

The effects of climate and energy policies in the development of renewable energy in the Mexican Power sector

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In the last few years, the generation of electricity power through renewable sources has increased due their environmental and economic benefits. However, both the growth and the diffusion of positive effects depend largely on the specific local, state, and national policy and institutional framework where investments in renewable energy have occurred (Laird & Stefes, 2009). In Mexico, there is a growing interest in the development of renewable energy driven in by both national climate change commitments and the implementation of Power sector reforms (Shah et al., 2016). Therefore, the Mexican case provides a valuable opportunity to examine how climate and energy policies are driving the energy transition.

Power sector transition from fossil fuels to clean energy, especially to renewable energy, is one of main strategies of international policies to mitigate climate change (Giddens, 2011). This is because the Power sector produces the largest emissions of greenhouse gases (GHG) and at the same time, it has the largest opportunities to abate emissions (McKinsey & Company, 2009). In addition, renewable energy provides generate employment, industrial development, and economic growth as well as creating energy security (Brown & Sovacool, 2001; Rorick, 20014).

As a result, in 2013 the renewable share of global electric generation was 22.8%, and renewable energy was already one of the dominant sources of electricity in countries such as Germany and Spain (REN21, 2015). Although the growth of renewable energy is an international trend, previous work has shown that its growth and diffusion as measured by its competitiveness versus traditional energy (fossil fuels and nuclear), type of fastest growing (wind, Solar PV, or bio-power), and growth patterns (centralized vs distributed) is greatly influenced by the policy framework at the national level (Kitsing et al., 2012; Zhao et al., 2016).

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Mexico has a vast potential for renewable energy development, and recently, the climate and energy policies have changed to promote their development. The country has made ambitious international commitments to reduce greenhouse gases (GHG) that will require the decarbonisation of electricity generation (Martínez-Navarro et al., 2014). It is also, in the process of implementing a major reform of the Power sector that allows private investment (SENER, 2015). Also this reform establishes mechanisms to promote renewable energy such as clean energy actions with long-term contracts for general service, and clean energy mandates with tradable certificates (Valenzuela & Studer, 2016).

During this summer I worked for two months with Blanca Torres, PhD who is professor and researcher at “El Colegio de México (COLMEX)” (Mexico City). Mrs. Torres is an expert in international environmental public policy. At COLMEX, I analyzed how the new regulatory and institutional framework is driving the development of renewable energy in the Power sector. Specifically, 1) I reviewed the regulatory and policy framework of Power sector prior the last reform in this sector, and described the state of renewable energy in the country during that period; 2) I reviewed the new regulatory and policy framework of power sector and its implications to renewable energy generation; 3) described the development of climate change policy in Mexico and its relationship to the development of renewable energy; 4) I analyzed the early effects of the new climate and energy policies framework in the growth of renewable energy; and 5) I identified current pathways and trends in the renewable energy regeneration as well as their limitations.

Also I worked for one month with Raul Pacheco Vega, PhD who is professor and researcher at “*Centro de Investigación y Docencia Económica, Región Centro, A.C. (CIDE, A.C.)*” (Aguascalientes). Mr. Pacheco is environmental governance and social conflicts. During the visit, I will review governmental statistics and databases about energy sector, wind farm projects under development, and governmental and private projections for wind energy development in the medium. At CIDE, I reviewed gray literature about merging environmental conflicts related with renewable energy projects.

As a result of this field research, I expect to strengthen my research problem. A better understanding about the nexus between international policy of climate change and national energy transition and well between new energy trends and potential social and environmental impacts can generate inputs to evaluate the effectiveness of this new

framework, and identify some its limitations. These results may be useful for further adjustments to the national policy. Moreover, the Mexican case can provide relevant lessons for other developing countries that faces the challenge of increasing the generation of electricity power while reducing their GHG emissions.

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