂e.

Panel: Partnership for Market Readiness (PMR) Session: PMR Brazil and PMR Argentina

During this session, general information regarding the PMR Brazil Project (context, policy problem and main research questions) were shared by Mr. Alosio Melo from the Ministry of Finance, who coordinates this initiative in Brazil. After Mr. Melo, representatives of each of the three components of the PMR Project shared main results and future milestones.

The PMR Project in Brazil, as was clarified by Mr. Melo, will now enter a phase where interactions with stakeholders will be frequent, in which society will be asked to provide feed-back and to share their knowledge with research groups involved. This will happen as part of the Regulatory Impact Analysis (RIA) that will take place in the second semester of 2018 and will continue until the end of the Project in 2019. An event such as the Latin-American Carbon Pricing Forum helps to bring actors

⁵ Environmental Defense Fund.

closer together and to stimulate rich interactions, which will contribute to the effectiveness of the RIA process, and also of the PMR project as a whole.

As part of this session, Mr. Santiago Afonso, from the Ministry of Finance of Argentina, spoke regarding the PMR initiative in his country. His contribution was meaningful, as it was a first opportunity for researchers from the Brazilian PMR and the general public to hear about the initiative in Argentina, and also to identify synergies and ways to exchange knowledge between both countries.

At the end, Mr. Gustavo Luedemann (GFA Consulting Group) presented briefly the PoMuC Project and its intersections with the PMR Project in Brazil. The PoMuC carries out regulatory impact analysis of the implementation of an information system on greenhouse gas emissions in the Country. Such information systems are essential for carbon pricing mechanisms, since they guarantee the environmental integrity of the instrument.

2nd DAY

June 26th – Panels with experts and decision makers

Panel 1: Carbon Pricing: International overview and Latin America context

The panel, moderated by Mr. Jorge Soto (Braskem), started with Ms. Angela Kallhauge (World Bank) presenting a preview of the “State and Trends of Carbon Pricing 2018”, an annual report by the World Bank Group on the evolution of CPIs globally. In 2017, 51 carbon pricing (CP) initiatives had already been implemented or were scheduled for implementation (25 ETSs and 26 carbon taxes). When the Chinese ETS starts, about 20% of global GHG emissions will be under a CP initiative, with prices ranging from less than US\$ 1/tCO_{2e} (Poland and Ukraine carbon taxes) to almost US\$ 140/tCO_{2e} under the Swedish carbon tax. There is still great potential for further developments, since 88 countries mention the use of CPIs in their NDCs.

Following the presentations on international trends, Ms. Heloisa Schneider (CEPAL⁶) focused on four cases of carbon taxes currently implemented in Latin America: Mexico, Colombia, Chile and Argentina. In common, all four countries implemented their CPIs as part of broader structural (tax) reforms. In the first three countries the tax also had the intended purpose of increasing governments’ revenues while in Argentina the tax substituted previous taxes on fuels. Although international linking between initiatives is a desirable goal, these countries have just experienced these processes of tax reforms and are still evolving in their use of CPIs.

In that spirit of international cooperation to reduce emissions, Mr. Philipp Hauser (Engie) talked about the potential gains stemming from connecting countries’ efforts to tackle climate change, in

⁶ Comisión Económica para América Latina.

particular by approximating developed and developing countries. The speaker remembered the valuable experiences under the Clean Development Mechanism (CDM), but highlighted that the CDM targeted mostly “low-hanging fruits”, efforts that could have been pursued by developing countries themselves. In a post-Paris Agreement scenario, capital could (and should) still flow from developed to developing economies, however, it should be allocated to promote significant changes in infrastructural projects and to the deployment of new technologies.

Panel 2 – Current instruments: lessons learned and opportunities for collaboration

This panel was composed of specialists from the public sector from Latin American countries (Mr. Sebastian Carranza, Ministry of the Environment of Colombia; Ms. Fiona Bello, Ministry of Energy from Chile and Mr. Santiago Afonso, Ministry of Finance of Argentina), as well as from the Environmental Defense Fund (Mr. Ruben Lubowski). Its main objective was to highlight most relevant results and objectives to be achieved by the various carbon pricing initiatives taking place in Latin America, and how these activities can be strengthened by interactions and knowledge exchange.

First, Mr. Carranza highlighted how the PMR Project is being implemented in Colombia. Specially, he described how carbon market instrument can help achieve mitigation in the transport sector, and how tax studies are being carried out. He showed step-by-step guidelines, designed to help Colombia in implementing carbon pricing instruments. Also, he highlighted the need for collaboration between Latin-American countries to strengthen initiatives by solid interactions between initiatives, sharing knowledge and lessons learned.

Second speaker of this session, Ms. Bello made a presentation about the experience of the first year of implementation of the Green Tax in Chile. She shared some of the most important lessons learned after the 1st year implementation, challenges and next steps. With respect to challenges, she highlighted the need for the implementation of a verification process, increase tax rate and expand coverage to other sectors. Finally, Ms. Bello spoke about how the spreading of carbon pricing in the region is an opportunity for collaboration. A good example is the Carbon Pricing of the Americas (CPA) platform, in which Chile is committed to participate actively.

Third speaker, Mr. Santiago shared some of the main results from the Argentinian tax scheme, and some possible ways to expand the mechanism in place. In addition, he exposed the research structures of the PMR Initiatives in Argentina, and possible ways from Latin-American countries involved with the PMR to interact and to strengthen their carbon pricing policies.

As last speaker, Mr. Lubowski described how carbon markets and market linkages can help countries to reach their Paris Agreement goals. For this to happen, according to Mr. Lubowski, markets need to be well designed and it is essential that countries cooperated, if possible in small groups, using common standards and guidelines so to guarantee the environmental integrity of this collaboration.

As an example of cooperation efforts that can form the basis for future market linkages, Mr. Lubowski mentioned the Carbon Pricing of the Americas (CPA) initiative, in which countries and subnational jurisdiction are considering the implementation of carbon pricing instruments as a central economic and environmental policy instrument for ambitious climate change action.

Panel 3 - Sectorial views

Agriculture

Mr. Angelo Gurgel (Getulio Vargas Foundation – FGV) opened the agriculture session exploring the national public policies that dialogue with carbon pricing. The speaker showed the ABC Program and Plan (Low Carbon Agriculture Program and Plan), once they represent the most important policy for the sector in Brazil by focusing on credit for low carbon technologies adoption by farmers. In this way, Mr. Gurgel explored the challenges faced by the Program, for example: lack of technical assistance and rural extension for farmers, uncertainties about economic return and low involvement of the private sector. Moreover, the farmers do not really know the benefits of the Program.

Subsequently, Ms. Betania Vilas Boas (FGVces⁷), talked about the experience of the Brazilian Emissions Trading System Simulation involving the agribusiness sector. Ms. Vilas Boas exposed the initiative's results and studies on regulation point over the agriculture sector. As the agriculture has different and pulverized agents it is easier to cover the agroindustry through carbon pricing mechanisms. Thus, the agribusiness companies participating in the Simulation explored the pathways to cover the emissions from fertilizers (most representative source of emissions), and how these emissions could be cover in a standardized way. This work is inspired by the New Zealand Emissions Trading System.

Finally, Mr. Alastair Handley (president of the Climate Smart Group) highlighted the need of investment from farmers in low carbon technology and questioned if the consumers are willing to pay the extra cost - which may pass through the value chain. He also shared the MRV (Monitoring, Report and Verification) experience of farmers in Canada that adopted a low-cost information system to measure and monitor the emission reduction. This system enabled the generation of offsets credits that were negotiated in Alberta carbon market.

The panel was mediated by Felipe Cunha (CEBDS). The public asked questions exploring the challenging of MRV in the agriculture sector and the costs involved. Another topic of debate was the role of agribusiness stakeholders in a carbon pricing mechanism: regulated agent or offset

⁷ Center for Sustainability Studies at the São Paulo School of Business Administration, Getulio Vargas Foundation.

provider. It was reinforced that the sector has the potential to provide offsets as result of emissions reduction efforts.

Energy and Transportation

Mr. Emilio La Rovere (COPPE/UFRJ⁸) started the panel on energy and transportation, moderated by Mr. Alexandre Medeiros (Cepel⁹), with an introductory presentation on the need for the adoption of CPIs as part of a strategy to reduce GHG emissions in an efficient manner. The speaker alerted that current prices observed on existing initiatives are still low to achieve the Paris Agreement objectives; even with higher prices, complementary policies will be needed, such as efficiency standards and research and development.

Secondly, Mr. Brian Oronoz (MÉXICO₂) gave an overview on how Mexico's introduced a carbon tax and plans to adopt an ETS, including energy related emissions. Transportation and electricity generation account for nearly half of all GHG emissions in the country; with regards to electricity, currently, almost 35% of the supply comes from renewable sources. Although Mexico already has a carbon tax applied on fossil fuels producers and importers, revenues have oscillated throughout the years and revenues cannot be legally targeted towards specific uses.

The panel came to a conclusion with a presentation by Mr. Nicolas Girod (Clear Blue Markets), detailing how energy companies have behaved in the within the Western Climate Initiative¹⁰ ETS. The demand for allowances on the WCI markets come mostly from fuel distributors, natural gas distributors and electricity generators. An initial oversupply of allowances will likely maintain prices low (close to the legally established floor prices) for the next years, a period that can be even longer if Ontario leaves the initiative due to recent political events.

Industry

The session aimed to present and discuss how the industry sector is involved in regulatory and voluntary carbon pricing initiatives, internationally and in Brazil. Ms. Angela Kallhauge (World Bank and Carbon Pricing Leadership Coalition) shared a global view on the theme, Ms. Margarita Pava Medina (Camara de Comercio de Bogotá) reported the initiatives of the sector in Colombia and Mr. Fabio Cirilo (Votorantim Cimentos) presented how the company is advancing the agenda in countries where the carbon is priced through regulatory mechanisms and in Brazil, voluntarily.

⁸ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa em Engenharia da Universidade Federal do Rio de Janeiro.

⁹ Centro de Pesquisas de Energia Elétrica.

¹⁰ <http://www.wci-inc.org/>. Initiative that as of June 2017 included the carbon markets of California (USA), Québec (CA), and Ontario (CA).

After showing how the agenda is advancing quickly in the last years globally with the strong involvement of private sector, Ms. Kallhauge pointed out the key issues that concern the industry:

- Competitiveness and carbon leakage as possible consequence of the carbon pricing mechanisms.
- Distributional impacts over value chains and society as, for instance, higher energy prices for low-income households.
- Alignment of carbon pricing with other sectorial and cross-sectorial policies.
- Productive use of revenues to ease the transition, accelerate technology innovation and deal with potential economic and distributional distortions.
- Linking and networking different carbon pricing systems to enhance cost-effectiveness and promote the exchange of experiences.

A detached message was that besides the public policies, the financial sector is pushing the agenda assessing climate risks of their investment portfolios, adopting internal carbon prices for that. The industry is attentive to this movement and firms are facing and dealing with carbon pricing through the risks and opportunities perspectives. While the risks include higher costs, regulatory burden and lack of public support for the needed transition, the opportunities involve development and strength of low-carbon products, new markets, reduction in energy price volatility and collaboration opportunities.

As the industry assess these and other opportunities, the internal carbon pricing initiatives pop up in the sector: in 2017, 1389 companies were using of an internal carbon price or intended to do so in the following 2 years; 607 were already using internal carbon pricing as an accounting and risk management tool¹¹. Regarding the competitiveness and carbon leakage, two main concerns of the sector, Ms. Kallhauge highlighted that empirical evidences show that leakage is not as large a problem as some claim, but remains real to few vulnerable sectors. Moreover, leakage decreases as the coverage of carbon pricing increases.

From the perspective of the Commerce Chamber of Bogota, Ms. Medina presented the experience of the carbon tax in Colombia. It covers all fossils fuels carbon emissions, considering that 80% converts in tax payment and 20% should be compensated. Considering the total emissions subjected to taxation, state firms are in charge of 70% and wholesale distributors of the other 30%.

The major concrete result of the mechanism, until the moment, was the nine million tones of compensated emissions through forestry projects (60%) commercial reforestation (20%) and hydropower projects (20%). As main messages and lessons learned from the experience so far:

¹¹ CDP, Putting a price on carbon - Integrating climate risk into business, October 2017.

- The industry sector reacted positively to the mechanism, but there is no evidence so far that it influenced the decision-making neither that impacted the firms' production efficiency.
- The income from the tax was mostly invested in environmental subjects through the Colombia Sustainable Fund, what was welcomed by the private sector.
- Access to information and training is crucial for the companies to act and make decisions considering the entire value chain.
- A next step is to foster the market of local projects for compensation in order to contribute to the territories social and economic development.

Mr. Cirilo jumped into the cement industry context: the sector is responsible for 5% of the total global GHG emissions; 90% of its' emissions are Scope 1 (calcination and fuel). Votorantim drew carbon pricing scenarios for all places where the company operates and estimates a global price between 40 and 80 dollars per ton until 2020 and 50 and 100 dollars until 2030.

They are not using other sites as benchmark for stabilising the scenario for Brazil as while in Canada the benchmark is getting more strict, in Spain the company is profiting from the ETS system due the allowance excess – it is because the allocation there was based on the production capacity. In Brazil, Votorantim expects to have carbon priced between 2020 and 2022. They see as very unlikely that the country does not price carbon, as there is a strong international movement.

According to Mr. Cirilo, the cement sector has clear the unavoidable transition and is working on it internationally. The main measures to be implemented in order to reduce 24% of emissions by 2050, considering a production expected goal of 12-23% by the same year, are: thermic efficiency, raw material substitution, clinker substitution and, from 2050 on, carbon capture and storage. In this way, Votorantim's strategy includes to understand the regulatory environment, draw scenarios, adopt internal carbon price, analyse the competitiveness potential impacts and evaluate mitigation technologies and financing possibilities. Based on the Marginal Abatement Cost Curve for the Votorantim's operations in Brazil, the mitigation measures with positive cost will be further studied.

In the final discussion with the participants at the session, the follow topics where raised:

- Part of Brazilian companies involved in the agenda, specially high emitters, are concerned about how the carbon will be priced and who will be involved in the process of drawing the mechanism.
- The sector would like to take part in a gradual carbon pricing process that would consist in a learning process.
- Competitiveness is the most frequent word in the discussion about carbon pricing in industry; in this sense, so far there is no evidence of competitiveness losses in experiences over the world.

- The allowance free allocation in emissions trade system is taken, by Votorantim, as an advantage of this instrument in relation to tax.
- In Brazil there is a simulated emissions trade system running since 2014 with strong participation of large industry companies.
- Regardless the instrument to price carbon, a price sign is important to mobilize investments and direct the technology choices

Forestry

Panelists explored what could be the role of activities that aim at the conservation or increase of forest carbon stocks for the fulfilment of countries mitigation goals and, especially, how these activities can be inserted in possible carbon pricing instruments in Latin America.

Mr. Pedro Soares (Idesam) explain why, in his view, we urgently need to use our forests to generate assets for sustainable development. To do this, we must remove the barriers that prevent private sector engagement and market choices. According to Mr. Soares, without forest pricing mechanisms and REDD+, NDC compliance will be more difficult and much more expensive. He proposed easing of the position of the Brazilian Government to allow alternative sources of funding through REDD +, as well as to allow access to concrete funding opportunities, such as ICAO/CORSIA, among others.

Mr. Ruben Lubowski (EDF) showed that, according to an EDF study from 2017, global carbon markets can enable almost double the emissions reductions at the same cost as current policies, if forestry related activities, such as REDD+, are included.

Finally, MR. Guilherme Lefèvre (FGVces) made a presentation on how the forestry sector (reforestation activities and pulp and paper manufactures) participate in the Emission Trading System Simulation, carried out with a group of Brazilian companies, under coordination of FGV.

Panel 4: Carbon Pricing in Latin America: challenges, solutions and trends

Mr. Osório (FGVces) mediated the event's last panel, summarizing some of the lessons learned, challenges and trends discussed in the two days of Forum. Initially, Mr. de Melo (Ministério da Fazenda do Brasil) highlighted the new outlook provided by the Paris Agreement, that introduced a different mindset for climate policies and a scenario in which countries have the full control of its policies and strategies. Such control over targets, governance and policies is a necessary condition to enable each country to fulfill their commitments. In the case of Brazil, how to achieve the NDC targets in the most cost-effective way is the key topic of discussion under the PMR project. Choosing a CPI is a complicated task that depends on debates with society, something that the country is starting to do.

Then, Mr. Swartz (South Pole) recapped the existing experiences with CPIs in Latin America, with the cases of Colombia – that launched a carbon tax in January 2017 and has an ETS under consideration; Mexico – with a carbon tax since 2013, Clean Energy Certificates market and a scheduled ETS to begin in 2019; and Argentina – that passed a carbon tax in December 2017, covering almost 20% of the countries emissions. Experiences show that there is no “one size fits all approach” to the use of CPIs in the region and that a considerable of learning by doing is to be expected, particularly on topics such as the use of revenues, how to deal with overlapping policies and competitiveness concerns.

Finally, Mr. Hübner (EKLA-KAS¹²) gave an exploratory talk on the possible role to be played by Blockchain technology. Although promising, particularly as a possible way to reduce the costs of establishing GHG emissions registries, preventing double counting of allowances and reducing transaction costs within an ETS, Blockchain also presents challenges, for instance in the apparent lack of a clear governance, associated with a peer-to-peer to technology. Put it simply, there may be opportunities to be explored, but it is also necessary to “beware of the Blockchain hype”.

Main lessons of the Latin America Carbon Pricing Forum

The Forum, throughout its two days of discussions and panels, provided a rich platform for interactions between academia, businesses, NGOs, decision makers and practitioners working on climate change related issues. These rich and fruitful interactions allowed for the emergence of several key messages:

- **Alignment between academic research and business and policy needs.** It is extremely important to create environments in which academic production can reach broader audiences, and through which feedback can flow back to researchers.
- **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 Brazil, Argentina 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 (respectively coordinated by FGVces and MEXICO₂), serve as inspiration and provide additional impetus to further discussions over CPIs in regulatory contexts.
- **Integrated mindset to tackle climate change.** Although sectoral and theme-specific discussions should remain part of any efforts to address climate change, it is important to

¹² Regional Program Energy Security and Climate Change in Latin America of the Konrad Adenauer Foundation.

maintain an integrated and comprehensive approach to achieve mitigation targets in the most cost-effective manner, for the whole of society, through the use of CPIs.

- **Greater regional integration is a definite win.** The mere provision of an environment for regional discussions on CPIs already expands the potential for cooperation between countries. The rich discussions initiated at the Forum should continue into the future, connecting different stakeholders, initiatives, policies and instruments that share a common goal.