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THE US PARIS AGREEMENT WITHDRAWAL: CONSEQUENCES FOR MEXICO

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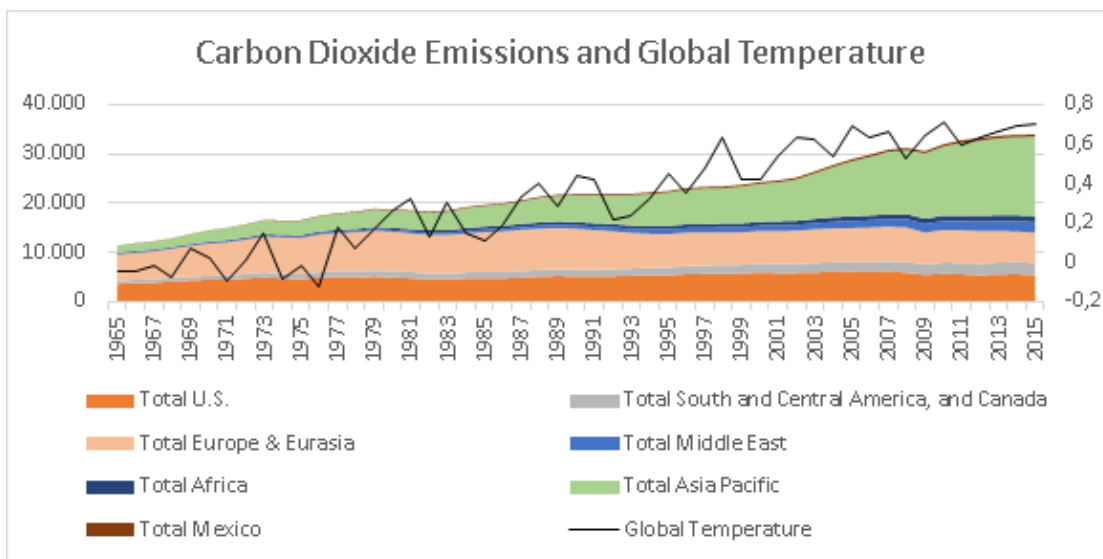
Abstract

Since the mid-nineteenth century - after the Second Industrial Revolution - the temperature has increased by more than one degree. The amount of carbon dioxide emissions into the atmosphere have a strong correlation with rising global temperatures, and as carbon dioxide remains in the air, the impacts will linger long into the future. Regarding the amount of carbon dioxide by region versus the global temperature Mexico is the second largest emitter of Greenhouse Gas (GHG) in Latin America, only behind Brazil. However, Mexico's federal government have realized the climate challenge. With the Country's participation on the Paris Agreement (PA) the Mexican government has set some important goals to achieve the climate challenge. Nevertheless, Mexico's PA commitments are conditioned to global financing and technology transfer, particularly focusing on renewables. Mexico is in need to work consistently with their PA commitments. However, the country's efforts are impacted by implications due to President Trump's announcement to withdraw from PA. These implications can be summarized on the following concepts: Global warming; International cooperation; Economics, Climate finances; and Private sector. This study concludes that the Mexican society must understand the urgent need for climate action, and also must work in partnership with the three government levels, NGOs, private sector and universities in order to create a system to achieve its climate action potential. The Mexican private sector should continue their commitment to collaborate with governments to create public-private partnerships. Mexico should increase leadership in the worldwide climate action to negotiate regional new financial products for clean technologies through innovation.

Overview

Although climate change is a natural phenomenon, between the years 1000 and 1850 the temperature did not vary more than 0.5 degree Celcius (C. Bernstein, & L., Bosch, P. 2007). However, since the mid-nineteenth century - after the Second Industrial Revolution - the temperature has increased by more than one degree. It is estimated that it is inevitable that the Earth will warm up by one and two more degrees by the year 2100 and at the current rate could increase up to five degrees more (The Guardian 2013).

The relation between CO₂ and the Earth's temperature has been studied for many years. In 1895, Arrhenius presented his research to the Stockholm Physical Society entitled, "On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground." The research described radiative effects of carbon dioxide and water vapor on the surface temperature, as well as variations in atmospheric carbon dioxide concentrations (Rodhe, H. & Charlson, R. 1997). According to his work, the amount of carbon dioxide emissions into the atmosphere have a strong correlation with rising global temperatures, and as carbon dioxide remains in the air, the impacts will linger long into the future. The following chart shows the amount of carbon dioxide by region versus the global temperature:



Own elaboration. Excel Area Chart. Source: 2015 Statistical Review of World Energy
 This area charts emphasize the magnitude of change over time to draw the attention to the total value across a trend. Data that represents carbon emission over time are plotted in an area chart to emphasize the total profit. The stacked area chart also shows the relationship of parts to a whole.¹

There is a huge difference between regions such as Asia or the Middle East and South and America Central. Even the US alone contributes in a significant manner in the global emission account, and there is not close comparison with Mexico accounts. Regarding with LATAM, according to the National Greenhouse Gas Inventory (UN 2015), Mexico is the second largest emitter of GHG in Latin America, only behind Brazil. Mexico issues 1.4% of the global emissions of these gases, mainly through transport, industry, the agricultural sector and waste. However, Mexico's federal government have realized the climate challenge.

¹ Statistical Review of World Energy. <http://tools.bp.com/energy-charting-tool>. Accessed on 9/06/2017

Mexico's Concerns about Climate Change

Mexico is increasingly worried about global warming and its impact. In many Mexican cities the public transport is cheap but old and overcrowded. There are cultural factors behind the reluctance to give up the car particularly the in the central region of the country. In 1992, the United Nations confirmed the Mexican capital as the world's most polluted city (AP News Archive 1992) as a result of massive increase in the use of cars and its geographic location. According to the National Institute of Statistics and Geography in the country there are over 38 million registered motor vehicles (INEGI 2016).

In 2013 the Mexican Competitiveness Institute (IMCO) confirmed that more than 1,700 deaths in Mexico were likely related to pollution in one year. As well as 4,200 hospitalizations and 234,000 doctor's appointments. Moreover, the Institute estimated related costs of about 1.3 billion pesos or \$850 million on the economy (IMCO 2013).

However, Mexico's federal government have realized the climate challenge. The Country's participation on the Paris Agreement (PA) represents their keen interest on being an active participant in the development and implementation of international climate agreements. The PA pursues to limit the mean increase in global temperatures to well below 2 degrees Celsius and to follow efforts to limit global mean temperatures to 1.5 degrees. It is a long-term goal to reduce greenhouse gas emissions aiming to reach neutrality in the second half of the century (Rogelj, J., & Den Elzen. 2016).

A significant number of countries have agreed through the PA to limit that warming to well below 2 Celsius degrees above pre-industrial temperatures. The PA includes legally binding obligations for all countries to regularly prepare climate plans called Nationally Determined Contributions (NDCs). The NDCs will be reviewed every five years starting in 2018 to assure progress toward achieving the long-term goals. With an update on 2020, each country that signed the PA must prepare, communicate and maintain its contribution to reducing GHG emissions, and these targets must be progressive. In the case of Mexico, the country has engaged the following PA commitments (Chamber of Deputies 2016):

- *Gas*: Mexico committed to reduce GHG emissions (water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFC) and ozone (O₃) by 2026 by 20%. Also, the country promised to cut black carbon emissions by 51% by 2026.
- *Energy*: The Mexican government promised that in 2024, 35% of the energy generated in the country would be clean, that is, using natural sources such as wind, hydroelectric, solar and geothermal. By 2030, the country pledged 43% of its energy to be clean. In addition, Mexico plans to modernize its power generation plants by 22.5%, reduce technical losses in the electricity grid by 10.5%, and replace heavy fuels with 1% natural gas.

Mexico is in need to work deep with their PA commitments. However, the country's efforts are impacted by implications due to President Trump's announcement to withdraw from PA.

Mexican's Consequences

The US is the world's second-largest climate contaminant country, and its carbon emission reduction would have made up more than a fifth of the PA's goals by 2030 (The Guardian 2017). However, on last June 1st, President Trump announced the start of the four-year exit from the PA. He signed executive orders to undo President Obama's Clean Energy Plan that aimed to decrease emissions from power plants. The program was a central plan for the Obama administration's efforts to meet PA goals reducing its emissions by 26% from 2005 levels by 2025 (Inside Climate News 2017).

The decision of leaving the PA has specific implications in LATAM because of its proximity to the US but it particularly has more implication for the Mexican country. These implications can be summarized on the following concepts: Global warming; International cooperation; Economics, Climate finances; and Private sector.

Global warming: Global warming is a consequence of carbon emissions. According to the World Meteorological Organization (WMO), the period 2011-2016 has been the hottest since it is known (BBC 2016). The geographic location of Mexico places it as a very vulnerable country to the effects of climate change, given its location between two oceans, its latitude, and mountains that expose it to extreme weather events. Mexico is already experiencing serious climate impacts.

Since 2014, droughts have impacted the region due to low rainfall and exacerbated by El Niño. If the US continues with its carbon emissions, the impact may be even greater. The region would be less safe because of the increasing temperatures, it may suffer higher levels of warming, the glacial melts could accelerate, and the sea level could rise and affect coast cities.

This implies environmental damage to the country, such as the fact that Mexico has become warmer since the 1960s; Average national temperatures increased between 0.85 and 1.3 degrees Celsius. It has also reduced the number of cooler days and there are more warm nights, not counting that precipitation has declined in the southeast portion for half a century.

US-Mexico cooperation: The collaboration between the US and Mexico have been recently working well. In 2014, the US launched a Caribbean Energy Security Initiative to funding Caribbean nations decrease their costly imported fossil fuels dependence, and provide assistance to unlock their considerable potential to develop renewable alternatives (The White House 2014). From 2014 to 2015, the Overseas Private Investment Corporation (OPIC) committed over US \$256 million to clean and renewable energy programs in the Caribbean and Central America (OPIC 2017)

In June 2016, the North American Climate, Clean Energy, and Environment Partnership between the U.S., Canada, and Mexico established the goal to achieve 50% clean power generation by 2025 (The White House 2016). However, these cooperation can be at risk because of President Trump's agenda.

Economics: In Mexico, the population employed in the Primary Sector (Agriculture, livestock, forestry, fishing and hunting) reaches six and a half million. This represents 12.6% of the total economically active population (INEGI 2017). Glacial melt in Mexico is likely to affect water supplies with significant consequences for those millions of agriculture dependents and for the provision of electricity from hydropower. More frequent and more intense hurricanes, floods and droughts are only expected to increase. The Economic Commission for Latin America and the Caribbean (ECLAC) proposes that the estimated costs of climate change range from 1.5 to 5% of GDP (Scobie, M., 2016).

Climate finances: The PA express that developed countries should provide financial resources to developing countries to assist them in implementing policies, strategies, plans and measures to address climate change, as well as the energy processes improvement, green projects financing, and the protection of forests and natural reserves. (The Guardian 2015). The PA does not set an amount for such financial resources, but the preamble indicates at least US\$ 100 billion annually by 2020. The withdraw of US from the PA will impact Mexico since it means a significant reduction in the green fund.

On the other hand, the US has foreign aid budget, including funding for climate-related programs to support and manage climate risk and protect lives. Programs and policies are attempting to manage with increased climate-induced migration from Mexico to the US. These fact could be at risk by President Trump agenda.

Private sector implications: Mexico's private sector has an essential role to play in supporting national efforts to achieve emission reduction targets to create a low carbon economy. However, President Trump's anti-climate agenda could discourage the private sector enthusiasm to invest and contribute voluntarily to emission and contribute to emission reduction efforts across the region.



Conclusion and Policy Recommendations

The Mexican government has set some important goals to achieve the climate challenge. However, Mexico's PA commitments are conditioned to global financing and technology transfer, most of all focusing on renewables. Renewables present a significant opportunity for Mexico to accomplish emission reduction goals for the PA. Mexico's potential for cooperation on renewables is considerable so the region should encourage the dialogue and collaboration. Mexican society must understand the urgent need for climate action, and also must work in partnership with the three government levels, NGOs, private sector and universities in order to create a system to achieve its climate action potential.

The Mexican private sector should continue their commitment to collaborate with governments to create public-private partnerships to incentive interest in the construction of clean, innovative and sustainable energy infrastructure. The Mexican government must keep working on its NDCs as well as evaluate their PA goals periodically. Mexico should increase leadership in the worldwide climate action to negotiate regional new financial products for clean technologies, highlighting innovation in transporting solutions, and deforestation. The region should pursue the decision making process into the PA reconfiguration.



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