MEXICO:

An Market Based Climate Policy Case Study

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Background

Mexico is the world's 10th largest emitter[1] and is expected to be the world's seventh largest economy in 2050[2]. In Mexico, total greenhouse gas (GHG) emissions in 2013, excluding carbon sequestration, were 665 million tCO_2e.[3] The biggest contributors are the transport, electricity generation and industry sectors. A detailed breakdown of 2013 emissions is provided by Figure 1.

In April 2012, Mexico's Congress passed the **General Law on Climate Change Law (GLCC)**, which was signed into law in June of that year. The law sets a target for a 30% reduction in GHG emissions below business as usual (BAU) by 2020, and a 50% reduction below 2000 levels by 2050. While these targets are ambitious, they were set forth in the GLCC as dependent on an influx of international technical and financial support.

The GLCC created the National Climate Change System, composed of the Inter-Ministerial Commission on Climate Change (CICC), a Climate Change Council (C3), the National Institute of Ecology and Climate Change (INECC), Congress, States and Municipalities. The aim of the system is to involve all branches of government and make them responsible for climate change action. The law also provides the institutional framework to develop and implement climate policies.

While the GLCC became law at the conclusion of the previous presidential administration, the current administration (2013-18) has been tasked with implementation. The climate planning instruments, published to date by the administration, include:

1. **The National Climate Change Strategy (ENCC) 10-20-40**, which provides a broad short, medium and long term vision on climate action. The ENCC
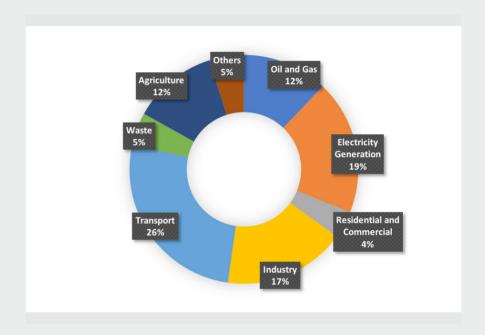

Figure 1: Breakdown of Mexico's GHG emissions by sector
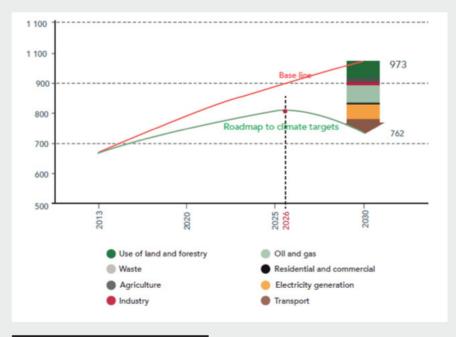

Figure 2: GHG Pathway 2013-2030

Source: Data from the National Institute of Ecology and Climate Change

includes the development of economic instruments as one of the six key pillars to build climate policies; and

2. **The Special Climate Change Program 2014-2018**, which provides a framework that links development and other national priority targets with climate mitigation and adaptation targets through specific strategies and actions from the federal government. The GLCC mandates the next administration to develop an updated Climate Change Program.

Building on the passage of a national climate change law, Mexico was the first developing economy to submit its Intended Nationally Determined Contribution (INDC) to the UNFCCC.

Significantly, this INDC included both non-conditional and conditional GHG mitigation targets, with the conditional target expressing further ambition under certain conditions.

Mexico's Nationally Determined Contribution (NDC) under the Paris Agreement explicitly calls for international, regional or bilateral market-based mechanisms to achieve rapid and cost-effective mitigation. Mexico signed the Paris Agreement in April 2016[4], and the country is now committed to its non-conditional target of 22% GHG emission reduction, compared to BAU, and the conditional target of a 36% reduction by 2030[5] under the NDC. When Mexico's Congress ratified the Paris agreement in September 2016, these targets became binding in addition to those

stated on the GLCC. During 2017, various bills were introduced to amend the climate change law to incorporate this 2030 target and to provide clear authority to develop a mandatory Emissions Trading System (ETS). In December 12, 2017 the lower house of Congress unanimously approved these changes. It is expected the amendments will be approved by the Senate during the first 2018 congressional session.

Summary of key carbon pricing initiatives in Mexico

Carbon tax

In October 2013, as part of the fiscal reform package, President Enrique Peña Nieto put forward plans for a **carbon tax** on fossil fuel production. The initial tax was set at MXN$39.80 (approx. US$3.000 at the time per tCO_2e of fossil fuels, excluding natural gas, and instituting a price cap on some high carbon intensity fuels. All monies collected are directed to the general fund. The fiscal reform legislation also included language for entities subject to the tax to surrender certified emission reductions (CERs) from Mexican projects in lieu of the tax. In November 2013, a voluntary carbon exchange, MÉXICO2, was established to trade carbon credits as a potential means to comply with the carbon tax. Compliance with the new carbon tax law began in January 2014. The rules to use CERs were published

in December 2017, and they permit Mexican-origin CERs to be used to meet 20% of the carbon tax obligation. According to estimates by SEMARNAT (Mexico's Ministry of Environment), the carbon tax has been responsible for an abatement of approximately 1.8 million tCO_2 per year.[6]

International markets

To date, Mexico's international carbon market experience has come primarily via the UN **Clean Development Mechanism (CDM) through which Mexico generated CER credits**. Mexico is currently host to the fifth-highest number of registered CDM projects, and has significant potential to expand its CDM project base. However, since the EU ETS restricted eligible offsets from new projects to just those in Least Developed Countries (LDCs) in 2013, Mexican

CDM projects have struggled to find sufficient demand, selling their CERs primarily in the local voluntary carbon market.

Mexico has also made **progress towards becoming a leader in global supply for jurisdictional Reducing Emissions from Deforestation and Forest Degradation (REDD+) credits**. Since 2010, the federal and state governments have taken action to create incentives and build capacity for forest management, sustainable agricultural practices, and conservation. The National Forest Commission (CONAFOR) is leading the process to develop and implement the National REDD+ Strategy (ENAREDD+). This document has gone through an extensive consultation process and

its final version is pending. The GLCC recognizes state authority to implement state REDD+ programs and several states have also developed their REDD+ vision or strategies in coordination with CONAFOR. The 2010 MOU between Chiapas, Acre and California set up an expert working group to explore the technical challenges for establishing a mechanism for a crediting mechanism between California's carbon market and a jurisdictional (ie, national, state, or provincial) REDD+ program. The most recent development in México has been the start of a pay-for-performance initiative under the Forest Carbon Partnership Facility (FCPF), where the jurisdictional framework for REDD+ is being tested. Mexico is one of the most advanced countries in the FCPF pipeline and is negotiating an Emissions Reduction Purchase Agreement. After the implementation and verification of emissions reductions, the payment for performance will come. This initiative is intended to prepare countries for future participation in compliance markets, such as California's, or through other potential mechanisms like the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) under the International Civil Aviation Organization.

ETS development
The GLCC provides authority to design and promote the establishment and implementation of economic, fiscal, financial and market instruments related to climate change actions. This law, as passed in 2012, enables the Ministry of Environment, with the participation of the CCIC and C3 to establish a voluntary emissions trading system with the objective of promoting emissions reductions at the lowest possible cost. The amendment to the GLCC, approved by the lower house in 2017, provides the authority to the ministry of environment to establish a mandatory ETS. It is expected that the senate will approve this amendment in

early 2018.

Since its passing, the GLCC mandated the creation of the National Emissions Registry (RENE), which is comprised of two main features: an emissions registry requiring mandatory emissions reporting from covered entities. Under the mandatory reporting requirement, established by RENE, beginning in 2015 all entities emitting more than 25,000 tCO_2e/year had to report their emissions of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulphur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrochlorofluorocarbons (HCFCs), nitrogen trifluoride (NF_3) and black carbon for the first time in Mexico. The scope of this inventory extends to emissions from both stationary and mobile sources. Roughly 3,000 facilities from a variety of sectors, including energy, transport, agriculture, services, industry, construction, tourism and government, are subject to annual reporting obligations. Reported emissions will be verified every three years by government-approved third party verifiers. During 2017 entities that reported over 1,000,000 tCO_2e during 2016 had to verify their reports. This self-reporting program will inform the development and implementation of an ETS in the future.

In 2016 the Ministry of Environment signed an MOU with MEXICO2 (a carbon trading platform within the Mexican Stock Exchange) to collaborate on a voluntary carbon trading simulation exercise for companies in the Mexican private sector. In 2017 Environmental Defense Fund partnered with the Ministry and MEXICO2 on this initiative adding their technical expertise and providing their emissions trading simulation tool CarbonSim. The objectives of the ETS simulation exercise are twofold: build further capacity within the Mexican private sector and other key stakeholders on a future ETS and real trading design, and facilitate informed dialogues between regulators, the

private sector, and other stakeholders.

International Cooperation
In 2014, the Mexican Ministry of Environment signed an MOU with the California Environmental Protection Agency and California Air Resources Board, focused on climate change, which included cooperative technical and policy work on MRV and carbon pricing. The two governments released a joint work plan the following year. On 31 August 2016, the federal government also signed cooperative MOUs focused on carbon pricing with California's existing partners, the Canadian provinces of Québec and Ontario, respectively.

The Ministry of Environment first announced in August 2016 its intention to develop a compliance market starting with a pilot phase in 2018. The most recent and high-level announcement came from President Peña Nieto during the One planet summit in December 2017. He stated that a three-year pilot stage will start in 2018. However, SEMARNAT has yet to determine details such as the scope and other features. During the same summit, President Peña announced the Carbon Pricing Declaration of the Americas. This declaration, signed by the the presidents of Canada, Colombia, Costa Rica, Chile, Mexico, the governors of California and Washington, as well as the premiers of Alberta, British Columbia, Nova Scotia, Ontario and Quebec presented a joint vision for regional cooperation on carbon pricing in the Americas and committed to strengthen GHG emissions monitoring, reporting and verification efforts needed for a future linkage of markets in the region.

Carbon Price Evolution

In the absence of an ETS, the only domestic policy tool that currently sends an explicit price signal to the Mexican economy is the carbon tax. As previously mentioned, the initial tax was set at MXN$39.80 (US$3.00 at the time) per tCO_2e of fossil fuels, excluding natural gas. The tax has since been adjusted annually for inflation, its current amount is MXN$43.77 per tCO_2e. The tax rate was capped at 3% of the sales price of fuel, and collected MXN$9.6 billion in 2014 and MXN$7.5 billion in 2015.[7] The table below offers an overview of the tax levels for different fuels.

TAX				
FOSSIL FUEL	Initial Proposal	Final Proposal	Difference (%)	2017
Natural gas	11.94 ¢/m3	0		0
Propane	10.50 ¢/l	5.91 ¢/l	43.7	6.50 ¢/l
Butane	12.86 ¢/l	7.76 ¢/l	39.7	8.42 ¢/l
Gas (Regular & Premium)	16.21 ¢/l	10.38 ¢/l	36	11.41 ¢/l
Jet Fuel	16.21 ¢/l	10.38 ¢/l	36	11.41 ¢/l
Turbosine & other Kerosene	18.71 ¢/l	12.40 ¢/l	33.7	13.64 ¢/l
Diesel	19.17 ¢/l	12.59 ¢/l	34.3	13.84 ¢/l
Fuel Oil (Heavy & Regular 15)	20.74 ¢/l	13.45 ¢/l	35.1	14.78 ¢/l
Oil Coke	MXN$189.85/ton	MXN$15.60/ton	91.8	MXN$17.65/ton
Mineral Carbon	MXN$178.33/ton	MXN$27.54/ton	84.6	MXN$30.28/ton

Commentary on Market Functioning

Looking forward, there are challenges surrounding the future implementation of emissions trading in Mexico. Ensuring quality, verified data in 2017 and establishing a robust baseline that also provides flexibility for future adjustments will be key to a successful pilot program in 2018. Note that in 2017 only emission reports above a million tons were verified. 2020 will be the first year for a full verification cycle for all reporting companies. Other important inputs to ETS policy design, such as public consultations and data-driven examination of market design implications and complementarity or integration with existing policy tools will also contribute to a high-quality policy development process.

In absence of an ETS, it is worth looking at the experience in the voluntary market. Some companies in Mexico, including two of the largest national airlines, Aeromexico and Volaris, have gained valuable experience through the voluntary carbon market. These lessons, for example on greenhouse gas inventories, long-term carbon management strategies and improved sustainability reports, have resulted in capacity building relevant for carbon markets and may facilitate the acceptance of a future ETS.

Policy continuity between the current and future (2018-24) administrations will also be important to expand a pilot phase into a cohesive national ETS that can link with other international markets. So far, political parties as well as likely presidential candidates have been silent on the issue of carbon pricing for the upcoming election.

If Mexico chooses to link with other North American markets, as it has expressed the intention to do, some design choices may be narrowed in order to achieve sufficient harmonization with existing markets. This can be particularly complex as most linkages have occurred between jurisdictions that share common political and economic features (Québec- Ontario-California, EU-Switzerland, Tokyo-Saitama). In order for Mexico to achieve sufficient rigor to link with other North American markets, it must first address gaps in institutional capacity and the quality of emissions data.

What Distinguishes this Policy?

UNIQUE ASPECTS

Point 1

Mexico's **GLCC enables, but does not mandate, the implementation of an ETS**. Mentions of emissions trading as a GHG mitigation tool are in the law, as well as the Ministry of Environments authority to set forth sectoral GHG reduction programs, and the law's emphasis on cost-benefit analysis and economic efficiency of mitigation measures probably favor such systems. This is likely to change in 2018 with the pending decision on the amendments to the GLCC by the senate.

Point 2

Mexico's NDC includes an unconditional commitment to cut GHG emissions to 25% below BAU by 2030, and explicitly mentions the development of international carbon markets as a mechanism to achieve deeper emission reductions.

Point 3

By 2050, Mexico is projected to grow from the world's 11th-largest economy to the seventh. Such growth will require large scale and long-term infrastructural development. The right policy signals, such as a price on carbon, in the short-term could steer the country away from locking in carbon intensive and likely less efficient, infrastructure and towards clean development and efficient technologies.

Point 4

The overhaul of Mexico's federal oil and electricity monopolies through constitutional and secondary law reforms, the implementation of the Clean Energy Certificates market starting in 2018, and the passage and implementation of the Energy Transition Law are significant prospects for making the energy sector cleaner.

Point 5

The passage of the carbon tax and the development of a new domestic offset trading platform on the Mexican stock exchange could serve as potential building blocks for emissions trading in taxed sectors. However, it is still unclear what the scale and rules around the use of offsets under the tax law will be.

Point 6

The yearlong market simulation exercise is a first of its kind initiative to strengthen informed stakeholders' engagement in the policy building process.

CHALLENGES

Point 1

National legislation such as the 2012 General Law on Climate Change, which stipulates absolute emissions reduction targets, is a critical first step to achieving Mexico's ambitious targets, but implementation and enforcement will determine whether such laws are ultimately effective. Increased technical capacity is key to Mexico's development of emissions trading as a robust and effective mitigation tool to achieve Mexico's climate targets.

Point 2

Many of the provisions of the Mexican Energy Reform have only recently been implemented. The extent to which Mexico takes advantage of the intersection between its sweeping energy reform and low-carbon development opportunities, particularly through the development of cap and trade, is not yet clear.

Point 3

While the initial National Strategy on Climate Change provided very general guidance, and the Special Programs on Climate Change provide more specific information and initiatives, the emissions reductions outlined in these policy guidance documents still leave significant gaps to achieve the full 2020 and 2030 targets.

Author Acknowledgements

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