BARRIERS TO ACHIEVING GREEN GROWTH IN MEXICO: A CASE STUDY IN RENEWABLE ENERGIES

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Since the Rio Declaration in 1992, strategies emphasizing sustainable energy transitions have emerged to combat climate change, poverty and ecological degradation. The high costs and complexity of the structural changes associated with this transition means that developed countries will face particular challenges. matter. Against this backdrop, the 2015 Paris Agreement breakthrough led every party (developed and developing) to design and implement green policies in order to achieve their Nationally Determined Contributions (NDCs). The reason for this is that NDC are set by each country, rather than being imposed by a global agreement.

My research focuses on Mexico's promise and potential to foster meaningful domestic efforts to meet its Paris commitments. In the last three decades, Mexico, the 12th largest CO_2 emitter in the world, put in practice a range of mitigation instruments. The most important example is the Special Climate Change Program 2009-2012, and its following 2014 version. In this four-year plan, the Mexican government identified a clear emissions goal. Specifically, it set to reduce CO_2 emissions by 51 million ton by the end of 2012. At the end of this period, the government informed that they had succeeded in demonstrating that Mexico was capable of: 1) achieving its goals and successfully answering the global need for compromise; 2) taking a step towards a more sustainable economy. However, it also revealed some of the challenges of moving towards a green growth model. Even though the program defined several strategies and targets related to the development and use of renewable energies, these were not achieved. The general CO_2 goal was reached by making extraction mechanisms more efficient, not by introducing cleaner technologies.[1]

Why were the renewable energy projects not accomplished? Clean energies are a clear alternative to the extensive use of fossil fuels and a viable solution to the energy necessity-environmental responsibility dilemma. Still, their development and utilization is slow. What factors are diminishing governmental and social efforts towards energy transition?

Using path dependency theory to explain energy transition difficulties

Path dependency theorists argue that past actions constrain future decision-making. Applied to states the argument is as follows: once governments choose a certain institutional arrangement for a specific public policy area, the policies and instruments

[1] *Informe de avances del programa especial de cambio climático 2009-2012*, Gobierno de la República-Agencia Francesa de Desarrollo (AFD), p. 34. Available in http://www.afd.fr/webdav/shared/PORTAILS/PAYS/MEXIQUE/Documents/PECC_folleto_esp_web_opt.pdf

created by it are going to consolidate and reproduce themselves until they achieve a political lock-in, which guarantees their persistence *versus* any alternative.

The mechanism is not obvious. In order for path dependency to appear and consolidate in a lock-in, several self-reinforcing or positive feedback processes[2] are required. The idea behind this approach is that, once an institutional arrangement is chosen, the ability to transform it for another (even if it is more efficient) becomes increasingly difficult.

Mexico's reliance on fossil fuels exemplifies this. Historically, the country possesses some of the biggest oil deposits in the world. However, in contrast to the United States, this resource is not market owned. Since 1939 and until 2015, the oil market in the country was held by the State, which made the black resource the main driver of the Mexican economy and public finance—almost 60% of the public sector budget comes from the oil industry. The government invested great amounts of public money in developing the oil industry. Even though Mexico possesses a great number of other natural resources, the majority of fiscal revenues and government profits come from the exploitation of this one resource. Since the 1940s, the oil industry became the dominant sector of Mexico's economy.

This dominance crosses from the economic to the cultural. State ownership of oil became an integral part of the social consciousness,[3] which made the institutional arrangement even more difficult to transform. Overcoming this path dependency and carbon-lock has become the main challenge to green growth and energy transition processes in the country.

Identifying barriers… and overcoming them

According to path dependency literature regarding energy systems, some of the main obstacles for change include administrative, fiscal, social, financial, and technological barriers. However, each disrupting activity or project (renewable energy policies in this case) faces different constellations of these barriers or even different types of problems. Case studies throw light over these issues, showing how decision-makers understand and try to overcome these obstacles. With thick descriptions of the context and the

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[2] Paul Pierson, "Increasing returns, Path Dependence, and the Study of Politics", *The American Political Science Review*, 94 (2000), p. 252.

[3] For example, the day oil was expropriated by President Cárdenas—March 18th—is a national holiday in Mexico. This is considered one of his greatest policies, right next to the Agrarian Reform. One of the most popular monuments in Mexico City is the "Fountain of Oil," dedicated to this day. The importance of Cárdenas as a main political figure in Mexico's cultural consciousness can be hardly understated. During the public debates on the Energy Reform of 2014, both sides (government and opposition) used tape recordings, journal entries and public statements of Cárdenas to legitimate their positions in favor or against privatization.

causal mechanisms behind path dependency construction and its reinforcing instruments, qualitative case studies may offer an insider approach to understand these barriers.

Furthermore, understanding the interaction between barriers and disrupting activities may be the clue to overcome the constraints. An analysis on the feedback mechanisms that reinforce the energy establishment which is based on the use of fossil fuels, can help the policy design by helping the elaboration of projects and programs with specific features that allow them to break the carbon lock-in.

It is of great importance to elaborate this kind of case studies. Due to the climate change pressures on every government, scholars need to find prescriptive solutions in their current research. Identifying and finding the roots of each barrier of renewable energy project is crucial to the success of its development.