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The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle Income Countries of  
South Africa and Mexico

An Honors Project for the Program of Environmental Studies  
By Bridgett Cecilia McCoy

Bowdoin College, 2014

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To my parents and babysitters,  
For teaching me first about the common good

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### List of Abbreviations

ANC:	African National Congress
BUSA:	Business Unity of South Africa
CDM:	Clean Development Mechanism
CICEANA:	El Centro de Información y Comunicación Ambiental de Norteamérica (Environmental Information and Communication Center of North America)
COP:	Conference of Parties (to the Kyoto Protocol)
DA	Democratic Alliance
EMG:	Environmental Monitoring Group
ENCC:	Estrategia Nacional para Cambio Climático (National Strategy for Climate Change)
ETS:	Emissions trading scheme
FMCN:	Fondo Mexicano Para la Conservación de la Naturaleza (Mexican Fund for the Conservation of Nature)
GAP:	(Pew) Global Attitudes Project
GDP:	Gross Domestic Product
GHG:	Greenhouse Gases
G20:	Group of 20
IESPS:	Impuesto Especial Sobre Producción y Servicios (Special Tax on Production and Services)
	INE: Institución Nacional de Ecología (National Institute of Ecology, Mexico)
NERSA:	National Energy Regulator of South Africa
NGO:	Non-governmental organization
OECD:	Organization for Economic Cooperation and Development
PAN:	Partido Acción Nacional (National Action Party)
PECC:	Program Especial para Cambio Climático (Special Program for Climate Change)
Pemex:	Petroleos Mexicanos (national Mexican petroleum company)
PRI:	Partido Revolucionario Institucional (Institutional Revolutionary Party)
SACCI:	South African Chamber of Commerce
SEMARNAT:	Secretaría de Medio Ambiente y Recursos Naturales (Environment Ministry of Mexico)
SENER:	Secretaría de Energía (Energy Ministry of Mexico)
SHCP:	Secretaría de Hacienda y Crédito Público (National Treasury of Mexico)
SRE:	Secretaría de Relaciones Exteriores (Ministry of Foreign Affairs of Mexico)
UNAM:	Universidad Nacional Autónoma de México (National University of Mexico)
UNFCCC:	United Nations Framework Convention on Climate Change
WWF:	World Wildlife Foundation



### **Abstract**

This study provides the first analysis of the politics and ethics behind carbon taxation in South Africa and Mexico. Using the preexisting scholarly frameworks of climate change policy, tax policy, and Robert Putnam's two level games, I determine that in both cases, international pressures from multilateral negotiations and international development funding sources initiated the carbon tax policymaking process within the environment and treasury ministries of both countries. Once environment ministry bureaucrats initiated the carbon tax a lack of politicization of climate change (both countries) and an additional gain of raising revenue (Mexico) allowed the taxes to become law.

I then turn to the laws themselves, analyzing their implications for climate justice. In both cases, the government did not adopt any proposals made interest groups representing environmental concerns and poverty groups, and instead shaped the bills so as to tailor to the interests of heavy manufacturing. This policy decision had the main effect of weakening the climate change mitigation impact of the carbon tax, and exacerbating issues of regressivity by not recycling revenues towards projects aimed at poverty reductions. I conclude this paper with an analysis of the ethics of such a carbon tax in developing countries. The carbon taxes, as they currently exist, sacrifice the rights and needs of the present poor for those of the future generation while an ideal policy that addresses poverty betters the condition of both groups. In order to ensure climate justice and for all groups and prevent political backlash, policy makers in middle-income countries must make carbon reduction policies with the unique challenges of poverty and climate change mitigation in mind.





## **Chapter 1:**

### **Politics or an Insider's Game?**

#### **Introduction**

September 2014, hundreds of thousands of activists, from the US and around the world, converged on New York City. Moments of silence for the victims of climate change were followed by roars of hope. For nearly nine hours, a stream of bodies marched from Central Park to the headquarters of the UN demanding that political leaders listen not only to the science on climate change, but to the real people on the frontline of climate change's negative effects. Events like the People's climate march underscore the importance politics and direct action is believed to have on the outcome of climate change. Visible and passionate as they may be, activists are not the only ones advocating for government leaders to take action. Jim Kim, President of the World Bank, once insisted, "we know that if we don't confront climate change, there will be no hope of ending poverty... the longer we delay in tackling climate change, the higher the cost will be to do the right thing for our planet and for our children."<sup>1</sup> Even though Jim Kim is the leader of the largest and most far-reaching International Developmental Organization, one that is making serious efforts to address climate change in whatever way he can, his power is limited. When taking a realist approach to the issue of climate change, we realize that he is not too different from the 400,000 marchers in the New York City streets. He is most powerful when he can inspire states to take concrete action, and encourage others to follow suit. This task is not as futile as one might imagine. Although there are virtually no mechanisms through which significant action

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<sup>1</sup> "Transcript of World Bank Group President Jim Yong Kim's Speech and Q&a on Climate Change Solution,"

on climate change can be forced onto nations, many governments around the world willingly and unilaterally pass and implement innovative domestic climate change mitigation policies.

Almost paradoxically, one of the more widespread climate-oriented policies is also a policy considered by some to be the most politically challenging, the carbon tax.<sup>2</sup> Even though national carbon taxes are relatively widespread, now on the books in 14 states, excluding Australia which repealed theirs in 2014, scholars have yet to determine how these carbon taxes, considered to be an environmentalist pipe dream in the US, become actual law. Most of the countries that passed carbon taxes would be distinguished as high-income, global north countries, and most of these reside in Europe, with a few developed nation compatriots along the Pacific Rim (Japan, Australia, and Canada's province of British Columbia). Given the Kyoto Protocol's approach favoring shared yet differentiated responsibility—in which developed and developing countries both have a responsibility to address climate change, but most of the burden of mitigation falls on developed countries—and the general weakness of environmental governance in developing countries, it is surprising that the developing, middle-income states of South Africa and Mexico also have carbon tax legislation on the books. Thus I began my research with this question, how, can the governments of South Africa and Mexico unilaterally pass carbon taxes, a climate policy so seemingly progressive and politically impossible?

This task proved to be difficult as there is no existing literature examining the politics of carbon taxes. To overcome this challenge, I situated my research in fields that are

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<sup>2</sup> Kathryn Harrison, "Introduction: Global Commons, Domestic Decisions," in *Global Commons, Domestic Decisions*, ed. Lisa McIntosh Sundstrom (Cambridge, Massachusetts: MIT Press, 2010), 7. In a scale including different domestic policies that could be taken for climate change mitigation, the carbon tax was considered to be the most politically difficult option, beating out public expenditure on international mechanisms and an ETS; "State and Trends of Carbon Pricing," (Washington, DC: World Bank Group, 2014), 15. States that have passed carbon tax legislation include Australia, which has since repealed its carbon tax, and one Canadian province also has a sub-national carbon tax. In comparison, the European Union, five states, and 11 subnational governments have emissions trading scheme legislation on the books.

well established. There is a wealth of scholarship on related issues such as the politics of climate change policies, the politics of taxes, and on the interplay between domestic and international pressures that go into policy making. By weaving together insights from these literatures with empirical data from carbon taxes passed by middle income states, I found evidence that suggested what unique factors enable the expansion of this policy option beyond the developed states of the global North.

### **Climate Change Mitigation Options and Politics**

Initiating a carbon tax, or any climate change-oriented policy, in the absence of binding international agreements is in essence a unilateral action. Developing a strong climate policy domestically may have significant benefits in the long term, such as gains in efficiency and reduced greenhouse gas emissions, but in the short term it may make a country's economy less competitive. Thus, taking on a policy that has the potential to harm the domestic economy for the sake of protecting the global commons does not fall within the expected behavior of rational actors, unless there are significant gains to be made. To overcome such a barrier, impactful climate legislation generally requires other political motives in order to come to pass. In developed countries, distinguished as Annex I in the Kyoto protocol, the impetus for action on climate change thus far has not been defined by strong activism on the part of the voting majority.<sup>3</sup> Rather, domestic action on climate change, like instituting a carbon tax, tends to be initiated by committed politicians and small green parties acting within proportional electoral systems. With climate policy, it is difficult to separate these domestic actions initiated by these actors, from the influence of

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<sup>3</sup> David Held, "Editor's Introduction," in *Climate Governance in the Developing World*, ed. Charles Roger (Cambridge, UK: Polity Press, 2013). 3.

international negotiation. For example, ratification of the Kyoto Protocol is often initiated by international negotiation, but eventually must happen at the domestic level with the help of domestic interest groups. However, not all international negotiations are able to inspire domestic action.<sup>4</sup> Politicians within democracies are likely to be swayed by domestic interest groups, and those in less democratic situations, might be more influenced by the private sector elite and high-level bureaucrats.<sup>5</sup>

Some developing countries, distinguished as non-Annex I countries in the Kyoto Protocol, have defied expectations, and are now “taking actions that are comparable to—or even more ambitious than—almost anything being done in the industrialized world.”<sup>6</sup> South Africa and Mexico have, in particular, taken on some very aggressive commitments towards emissions reductions, and have extensive, if sometimes inconsistent, portfolios of climate change legislation. However, as will be detailed later in the chapters, in neither case was there a strong initiative from voters towards action on climate change. Some interest groups, such as Mexico’s nationalized energy companies, advocated for participation in Kyoto to encourage foreign investing in energy markets through the Clean Development Mechanism (CDM),<sup>7</sup> but in terms of unilateral domestic policies, environment ministry bureaucrats in both countries, scientists and presidents in Mexico, and NGOs in South Africa that made an additional push for action.<sup>8</sup>

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<sup>4</sup> Harrison, "Introduction: Global Commons, Domestic Decisions."5.

<sup>5</sup> Ibid. 9

<sup>6</sup> Held, "Editor's Introduction."

<sup>7</sup> The Clean Development Mechanism is a flexible mechanism of Kyoto Protocol that serves as a vehicle for fostering technology transfer from North to South. It is employed when global North countries (Annex I countries) that are unable to achieve their GHG reductions goals invest in carbon-reduction projects in developing countries (non-Annex I). The averted emissions in the developing countries as a result of the projects are then counted as carbon reductions towards the Annex I country’s GHG reductions.

<sup>8</sup> Simone Pulver, "A Climate Leader? The Politics and Practice of Climate Governance in Mexico," in *Climate Governance in the Developing World*, ed. Charles Rodge David Held, Eva-Maria Nag (Cambridge, UK: Polity

For much of the 20<sup>th</sup> century, the preferred tactic for addressing environmental issues falls under the category of “command and control” legislation.<sup>9</sup> This regulator approach typically mandates the use of certain technologies or sets limits on quantities of pollution. If these rules are not followed, then the government will issue punitive fines or other measures. Command and control is a broad category, but, “the distinguishing feature of command-and-control systems... is that compliance is largely an administrative matter, one for which there could be an administrative adjudication, and sometimes, ensuing litigation over inevitable ambiguities.”<sup>10</sup> Thus, regulated bodies, such as manufacturers, must follow the rules described by agencies or legislation, rather than pursuing their own course of action. The private sector historically has objected to such a technique, arguing that they know best how to make their operations more efficient, certainly better than bureaucrats. Additionally, because of the need for such oversight and constant attention to the best technologies, there are high costs of compliance, such as the aforementioned adjudication and litigation, to the regulators and the regulated.

### ***Emissions Trading Scheme v. Carbon Tax***

Market solutions came into favor for many environmental issues after a long process of trial and error through other types of legislation. Market solutions usually limit pollutants by charging or putting a price on the emission of a certain unit of pollution. As the goal of climate policy is almost always to reduce the emission of greenhouse gasses (GHG), carbon pricing schemes have become a favorite tactic for policymakers and economists to imagine the “fairly radical, economy-wide changes necessary to bring annual emissions levels down,

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Press, 2013). ; Lesley Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa," *ibid.*

<sup>9</sup> Shi-Ling Hsu, *The Case for a Carbon Tax: Getting Past Our Hang-Ups to Effective Climate Policy* (Washington, DC: Island Press, 2011). 19

<sup>10</sup> *Ibid.* 19



and eventually stabilize atmospheric levels.”<sup>11</sup> When monetizing pollution in order to improve environmental outcomes, the government assigns a price or sets a maximum limit to something previously free and unlimited (such as pollution of Sulfur Dioxide, SO<sub>2</sub>).

One such policy option that was initially popular is an emissions trading scheme (ETS), otherwise known as cap and trade. In such schemes, the government issues a limited number of pollution allowances to polluters. If a polluter, say a factory, emitted less than the allotted maximum, they can sell those excess allowances to factories or other entities that emitted more than their limit. In the early 1990s, the US instituted a cap and trade scheme for the reduction of SO<sub>2</sub> that has been celebrated and credited for the significant reductions in SO<sub>2</sub> emissions between 1994 and 2006.<sup>12</sup> To address the issue of climate change, a number of countries and semi-sovereign territories have established ETS marketplaces for CO<sub>2</sub> emissions. The largest such market is the European Union (EU) ETS. Switzerland, Australia, Kazakhstan, and New Zealand also have their own national ETS. There are a number of other ETS within provinces, states, or cities.<sup>13</sup> However, these schemes have many moving parts, and require significant administrative capacity for the government allot appropriate amounts of emissions rights and gather the data necessary to oversee the system.<sup>14</sup> This can prove to be very difficult. Even the EU ETS, allocated about 3% more carbon allowances than were used from 2005-2006 (the first two years of the program).<sup>15</sup> If the governments are unable to accurately set appropriate limits, they face the danger of making the policy impossible to comply with, or weak because the carbon price is too low.

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<sup>11</sup> Shi-Ling Hsu, *The Case for a Carbon Tax: Getting Past Our Hang-Ups to Effective Climate Policy*. 5

<sup>12</sup> *Ibid.* 20.

<sup>13</sup> "State and Trends of Carbon Pricing."

<sup>14</sup> *The Case for a Carbon Tax: Getting Past Our Hang-Ups to Effective Climate Policy*. 21

<sup>15</sup> A. Denny Ellerman, "Over-Allocation or Abatement? A Preliminary Analysis of the Eu-Ets Based on the 2005-06 Emissions Data," *Environmental Resource Economics* 41 (2008).

Carbon taxes, on the other hand, are simply taxes levied based on CO<sub>2</sub> emission intensity. The tax can be levied at a number of points of sale. For example, the taxes can be levied at the “well head” on the producers of hydrocarbon fuels, or they could be placed at the point of final sale to the consumer.<sup>16</sup> Because of their administrative simplicity in comparison the ETS, carbon taxes certainly seem to be much better policy options for states with lower administrative capabilities.

Both ETS and carbon taxes seek to put a price on carbon and require certain conditions in order to maximize their emissions reductions potential:

- Comprehensive coverage of emissions
- Uniform price on all emissions
- Stable and predictable emissions prices
- Emissions prices aligned with environmental damages / climate stabilization goals
- Maximizing fiscal dividend... raising revenues and using those revenues productively
- Carefully designed compensation...for vulnerable households and firms<sup>17</sup>

Despite their similarities, ETS and carbon tax have some key differences. First, the ETS is a quantity instrument, and thus has the advantage of ensuring that emissions will stay at a certain level. The ETS also has political advantages. It pleases environmentalists by setting a firm, and hopefully declining, cap on pollution and it offers industry a new opportunity to make money by selling credits, and allows businesses to avoid government regulation by meeting targets through the ETS market.<sup>18</sup> However, governments have limited ability to control the price within an ETS, which can lead to undervaluation of carbon credits, like in

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<sup>16</sup> Sarah Dowdey, "The Logistics of Carbon Tax," How Stuff Works, <http://science.howstuffworks.com/environmental/green-science/carbon-tax2.htm>.

<sup>17</sup> Ian Perry in "State and Trends of Carbon Pricing." 30

<sup>18</sup> Reuven S. Avi-Yonah, "Combating Global Climate Change: Why a Carbon Tax Is a Better Response to Global Warming Than Cap and Trade," in *Stanford Environmental Law Journal*, ed. David M. Uhlmann (2009). 5.; Jane Andrew, "Carbon Tax: Challenging Neoliberal Solutions to Climate Change," *Critical Perspectives on Accounting* 21 (2010). 614.

the EU ETS.<sup>19</sup> Additionally, there is considerable risk in establishing an ETS because it requires a new, complex, and uncertain governmental infrastructure to manage the new market.

Nonetheless, as compared to ETS, a carbon tax has the benefit for states of setting a fixed price and working within the existing tax institutions of a government.<sup>20</sup> Additionally, states may find that the carbon tax is more flexible in its implementation; it can be set to phase in gradually, and the tax rate can be more easily changed if the price is set too low or too high.<sup>21</sup> Notably for South Africa and Mexico, carbon taxation can still efficiently price carbon in situations of energy monopoly.<sup>22</sup> Proponents of carbon taxes as a climate change policy option also list:

- Economic efficiency
- Flexibility to reduce emissions
- Constant engagement with polluters by putting a price for every unit of carbon emitted
- Widest breadth of polluters, from individuals to heavy industry
- Simplicity in determining carbon content of carbon-based fuels
- Ease with which the carbon tax can be aligned with pre-existing regulatory instruments
- Generation of government revenue
- Few administrative costs to the regulatory body
- Ease of international coordination<sup>23</sup>

As carbon taxes have increased in popularity over the last few years, so has scholarship examining them. Although studies of carbon taxes are quite deep in their

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<sup>19</sup> "Carbon Tax: Challenging Neoliberal Solutions to Climate Change." 612

<sup>20</sup> Ibid. 612.; Hsu, *The Case for a Carbon Tax: Getting Past Our Hang-Ups to Effective Climate Policy*. 85

<sup>21</sup> Avi-Yonah, "Combating Global Climate Change: Why a Carbon Tax Is a Better Response to Global Warming Than Cap and Trade." 7.

<sup>22</sup> Without multiple competing firms, the South African utility provider (and presumably the national Mexican electricity company, until the energy reforms of 2014 fully transform the market) would not trade emissions allowances and would likely pass on all costs to their customers. Jan van Heerden, "Searching for Triple Dividends in South Africa: Fighting Co2 Pollution and Poverty While Promoting Growth," *The Energy Journal* 27, no. 2 (2006); Shantayanan Devarajan, "Tax Policy to Reduce Carbon Emissions in South Africa," in *Policy Research Working Paper 4933*, ed. Delfin S. Go (The World Bank, 2009).

<sup>23</sup> Shi-Ling Hsu, *The Case for a Carbon Tax* (Washington, DC: Island Press, 2011). 27, 77, 65, 27, 90.

consideration of regressivity and effectiveness, there is not much breadth in terms of discipline. Primarily economists, bureaucrats, and legislators actually making the policy, have focused their gaze on the carbon tax. Meanwhile, political scientists, sociologists, ethicists, and others have largely been silent. Scholarship is further limited because the majority of carbon taxes are considered and passed in wealthy “global north” countries, thus, economic studies tend to assume the conditions of such countries, such as a relatively equitable income distribution and virtually no extreme poor (living under \$2.00 a day).

As scholars have pointed out, there are significant drawbacks to the carbon tax. One of the obvious drawbacks is the political difficulty of passing such a measure.<sup>24</sup> Taxes are hard enough to pass, and with an issue as abstract and political as climate change serving as the underlying motivator for the tax, a carbon tax is, understandably a difficult pill for politicians to swallow. Additionally, because energy is so heavily carbon-based in almost every economy of the world, a carbon tax at this point in time is essentially an energy tax. An ETS is placed only on industry, which may or may not chose to pass on their added costs to the consumer. With a carbon tax, in its most popular form, consumers are directly impacted at the point of their energy purchase. Because the poor tend to spend a higher proportion of their income on energy than the wealthy, they would spend a higher proportion of their income on the carbon tax, making it a regressive policy. Table 1.1 lays out all of the aforementioned costs and benefits:

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<sup>24</sup> Avi-Yonah, "Combating Global Climate Change: Why a Carbon Tax Is a Better Response to Global Warming Than Cap and Trade." 7.

ETS	Carbon Tax
<i>Characteristics</i>	
Industries are allotted and allowed to trade the right to pollute	Fixed tax based on carbon content is placed at the point of sale for hydro carbon fuels
Quantity instrument	Price instrument
<i>Positives and Negatives</i>	
+ Sets firm quantity of emissions	- Quantity uncertain
- Price uncertain	+ Price certain
- Requires new government institutions to implement	+ Can work within existing government institutions
+ Politically palatable	- Politically divisive
<i>n</i> Directly impacts biggest polluters (who may pass costs onto consumers)	<i>n</i> Regressive impacts (however, the tax may have a positive effect on the poor if revenues recycled appropriately)
- Difficulty in changing emissions quantity	+ Tax may be changed easily

**Table 1.1:** Comparison of some characteristics of ETS and Carbon tax. Characteristics deemed as positives are denoted with “+,” those deemed as negative are denoted with a “-,” and those with uncertain results are denoted with a “*n*.”

Economists in South Africa have found that a carbon tax, when its revenues are handled in a way that maximizes benefits for the poor, could actually have a positive effect on the climate, economy, and income distribution.<sup>25</sup> Due to similarities in consumer expenditures and results from a study of the ideal level of gasoline taxation in Mexico,<sup>26</sup> evidence suggests that a carbon tax, when revenues are distributed appropriately, would likely also achieve the triple dividend of bettering Mexico’s climate change mitigation, GDP (Gross Domestic Product), and income equality.

<sup>25</sup> van Heerden, "Searching for Triple Dividends in South Africa: Fighting Co2 Pollution and Poverty While Promoting Growth."

<sup>26</sup> Auturo Antón, "Optimal Gasoline Tax in Developing Oil-Producing Countries: The Case of Mexico," *Energy Policy* 67 (2014).

### ***Benefits to Governments in Initiating Carbon Taxes***

Governments can also accrue benefits outside of those felt by the economies over which they preside. Some of the potential benefits are domestic, such as appeasing environmental interest groups and raising revenues. South Africa and Mexico are particularly vulnerable to the social and environmental impact of climate change. Desertification is a serious risk in both countries and sea level rise threatens areas of Mexico like the Yucatan. Having a carbon tax perhaps gives these countries more credibility and pull at climate summits, allowing them to negotiate agreements that will result in minimal environmental, and economic effects for their countries. Further, states may garner reputational gains in the international arena, especially developing countries that could emerge as climate leaders. Passing a carbon tax allows these countries to demonstrate that they are at the “cutting edge” of environmental and climate policy, thus allowing South Africa and Mexico to have an advantage over similar countries, such as Brazil, when vying for limited funds from international banks.

### **Tax Reform Politics**

How, then, do developing countries, like South Africa and Mexico, pass tax law? In developing countries, an effective tax system is often an indicator of state capacity. Not only does it signify that states have the ability to pass fiscal legislation, and then collect taxes from all of their citizens, it demonstrates that government funding is not reliant on natural resources and the private interests that control them. Taxation culture is also important when considering the application of tax policy conceived in one country, and then applied in another. “A simple transfer of tax elements from one country to another will not in most

cases be a sensible solution...common elements of western taxation systems [may] not be feasible options.”<sup>27</sup> As carbon taxes are an import from developed nations, it is reasonable to believe that they should have substantial differences in their effects in South Africa and Mexico than they do in Japan or the UK.

South Africa has the highest percentage of tax collection as a percentage of GDP among middle-income countries, and is particularly successful in raising revenue from progressive types of taxation like corporate taxation and income taxes.<sup>28</sup> This can be explained by a historically cooperative relationship between white elites and the tax system. Under Apartheid Black Africans and South Asians were excluded from social benefits, thus, whites could be ensured that their racial group would benefit almost exclusively from the income raised in these taxes, and the wealthy felt a sense of solidarity towards their poor white compatriots that made progressive taxation politically possible.<sup>29</sup> However, now that the Apartheid government is no longer in power, and the South African government is racially diverse, the incentive of white racial solidarity that propelled the initial implementation of progressive tax structures forward no longer applies. However, The carbon tax is a different kind of tax: it is one on consumer goods. This regressive taxation model more reflects the taxation culture in Latin America.

Middle-income countries in Latin America have lower rate of taxation than all other middle-income countries.<sup>30</sup> This is largely because of the low levels of direct taxation (income and corporate, which tend to be the most progressive forms of taxation.) Rather,

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<sup>27</sup> Birger Nerré, "Tax Culture: A Basic Concept for Tax Politics," *Economic Analysis and Policy* 38, no. 1 (2008). 164

<sup>28</sup>Jonathan Di John, "The Political Economy of Taxation and Tax Reform in Developing Countries," in *Research Paper No. 2006/74* (Helsinki, Finland: United Nations University - World Institute for Development Economics Research, 2006). 9

<sup>29</sup> Ibid.9-10

<sup>30</sup> Ibid.12

taxation in Latin America tends to be reliant on indirect, consumer taxes, which are regressive taxes.<sup>31</sup> In Brazil, which can serve as example for Latin American as a whole, alliances were made along regional groups. Generally, this had the effect of encouraging political polarization and decreasing the opportunities for low-income groups to organize in favor of progressive policies. Because regions are extremely unequal in terms of financial resources, the strong allegiance decision makers had to their regions did not permit the formation of cross-class alliances that encouraged wealthy Brazilians to acquiesce their income to the federal state.<sup>32</sup> Tax reform in Latin America is most likely to come about if specifically required by the IMF, and then by other conditions ranked by likelihood of contribution to tax reform: high inflation, elected somewhat authoritarian governments, established democratic systems with closed list proportional representation, and a non-polarized, multiparty system.<sup>33</sup>

Remarkably, Mexico has an even lower tax burden than Brazil, and has the lowest in the OECD.<sup>34</sup> One of the explanations may be that, Mexico, unlike other middle to high-income countries had, until very recently, a nationalized oil industry. The national oil company, *Petróleos Mexicanos* (Pemex), provided about 30% of the government's annual revenue, thus decreasing the need to for generating revenue through taxation.<sup>35</sup> Additionally, Mexico has extreme regional heterogeneities, not unlike Brazil, so some of the factors that made it impossible for the formation of cross-class racial coalitions, and of coalitions of the poor, may have also been in play.

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<sup>31</sup> Jonathan Di John, "The Political Economy of Taxation and Tax Reform in Developing Countries."12-14

<sup>32</sup> Ibid.11

<sup>33</sup> James E. Mahon, "Causes of Tax Reform in Latin America, 1977-95," *Latin American Research Review* 39, no. 1 (2004).23

<sup>34</sup> "Oecd Environmental Performance Reviews: Mexico 2013," Environmental Country Reviews (2013).

<sup>35</sup> "Giving it Both Barrels: Energy Reform in Mexico," *The Economist*, August 17, 2013, <http://www.economist.com/news/americas/21583664-government-has-made-promising-start-it-may-struggle-bring-historic-reform>



Because a carbon tax is a consumption tax, it fits in with the historical taxation culture of Mexico. However, it marks a break from the Apartheid tradition of direct taxation in South Africa. The introduction of a carbon tax the aftermath may demonstrate strong links between business interests and policymakers, suggesting that taxation culture in South Africa may now be more oriented around class unity and be switching towards a more Latin American approach. Nonetheless, the data only suggests such a switch, and more investigation on taxation culture would be required to make such a claim.

### **Multi-Level Games**

Although tax policy is generally considered a domestic issue, because the carbon tax is at its origins designed to address the global issue of climate change, it is important to understand the interplay between domestic politics and international negotiations that may have led to the policy. The concept of multilevel games explains that when diplomats and heads of states, engage in foreign diplomacy, come to the table with both international diplomacy and domestic political goals in mind. As Robert Putnam articulated it: “at the national level, domestic groups pursue their interests by pressuring governments... and politicians seek power by... consolidating these groups. At the international level, national governments seek to maximize their own ability to satisfy domestic pressures while minimizing the adverse pressures of foreign developments.”<sup>36</sup> Policymakers enacting a carbon tax are certainly playing both the international and domestic game.

When a country that enacts a carbon tax is a developing state, motivations and political opportunity are less clear. Such countries, as previously mentioned, have had

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<sup>36</sup> Robert D. Putnam, "Diplomacy and Domestic Politics: The Logic of Two-Level Games," *International Organization* 42, no. 3 (1988). 434

concerns that climate policies in general would hinder their growth by making the energy needed for industrialization prohibitively expensive. A carbon tax explicitly aims to make energy more expensive, at least those forms of energy that are carbon based. Additionally, in developing countries, especially middle-income countries, inequality is a huge concern. Any policy with regressive impacts, such as a carbon tax, is not only politically hard to pass, but becomes morally questionable.

### **Ethical Questions**

Because climate change abatement raises significant questions of justice and efficacy, especially in relation to differentiating but common responsibilities of developing underdeveloped nations to the persons of the future. Thus, the findings of this paper are critical for the future of carbon taxes, and, more generally, climate policy in the developing world. Those who will suffer the most from climate change are persons who do not yet exist. Thus, every moment of inaction is a disservice to future persons and raises issues of intergenerational justice. Yet, climate policy choices may have differential effects on citizens alive today, with the poor suffering the most from inaction. We must ask ourselves who should bare the burden in the present to ensure the well being of future persons?

Wealthy, highly developed nations historically have been the greatest emitters of carbon, and have contributed the most to the problem because they were able to reach their level of development through the huge quantities of carbon emitted during industrialization. Using this line of reasoning, developing countries often argue that it is their right to emit carbon in order to develop themselves, and that the more highly developed countries have the responsibility of lowering their emissions to address climate change. As time has passed,

the discourse and reality have changed. China, a middle-income country, now emits more carbon each year than any other country in the world. There has been at least a rhetorical recognition by such states, especially Brazil, India, China, and South Africa, that they must also become part of the solution. Indeed, their cooperation is necessary for the success of climate change mitigation. More populous, these countries have the potential to surpass the total emissions contributions of wealthy countries, especially if the leaders of these countries want their people to achieve the same levels of comfort and prosperity as the average European or North American.

Although the process behind making carbon tax policy was not too different from what has happened in more developed countries (mostly initiated by political personalities or technocratic elites) making energy more expensive, which is what any carbon pricing scheme will do in the short run, is much more problematic in the developing world.

### **Preview of Findings:**

In the next two chapters, I investigate the circumstances surrounding the passage of the carbon taxes in South Africa and Mexico respectively. Both are notable in the lack of political conflict surrounding their passage, and the favoring of business interests of over environmental and humanitarian NGO interests.

### ***South Africa***

In South Africa, the process that led to the passage of a carbon tax was very slow and deliberate. The Treasury Ministry first introduced the possibility of a carbon tax in a policy paper published in 2010. Since then, plans and elaborations of that policy paper have appeared and been passed into law through the annual treasury bills. The date of

implementation has been pushed back three times from 2014, to 2015, to 2016. The final bill has yet to be passed (it is planned to be introduced later in 2015). Interest groups were not influential in getting the carbon tax to become policy, but they offered input in the forms of public submissions to the treasury and of lobbying. In the end, NGO concerns about the carbon reducing efficacy of the carbon tax, and the effects of the carbon tax on the poor were not incorporated into the law. Instead, the tax was altered in a way that would protect the interests of large business, particularly heavy industry. South Africa's participation in international climate change negotiations, their role as host for the Conference of Parties (COP) 17 negotiations in Durban, seems to have initiated the ministerial interest in carbon taxes. This interest eventually had enough momentum to bring the carbon tax into law.

### ***Mexico***

Because Mexico's carbon tax was passed as part of a huge treasury reform package initiated by President Enrique Peña Nieto, in the eyes of political opponents and the press, it was considered to not just be a climate change measure, but also a revenue-raising measure as well. As in South Africa, there was little engagement of interest groups advocating for a carbon tax before the proposal was introduced. Unlike South Africa, the carbon tax was introduced (October 2013) only two months before it became law (December 2013). Thus, the amount of influence interest groups had over the final legislation was very limited. However, what is abundantly clear is that all the changes benefit large, energy intensive manufacturers, limit the carbon tax's ability to reduce carbon emissions, and do nothing to help middle class or poor Mexicans.

### ***Questions, Addressed and Linger***

I formed my questions around the previously mentioned fields, asking in each case: to what extent was the carbon tax a climate change or a fiscal measure? and, what kinds of multilevel games, or political gains, were at play? In order to investigate the first question, carbon reducing policy, tax raising policy or both, I looked at the discourse surrounding the carbon tax, mostly as articulated by government officials and the press. Of course, official statements and interpretations of these statements by the press don't tell the whole story. Analysis of the text of the actual carbon tax laws, and the legislative packages that included them provided a more illustrative example. In the South Africa case, the carbon tax seems to have been a purely climate-oriented policy and was not passed with the explicit purpose of raising revenues. In contrast, Mexico's carbon tax most definitely had a dual purpose of strengthening Mexico's climate change policy portfolio, and of raising revenues for the government.

To deconstruct the political pressures, I investigated the public statements and official positions of influential actors such as political parties, bureaucracies, business interest groups, and NGOs. I then investigated the international interests at play, looking at how different waves of climate policy, and the carbon tax timeline, advanced in comparison with the waves of international climate negotiation, and the potential financial gains that could be had through improved access to international development funds. It became clear that bureaucrats and technocrats—with interests in demonstrating to the international community Mexican and South African commitment to climate change—not domestic interest groups, initiated the carbon tax legislative process.

What is perhaps most remarkable, and even most alarming, is the entire lack of politics. Carbon taxes in South Africa and Mexico were not initiated with the roar of civil

action, or hotly publicly debated. Thus, only the most influential interest groups, those representing large businesses, had any say in shaping policy after the bill's initial proposal. NGOs or interest groups representing the poor and disadvantaged either did not participate in the debate, or were disregarded. Because of the asymmetry in impact, the carbon taxes that were passed shelter heavy industry from the main effects of the carbon tax, and leave the average consumer still exposed to the costs. Because carbon taxes are regressive, these findings raise unique ethical questions.

As will be elaborated in my final chapter, most literature on the ethics of climate change takes a panoptic gaze of the problem, emphatically urging action on climate change for the sake of future generations. However, it usually skirts around issues facing the conflict between the present poor and future persons. Economists have demonstrated that in the South African, and likely Mexican contexts, there is a way to ensure a carbon tax yields carbon emissions reductions (addressing the rights of future generations to have a livable climate) and to also use those revenues in order to have a net benefit for the present impoverished. Unfortunately, neither South Africa nor Mexico adopted such a policy route. I close, posing questions about the fairness of sacrificing today's poor, people in these contexts who have been historically oppressed by colonialism and racism, for the benefit of people from all socio-economic strata and of all races.

## Chapter 2:

### South Africa's not so Political Carbon Tax

#### Introduction

Since 2010, the South African government has publicly considered a carbon tax, yet the date of implementation has moved ever farther into the future. South Africa is not an oil-producing state, but it is almost entirely dependent on fossil fuels, particularly on high-carbon coal for its energy consumption (Figure 2.1). South Africa ranks as the 14<sup>th</sup> highest carbon emitter in the world. As the 26<sup>th</sup> largest economy, the South African economy has the 24<sup>th</sup> highest carbon intensity of any in the world.<sup>37</sup> In comparison, Mexico ranks as the 111<sup>th</sup> most carbon intensive out of 202 states, and the US is the 128<sup>th</sup> most carbon intensive economy.<sup>38</sup> This high ranking is largely due to South Africa's consumption of coal. Not only does it supply 72% of the country's energy needs,<sup>39</sup> South Africa also uses 90% of the coal of the entire continent.<sup>40</sup> In 1998, 95% of the energy mix came from fossil fuels, with 70% from coal and 25% from crude oil.<sup>41</sup> Despite South Africa's commitments made at the

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<sup>37</sup>"Each Country's Share of Co2 Emissions," Union of Concerned Scientists, [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/science/each-countrys-share-of-co2.html](http://www.ucsusa.org/global_warming/science_and_impacts/science/each-countrys-share-of-co2.html). ; "Country Comparison:: Gdp (Purchasing Power Parity)," CIA, <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html>. ; "Carbon Intensity Using Market Exchange Rates (Metric Tons of Carbon Dioxide Per Thousand Year 2005 Us Dollars)," ed. U.S. Energy Information Administration, International Energy Statistics (Washington, DC).

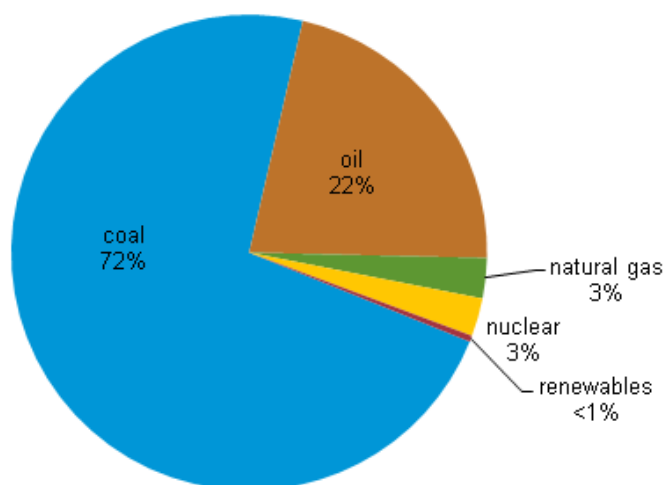
<sup>38</sup> "Carbon Intensity Using Market Exchange Rates (Metric Tons of Carbon Dioxide Per Thousand Year 2005 Us Dollars.)"

<sup>39</sup> "South Africa," Energy Information Agency, [http://www.eia.gov/countries/analysisbriefs/South\\_africa/south\\_africa.pdf](http://www.eia.gov/countries/analysisbriefs/South_africa/south_africa.pdf).

<sup>40</sup> "Africa in 2013," British Petroleum, <http://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-Statistical-Review-of-World-Energy-2014-Africa-insights.pdf>.

<sup>41</sup> Heerden, "Searching for Triple Dividends in South Africa: Fighting Co2 Pollution and Poverty While Promoting Growth."

UNFCCC Conference of Parties in 2009 to reduce its carbon footprint,<sup>42</sup> the economy's dependence on coal for its primary energy source has increased. Thus, it might appear surprising that the South African government would have taken such public, and potentially premature, steps to create a carbon-pricing instrument.



**Figure 2.1:** Total primary energy consumption in South Africa 2012. Excludes biomass.

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Starting with the sub questions articulated in the introduction, is the carbon tax a climate initiative or a revenue raising initiative, and to what extent the policymakers were playing a two-level game, I analyzed the carbon tax legislation itself and all of the accompanying policy proposals, the climate change policy trajectory set by the South African Government, the response of scholars to the political economy of a carbon tax, the framing of the issue by government officials and the press, the role of domestic political

<sup>42</sup> Michael Bamidele Fakoya, "Proposed Tax Policy in South Africa: Learning from the Experience of Other Countries and Effect on Consumer Price Index," *Environmental Economics* 4, no. 4 (2013). The reductions goals are for a 34% reduction by 2020 and a 42% reduction by 2025 against a BAU baseline

<sup>43</sup> "South Africa".





forces, and the influence of international political force over the carbon tax's birth and development. As the evidence will show, the South African National Treasury appears to have passed the carbon tax without any intention for raising revenues. In fact, revenues were only mentioned in the official government discourse to dismiss concerns that the carbon tax was a revenue-raising scheme. The mainstream newspapers never raised the issue. Further, the government plans to ring-fence a good portion of the carbon tax revenues to eliminate the electricity tax. Thus, there seems to be few domestic gains to be made as the carbon tax will not raise revenues, and was not widely requested by civil society before the publication of the Treasury's first official policy paper on the carbon tax. Rather the carbon tax seems to be responding only to the international development and climate games from which government elites, especially in the Environment and Treasury Ministries, face significant pressure.

The first formal action made by the South African government that demonstrated its willingness to institute a carbon tax occurred in 2010 under current president Jacob Zuma. The South African Treasury released a policy paper on carbon taxes. This policy paper first reviewed the effects climate change would have on the South African environment and economy. It then detailed the potential effects on the South African economy, including the distributional effects on the poor population. In this proposal, the treasury examined three forms which the carbon tax could take: a tax levied directly on GHG emissions; a fossil fuel input tax which is a tax on each fuel type, in this case coal, crude oil, and fuel oil, relative to its carbon content; or a tax levied on energy outputs acting as a proxy for carbon emissions.<sup>44</sup> In line with much of the carbon tax literature, the policy paper concluded that

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<sup>44</sup> "Reducing Greenhouse Gas Emissions: The Carbon Tax Option," ed. South Africa Department of National Treasury, Discussion Paper for Public Comment (Pretoria, South Africa 2010). 30-31

carbon pricing is an important part of a climate change policy, a carbon tax is the most appropriate carbon pricing method for South Africa, and that a carbon tax must be developed to minimize the effects on the poor through revenue recycling.<sup>45</sup>

While a carbon tax was not included as part of the budget the following year, public comments on the policy paper were, supposedly, taken into account and synthesized to create the carbon tax that was introduced into the 2012 budget with little fanfare or attention from media. The 2012 carbon tax proposal within the budget was rather vague, and deferred most of the policy details to the publication of a policy paper, scheduled to appear later that year, but was not made public until 2013. The 2013 “Carbon Tax Policy Paper” concluded that while a tax on measured GHG emissions would be ideal in terms of efficiency, it was not administratively feasible.<sup>46</sup> Instead, the government stated that they will use a fossil fuel input tax, in which the Department of the Environment (DEA) will propose the appropriate taxation rates for coal, crude oil, and gasoline based on their carbon content.<sup>47</sup> The proposal left the date for implementation open, suggesting that it would be implemented 2013 or 2014. However, the “Carbon Tax Policy Paper” did set some of the guiding principles that the carbon tax would follow. Because of the concerns that a carbon tax would cripple South Africa’s vital, but energy-intensive industries such as metal production, the 2012 tax was introduced with considerable concessions on companies related to their CO<sub>2</sub> consumption. The proposal laid out the following principles to guide the concessions:

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<sup>45</sup> "Reducing Greenhouse Gasse Emissions: The Carbon Tax Option," ed. National Treasury, Discussion Paper for Public Comment (Pretoria, South Africa2010).

<sup>46</sup> "Carbon Tax Policy Paper: Reducing Greehouse Gas Emissions and Facilitatong the Transition to a Green Economy," ed. South Africa Department of National Treasury, Policy Paper for Public Comment (Pretoria, South Africa2013).

<sup>47</sup> "Updated Carbon Tax Policy Paper: Request for Public Comments," news release, 2013, <http://www.treasury.gov.za/public%20comments/Press%20Release%20-%20Carbon%20Tax%20Policy%20Paper%202013.pdf>.<sup>47</sup>

- Percentage-based rather than absolute emissions thresholds, below which the tax will not be payable
- A higher tax-free threshold for process emissions,<sup>48</sup> with consideration given to the limitations of the cement, iron and steel, aluminum and glass sectors to mitigate emissions over the near term;
- Additional relief for trade-exposed sectors;
- The use of offsets by companies to reduce their carbon tax liability;
- Phased implementation.<sup>49</sup>

Even in the 2012 budget proposal, the treasury established guidelines on carbon tax relief for the first five-year period, including the 60% tax-free allowance for companies and additional 10% allowances if a company were particularly vulnerable to the pressures of international trade or also creates “process emissions” that result from the manufacture of goods such as cement or steel (table 2.1). Below is a table from the South African Treasury identifying the tax-free thresholds available to different sectors during the first six-year phase of the carbon tax.

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<sup>48</sup> “By-product or fugitive emissions of greenhouse gases from industrial processes. Emissions from fuel combustion in industry are included under Fuel Combustion; “Defiitions,” United Nations Framework Convention on Climate Change, [http://unfccc.int/ghg\\_data/online\\_help/definitions/items/3817.php](http://unfccc.int/ghg_data/online_help/definitions/items/3817.php).

<sup>49</sup> “Revenue Trends and Tax Proposals,” ed. National Treasury, 2012 Budget Review (Pretoria, South Africa2012). 56

**Table C.13 Proposed emissions thresholds for sectors**

<b>Sector</b>	<b>Basic tax free threshold (%) below which no carbon tax will be payable during the first phase (2013 to 2019)</b>	<b>Maximum Additional allowance trade exposure</b>	<b>Additional allowance for "process" emissions</b>	<b>Total</b>	<b>Maximum offset percentage</b>
Electricity	60%	-	-	60%	10%
Petroleum (coal to liquid)	60%	10%	-	70%	10%
Petroleum – oil refinery	60%	10%	-	70%	10%
Iron and steel	60%	10%	10%	80%	5%
Aluminium	60%	10%	10%	80%	5%
Cement	60%	10%	10%	80%	5%
Glass & ceramics	60%	10%	10%	80%	5%
Chemicals	60%	10%	10%	80%	5%
Pulp & paper	60%	10%	-	70%	10%
Sugar	60%	10%	-	70%	10%
Agriculture, forestry and land use	60%	-	40%	100%	-
Waste	60%	-	40%	100%	-
Fugitive emissions: coal	60%	10%	10%	80%	5%
Other	60%	10%	-	70%	10%

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**Table 2.1:** South African carbon tax exemptions by industry

Another way the South African carbon tax is designed to ease carbon pricing into the economy is by the establishment of a phased approach to implementation. The first five-year phase, now from 2016 to 2021 per the 2014 carbon tax proposal in the 2014 budget, will include all of the aforementioned exemptions. The tax rate is intended to start at 120R (\$10.43 USD) per ton of CO<sub>2</sub> and increase by 10% each year until the next five year phase (2021-2026) when the treasury will re-asses the rates and exemptions.<sup>51</sup> In the most recent updates, the government explores the possibility of having companies pay at least part of their burden through the purchase of offset credits, however this suggestion will not be formalized until the final bill scheduled to pass in 2015.

<sup>50</sup> "Direct Tax Proposals," ed. National Treasury, 2012 Budget Review (Pretoria, South Africa 2012). 186

<sup>51</sup> "How the Proposed Carbon Tax Policy Affect Your Business," The Carbon Report, <http://www.thecarbonreport.co.za/the-proposed-south-african-carbon-tax/>.

The date for implementation of the carbon tax has been pushed back, first to 2015 in the 2013 National Budget, then to 2016 in the 2014 budget. The then treasurer has asserted that the Treasury chose to postpone implementation in order to better align the carbon tax with existing environmental and energy policy.

### **Climate Change Policy Trajectory**

Environmental policy, like many things in South Africa, has a complicated history. After the end of Apartheid in 1994, the government switched focus from wilderness conservation, which had resulted in the displacement of indigenous blacks, to improving urban environments and addressing the unequal distribution of the negative externalities. However, because of the legacy of Apartheid environmental policies, which favored conservation and low air pollution for white settlements by displacing black communities and putting unfair environmental burdens on townships, poor groups, especially blacks, tend to be skeptical of government-lead environmental initiatives. By and large, they consider abstract environmental issues such as conservation and climate change the “preserve of the white elite,” and “a priority that was ultimately a threat to economic growth, social stability, and poverty alleviation.”<sup>52</sup> Nonetheless, in the past decade, the government’s environmental policy focus has expanded to address the issues of climate change.<sup>53</sup> This is perhaps for good reason. South Africa, like much of Sub-Saharan Africa, is particularly vulnerable to climate change, especially drought. Other characteristics such as low resilience due to poverty, high

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<sup>52</sup> Zarina Patel, "South Africa's Three Waves of Environmental Policy: (Mis)Aligning the Goals of Sustainable Development, Environmental Justice, and Climate Change " *Geography Compass* 8, no. 3 (2014). 171; Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa."; Peter Lund-Thomsen, "Corporate Accountability in South Africa: The Role of Community Mobilizing in Environmental Governance," *International Affairs (Royal Institute of International Affairs 1944-)* 81, no. 3 (2005).624-625

<sup>53</sup> Patel, "South Africa's Three Waves of Environmental Policy: (Mis)Aligning the Goals of Sustainable Development, Environmental Justice, and Climate Change ". 171

disease burden, poor housing structure, low naturally low and variable rainfall, already existing pressure on surface water resources, and reliance on agriculture and fisheries, make climate change particularly catastrophic for South Africa.<sup>54</sup> Commercial agriculture, especially for cereals and grains, will likely suffer, increasing food prices, and subsistence farmers with little access to irrigation will face even more pressure.<sup>55</sup> Further, due to the effects of climate change on the rest of sub-Saharan Africa, which has arguably worse capacity to handle climate stress, addressing climate change may be in South Africa's interest for the sake of regional stability.

Because the tax does not appear to be a revenue-raising scheme, it more likely falls within the climate change policy narrative South Africa has been constructing over the past decade. Climate policy in South Africa appears to have come in waves initiated by international negotiations.<sup>56</sup> Domestic responses to international pressure have been initiated by different departments in a somewhat hap-hazard way, creating many of the lofty goals and some of the more conservative initiatives, but little coordinated action.<sup>57</sup>

South Africa was slow to take up the issue of climate change before the new millennium.<sup>58</sup> It was not until 2004 that the Department of Environment and Tourism, now simply the Department of Environment (DEA), created an initial climate response paper. Working with a coalition of varied stakeholders, this initial outline to the government's strategy placed the DEA at the head of the leadership on climate change, but created plans for many other segments of the government to be involved, including legislative agendas

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<sup>54</sup> "Effects of Climate Change on South Africa," COP17/CMP7, <http://www.cop17-cmp7durban.com/en/south-africa-on-climate-change/effects-of-climate-change-on-south-africa.html>.

<sup>55</sup> Jenny Griffin, "Impact of Climate Change on South Africa," Climate Emergency Institute, [http://www.climateemergencyinstitute.com/cc\\_s\\_africa\\_griffin.html](http://www.climateemergencyinstitute.com/cc_s_africa_griffin.html).

<sup>56</sup> Patel, "South Africa's Three Waves of Environmental Policy: (Mis)Aligning the Goals of Sustainable Development, Environmental Justice, and Climate Change ". 170

<sup>57</sup> Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa."

<sup>58</sup> Ibid.

and institutional arrangements such as the White Paper and various renewable energy incentives.<sup>59</sup>

International treaties and negotiations, not domestic political personalities, however, seem to have had the most significant role in pulling climate policy into the national agenda.<sup>60</sup> To the credit of the South African government, the cabinet commissioned the DEA to create a Long Term Mitigation Strategy (2007) which estimated that “business as usual” growth, is likely to lead to a quadrupling of carbon emissions by 2050.<sup>61</sup> In response to these findings, in July 2008, only months before president Mbeke resigned in disgrace, the government announced a “peak, plateau, and decline trajectory” plan for greenhouse gas emissions, committing to 2020-2025 as the range of dates when carbon emissions should peak, followed by 10 or so years of plateau in emissions, and then ultimate decline.<sup>62</sup> South African delegates elaborated on the previous commitment at the Copenhagen COP-17 rounds of negotiations in 2009. South Africa committed to an ambitious 34% reductions in greenhouse gasses in comparison with a business as usual scenario by 2020, then 42% reductions by 2025.

In 2009, the government called for a national conference of key stakeholders to create a plan that would address how South Africa could fulfill its commitments. Although the summit resulted in increased dialogue, the resulting paper proved to be insufficient to meet the standards of domestic and international interest groups.<sup>63</sup> Thus, the DEA released a

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<sup>59</sup> Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa." 262.

<sup>60</sup> Patel, "South Africa's Three Waves of Environmental Policy: (Mis)Aligning the Goals of Sustainable Development, Environmental Justice, and Climate Change ". 170

<sup>61</sup> Ahaun Vorster, "Mitigating Climate Change through Carbon Pricing: An Emerging Policy Debate in South Africa," *Climate and Development* 3 (2011). 243

<sup>62</sup> Ibid. 244

<sup>63</sup> Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa." 264



White Paper on climate change, just in time for the 2011 conference of parties in Durban, South Africa.

The impetus for starting a carbon tax was rooted in the recommendations made in the 2011 Long Term Mitigation Strategy, reflecting what might happen if future international negotiations force South Africa to take on binding reductions targets.<sup>64</sup> Of all the options to prepare the way for low-carbon development, the carbon tax, according to an interview with the director of the University of Cape Town Energy Research Center, was an attractive option because its affects on GDP and the poor could be easily managed through revenue recycling, giving back the revenues to tax payers in targeted tax breaks or government programs.<sup>65</sup> Thus, the treasury used the recommendations as a foundation, with the hope that it could help inspire collective action. Within the South African government “there is an appreciation that [their] actions on climate change are not a burden, but are fundamentally in South Africa’s own national interest. If [they] don’t act, [they] will struggle to convince others like Australia and the US to do so.”<sup>66</sup>

### **Political-Economy of a South African Carbon Tax**

By releasing a policy paper two years before the carbon tax was committed to law, the South African government gave scholars ample time to respond to its announcement. However, scholarly discourse on a possible carbon tax had been prevalent in South Africa long before the government made any formal nod to a carbon tax. The recommendations and observations made by scholars in their publications were instrumental in crafting the

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<sup>64</sup> Erwin Jackson, "A Carbon Tax in Africa--without the Politics," interview, *Opinion* (2012), <http://www.climateinstitute.org.au/articles/opinion-pieces/a-carbon-tax-in-south-africa-without-the-politics.html>.

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

legislation and informing the dissent of interest groups. Scholarship on this issue was not only been important for the development of academic discourse on carbon taxes, but also for the shaping of the political context of carbon tax policy in South Africa.

### ***Equity and Regressivity Concerns***

Jan van Heerden and other scholars at Pretoria University published one of the first papers on the possibility of a carbon tax in South Africa in 2006. In his analysis, he found that a carbon tax, if revenues were appropriately recycled, could achieve what he called a “triple dividend,” a decrease in carbon emissions, an increase in GDP, and a decrease in poverty.<sup>67</sup> Direct income tax breaks achieved the first two goals with a decrease in emissions and an increase in GDP, but not a decrease in poverty. The best option to achieve the triple dividend was using the revenues from the carbon tax to reduce the food tax, which is even more regressive than a carbon tax.

Although a carbon tax could be regressive, in the monopolistic energy market, it is preferable to an ETS. Other scholarship prior to the publication of the 2010 Policy Paper included current chief economist for Africa, Shantayanan Devarajan’s 2009 article on the alternatives to a carbon tax.<sup>68</sup> While Devarajan found that the carbon tax could have serious implications on the unskilled labor market, he also found that carbon taxes, rather than emissions trading schemes or proxies through energy taxes, were the most efficient way to curb emissions given the monopolistic characteristics of the energy industry. In order to mitigate the negative effects of the carbon tax, Devarajan echoed van Heerden’s emphasis that welfare consequences of the carbon tax are highly dependent on how the revenue is recycled.

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<sup>67</sup> van Heerden, "Searching for Triple Dividends in South Africa: Fighting Co2 Pollution and Poverty While Promoting Growth."

<sup>68</sup> Devarajan, "Tax Policy to Reduce Carbon Emissions in South Africa."

### *Political Concerns*

After the carbon tax was officially made policy, there was an outburst of publication. In this period, scholars, mostly economists, began to raise concerns about the distributional issues of the government's policy proposal, its political roots, and its future political implications. Thembanani Mbandlayana explored the political motivations behind the carbon tax, highlighting the international pressures on South Africa as a leading middle-income country and a member of the BRICS group to reduce their emissions and set an example for other developing nations.<sup>69</sup> This, tied in with the understanding that climate change posed a serious threat for their achievement of the millennium goals, painted the picture that the carbon tax, and climate policy in general in South Africa, was very top-down driven. Mbandlayana then looked at the domestic distributional effects, moving beyond the sheer numbers about the regressivity of the tax, but to bring in issues of history. Both Mbandlayana and Lesley Masters (2013) discussed how during Apartheid, electricity infrastructure directly bypassed poor, black communities, creating great energy inequality between urban whites and poor blacks.<sup>70</sup> A carbon tax that does not address the distributional concerns thus unleashes more than the ethical concerns of exacerbating inequality. It also has strong historical and cultural implications.

Theresa Alton also looked at the international interests that the government faced to institute a carbon tax. As previously mentioned, South Africa has a vested interest in international action on climate change because of its environmental vulnerability to desertification. Because South Africa's economy is heavily dependent on exports, there is a fear the countries they export to would impose carbon content related tariffs, which would

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<sup>69</sup> Thembanani Mbandlanyana, "The Political Economy of Carbon Tax in South Africa," *Africa Insight* 43, no. 1 (2013).

<sup>70</sup> Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa."

make South Africa relatively uncompetitive due to the high carbon intensity of South African energy. Thus, she concludes, the carbon tax is an important step towards protecting competitiveness, and should slowly phase in with a rate that increases over the course of a decade.<sup>71</sup>

Finally, Michael Bamidele Fakoya in his articles published in 2013 and 2014 very strongly denounced the regressivity of the carbon tax, this time from the perspective of the domestic political effects of the disproportionate burden of the tax on the poor.<sup>72</sup> First, he pointed out that the carbon tax, could lead to political riots due to the high price of energy. Additionally, with so many people dependent on government grants, he argued that any attempt to redistribute the funds to the poor would be likely to be rife with corruption and only exacerbate the problem. Fakoya is the only author that articulates the primary motivation of the carbon tax as a revenue-raising scheme, and not a greenhouse gas emissions reductions policy, concluding with the negative assertion that the positives of the carbon tax are only possible, while the negative outcomes are certain.

The scholarship on the carbon tax in South Africa is diverse, and it is clear that the impact of scholarship on the local policy decisions are complicated. However, issues of distribution and income inequality have always been part of the conversation. Some authors emphasized negative impacts on industry while others looked at direct negative impacts on the poor. Despite these differences it is clear that the carbon tax's implementation looms

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<sup>71</sup> Teresa Alton, "The Economic Implications of Introducing Carbon Taxes in South Africa," in *Working Paper No. 2012/46*, ed. Channing Andt (United Nations University, World Institute for Development Economics Research, 2012). Theresa Alton, "Introducing Carbon Taxes in South Africa," *Applied Energy* 116 (2013).

<sup>72</sup> Fakoya, "Proposed Tax Policy in South Africa: Learning from the Experience of Other Countries and Effect on Consumer Price Index." "Carbon Tax Policy Implications for Economic Growth and Unemployment Rates in South Africa a Conceptual Thought," *Environmental Economics* 5, no. 3 (2014).

closer, the scholarship has grown more wary of a carbon tax and its impact on the South African economic structure.

### **Framing**

How the carbon tax was framed by government institutions and then perceived by the media or public has very important implications for what intentions the government is willing to display and what intentions people seem to think the government displays when it comes to the carbon tax, and why the tax was politically feasible. Based on media reports and outward communications, it seems that revenue generation was not the primary motivation for the carbon tax, and that it was a purely climate-focused policy. While public opinion is hard to measure, it appears that at least the most powerful citizens are in favor of action on climate change, but were not aggressively advocating for its passage.

### ***Public Opinion***

According to the Pew Global Attitudes Project (GAP), 48% of South Africans consider climate change to be a greater global threat than any other issue. Their level of concern is below the regional average of 54% believing that climate change is a major global threat. Nonetheless, Sub Saharan Africa is a very large region with extreme heterogeneities. There are countries, like Uganda, where the Pew GAP found the rate of climate change concern to be 66%, and Kenya where 57% believe climate change is a serious threat. There are many other countries where the citizenry is more concerned about the global threats of Islamic extremists (no doubt influenced by the threats from local violent jihadists) such as Nigeria, where 57% were concerned about Islamic extremism, compared

to 41% concerned about global climate change, and Senegal, where 67% cited Islamic extremism as a threat, and 58% cited climate change.

Indeed, based on the Pew studies, Africans outside of South Africa are in general, more concerned about global threats than South Africans. The top three threats for South Africans, climate change, 48%, China's power and influence, 40%, and international financial instability, 34%, are far lower rates of concern than the other top three concerns for Ghana, Kenya, Nigeria, Senegal and Uganda.<sup>73</sup> Still, relative to the other rates of concern, it appears that South Africans do prioritize the threat that climate change poses, and would find government action on climate change permissible.

This is consistent with the content of the public comments made in reaction to the 2013 Carbon Tax Policy Paper. More than 50% of respondents agreed that policy action on climate change is appropriate, and 94% were sympathetic with the aims of the carbon tax to price the negative externalities of carbon emissions.<sup>74</sup> Of course, the conclusions one can make from these statistics are limited, as the respondents are a very selective group of South Africans who had the time and resources to read a government document on the abstract idea of carbon taxation and then make online comments about the proposal.

Local opinion studies take a more nuanced approach to the issue and show awareness of climate change to be much lower than the Pew GAP studies suggest. One

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<sup>73</sup> "Climate Change and Financial Instability Are Seen as Top Global Threats," Pew Research Global Attitudes Project, <http://www.pewglobal.org/2013/06/24/climate-change-and-financial-instability-seen-as-top-global-threats/>.

<sup>74</sup> "Revenue Trends and Tax Proposals," ed. South Africa Department of the National Treasury, Budget 2014 (Pretoria, South Africa 2014).56

study found that 40% of people from all age groups had either never heard of climate change, or knew very little about it.<sup>75</sup>

While those who are aware of the issue may feel strongly about climate change, it is hard to imagine that there are many such people outside the urban elite in South Africa who have access to resources informing them on the threats of climate change, especially the threats specific to South Africa. South African opinion on climate change or a carbon tax is probably hard to predict because the country is so heterogeneous. However, if the strong opinions about climate change are concentrated to the urban elites, in a real politic scenario, their opinions probably matter more to policy makers than the rural poor. According to the data presented by various sources, it seems that these elites would permit action, making them perhaps not advocates for a carbon tax, but certainly not opponents.

### *Newspapers*

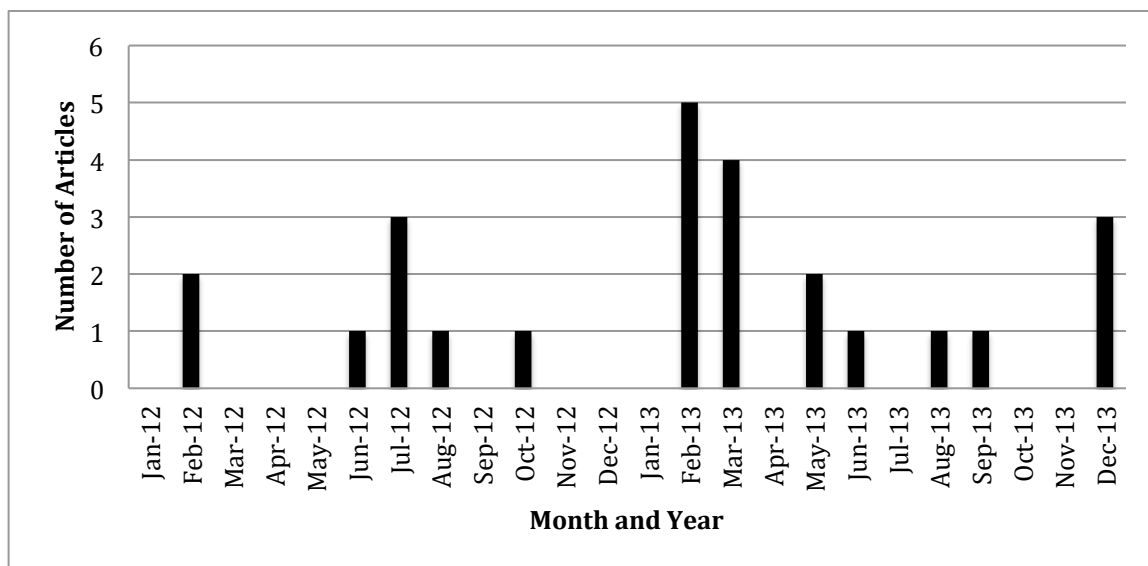
A review of two of the major newspapers in South Africa further supports the hypothesis that the carbon tax is an explicitly environmental and not necessarily revenue raising policy initiative. The two newspapers I surveyed for any articles mentioning carbon taxation were two of the most popular English language newspapers in South Africa: *The City Press*, aimed at an English-speaking black audience with over 1.76 million readers; and *The Times*, the weekday counterpart of *The Sunday Times*, the most widely read Sunday Paper in South Africa with over 3.4 million readers. Amazingly, over the course of two

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<sup>75</sup> John Seager, "Blowing Hot or Cold? South African Attitudes to Climate Change," (Pretoria South Africa: Human Sciences Research Council, 2008).

years, there were only 25 articles that mentioned “carbon tax,” including discussions about carbon taxes in other countries.<sup>76</sup>

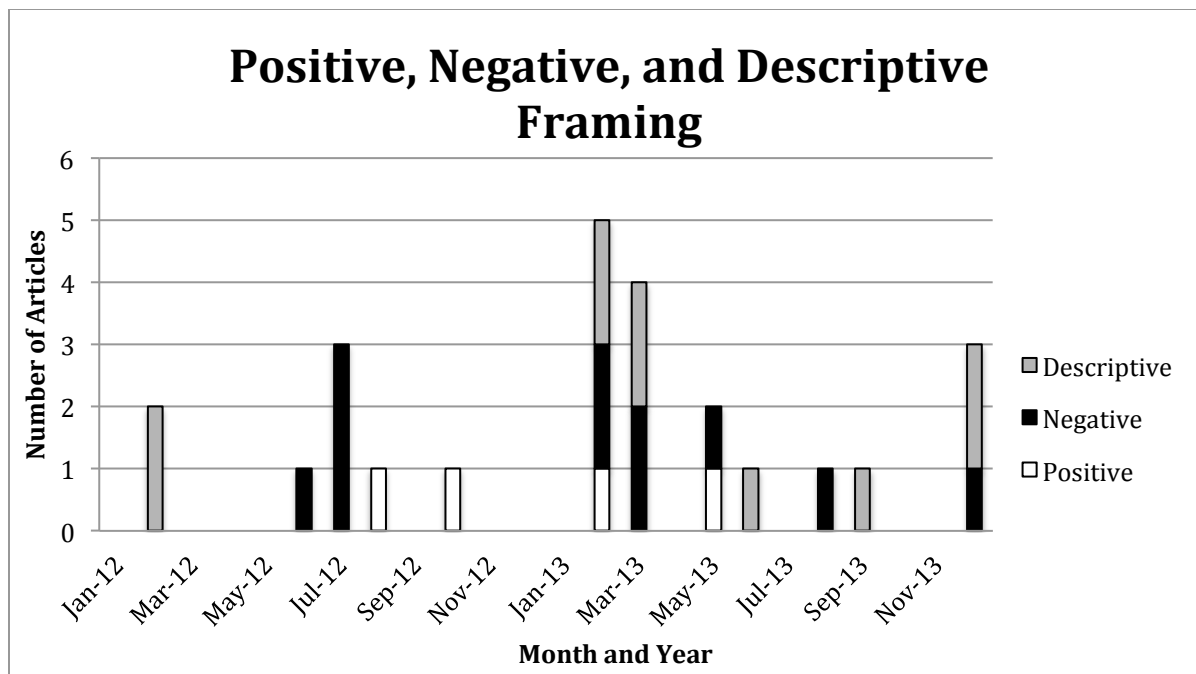
The carbon tax was not a frequent topic of discussion from January 2012 through the end of 2013,<sup>77</sup> but when it was mentioned, it was frequently painted in a negative light as the source of increases in electricity and fuel costs for average customers. There were never objections to the government taking action on climate change, or rejections of the science of climate change. Instead, in negative framing circumstances, either climate change was never mentioned, or the article downplayed the climate mitigation impact of a carbon tax or responsibility of South Africa to lead on climate issues. If any justification was given for the carbon tax, it was always that the carbon tax was a climate initiative (figure 2.4). Not once did these papers mention the potential of the tax to raise revenues for the government.



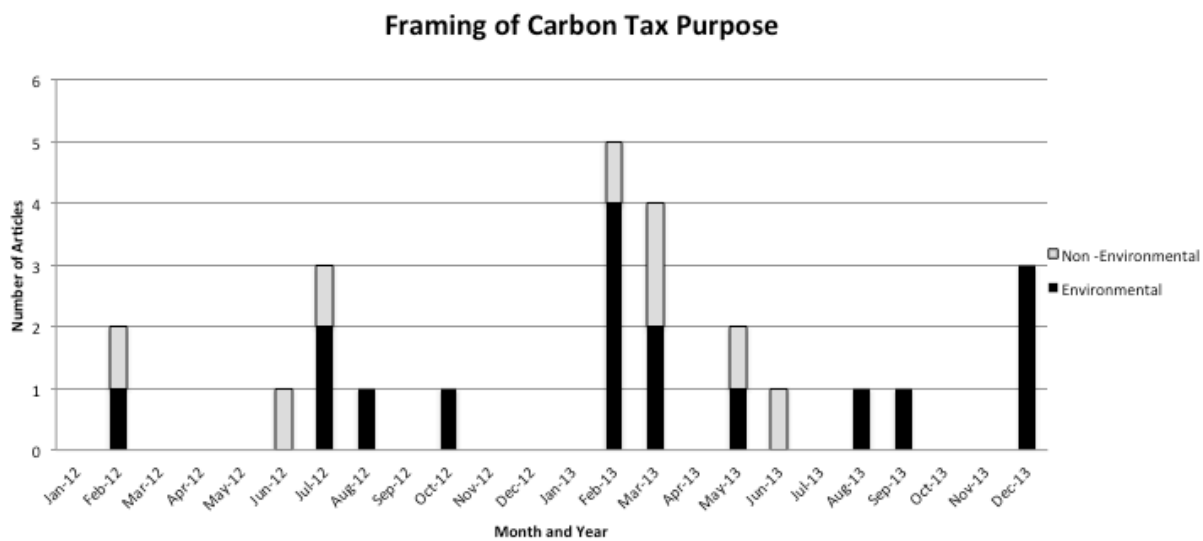
**Figure 2.2:** Number of articles mentioning “carbon tax” by month published in South Africa’s *Times* and *City Press* from January 2012 – December 2013

<sup>76</sup> These stories on foreign carbon taxes only accounted for 3 out of the 25 articles. They reported on the shift in Australian politics and attitudes toward their carbon taxes, and a carbon tax coming under consideration of politicians in the US and China.





**Figure 2.3:** Articles mentioning “carbon tax” in *Times* and *City Press* from January 2012-December 2013 by positive, descriptive, and negative framing around carbon taxes.



**Figure 2.4:** Articles mentioning “carbon tax” in *Times* and *City Press* from January 2012-December 2013 by mention of either environmental purpose of the carbon tax, or non-environmental purpose.

The reception of the carbon tax in media outlets was not so positive (figure 2.3). The negative framing reflected some of the concerns of scholars over the carbon tax. However, losses of jobs and damages to the competitiveness of energy-intensive industry were less central. The articles instead site increases in electricity rates (0.05 R / kwh increase according to one article) and fuel prices as the main worry.<sup>78</sup> This is in part rooted to the distributional issues of a carbon tax anywhere: the poor always pay a higher portion of their income on energy than the rich.

Because 95% of electricity is produced from fossil fuels, and transportation is almost entirely carbon based a carbon tax in South Africa is essentially an energy tax with regressive outcomes.<sup>79</sup> Beyond the obvious equity concerns, there is historical context to the dissent. During Apartheid rule, the electricity infrastructure was designed in such a way blacks were excluded. Universal and equitable energy production became an important part of the post-Apartheid policy.<sup>80</sup>

### ***Government documentation and press releases***

#### ***President Zuma***

There are no speeches made by Jacob Zuma, or any of his staff, published on the website of the office of the president, or his site with the ANC website, that ever mention the carbon tax. There are a few of his speeches published on the website for the South African Office of International Relations and Cooperation from international climate negotiations in

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<sup>78</sup> Yolandi Groenwald, "Eskom May Pass on New Tax Burden," *City Press* (2012), <http://www.citypress.co.za/business/eskom-may-pass-on-new-tax-burden/>.

<sup>79</sup> Mbandlanyana, "The Political Economy of Carbon Tax in South Africa."

<sup>80</sup> Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa."

which he mentions the importance of a transition to a low-carbon economy.<sup>81</sup> However, the most recent of these occurs in December 2010. By that point, South Africa's treasury had only released the initial policy paper on the possibility of a carbon tax. Other domestic action on climate change was still limited to the somewhat sporadic legislation and action initiated by the Department of the Environment. Not surprisingly, these speeches tend to reflect a preference for binding international action, with developed countries taking on the brunt of the responsibility. They do not promote South Africa's unilateral actions.

The National Development Plan of 2013, released in August 2012, which projects policy through 2030, does not state establishing a carbon tax as one of the specific goals of the presidency. However, one of the recommendations for addressing the challenges of climate change is to have a carbon price "entrenched" into the economy by 2030.<sup>82</sup> Addressing climate change is not articulated as a primary goal of the South African government as of 2012 and it is clear that the carbon tax was not a priority of the president.

### ***Department of Environmental Affairs (DEA)***

The Department of Environmental Affairs did not mirror president Zuma's relative silence on the carbon tax. The carbon tax was an important issue for of the DEA for quite some time. In 2008, they released a report including a tax on CO<sub>2</sub> emissions as a portion of a comprehensive market-based climate policy.<sup>83</sup> However, the DEA did not make the carbon tax part of climate-focused legislation passed in 2010.<sup>84</sup> Even though the treasury officially official introduced carbon tax legislation, as early as 2010, representatives of the DEA have

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<sup>81</sup> Jacob Zuma, "Message by South African President Jacob Zuma to the Un Secretary General's High Level Summit on Climate Change, 22 September 2009," ed. International Relations and Cooperation (Pretoria, South Africa 2009).

<sup>82</sup> "Executive Summary-National Development Plan 2030 - Our Future - Make It Work," ed. National Planning Commission (Pretoria, South Africa 2012). pg 57

<sup>83</sup> "Government Outlines Vision, Strategic Direction, and Framework for Climate Policy," ed. Department of Environmental Affairs (Pretoria, South Africa 2008).

<sup>84</sup> check book to see if the 2010 climate change package was passed.

been lauding South Africa's consideration of carbon tax policy to international audiences, in particular to the COP 16 meeting in Mexico, which preceded COP 17 in Durban.<sup>85</sup>

Yet, the DEA has also been an obstacle in implementing the tax. One of the official reasons behind the delay of the carbon tax has been the need to coordinate the carbon tax with existing environmental policy. The DEA has been involved in this process and released a study in 2013 looking to inquiring how the carbon tax, in conjunction with carbon budgeting and other DEA climate initiatives, could be used to make a meaningful impact on reductions in greenhouse gasses.<sup>86</sup> Perhaps in response to these complexities, there have not been any online publications from the DEA that explicitly mention the carbon tax since 2013. The public face of the DEA in terms of the carbon tax may have quieted down, but the DEA has been a consistent supporter of climate legislation, and is likely to throw its political weight behind a carbon tax, and perhaps even advocate for the tax on multilateral platforms in order to invoke international expectations.

***Department of the Treasury:***

As the carbon tax is officially part of Treasury policy, it is not surprising that the office of the Treasury has more materials published online that are related to the carbon tax. Most of these are informational materials such as press releases, policy papers, and presentations from conferences relating to the carbon tax. In virtually all of them, the carbon tax is framed solely as a climate change policy. Outside of descriptive documents that list revenue generation as only one aspect of the tax, and not a motivator, the revenue generation potential of the carbon tax is only raised in the form of public comments and a specific

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<sup>85</sup> Edna Molewa, "South Africa's National Statement to Cop 16 / Cmp 6 Presented by Minister of Water and Environmental Affairs Edna Molewa," ed. Department of Environmental Affairs (Pretoria, South Africa 2010).

<sup>86</sup> Brent Colete, "The Interface between a Carbon Budget Approach and a Carbon Tax," ed. Emily Tyler (Pretoria, South Africa: DNA Economics, 2013).

question by a representative to the national assembly.<sup>87</sup> The treasury goes so far as to explicitly state, *in italics*, that “*the primary objective of implementing to carbon tax is to change behavior rather than to raise revenue.*”<sup>88</sup> Even in the member of parliament’s formal question to the Minister of Finance, revenue generation seems incidental to the carbon tax, citing calculations of estimated revenue from the proposed carbon tax in the 2010 paper written by outside companies, rather than the treasury. While revenue did not appear to be a primary motivator as framed by the Department of the Treasury, revenue recycling was a common theme. Most of the documents acknowledge the issues of inequity and of decreases in competitiveness for South African manufacturers. The usual solutions that are brought to the table are revenue recycling in the form of eliminating the electricity levy to address issues of poverty, and tax-free thresholds and exemptions for vulnerable industries to address issues of competitiveness.

In contrast to the DEA’s public presentation of the carbon tax to international audiences, the Department of the Treasury takes a much more conservative approach, and addresses concerns about the tax’s regressivity. The treasury’s repeated emphasis that the tax is not intended to raise revenue perhaps appeases opponents concerned about the equity and competitiveness consequences. The treasury certainly appears put more effort into addressing issues of manufacturing competitiveness rather than the revenue recycling to address income inequality. The Treasury demonstrates their preference for business interests through their possible revenue recycling program resulting in the phase-out of the electricity tax, with ambiguous effects on the poor, rather than a reduction in a food tax, which would

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<sup>87</sup>Philp David Dexter, "National Assembly Question for Written Reply: Question Number 2068 [Nw2334e]," ed. South Africa Department of the Treasury (Pretoria, South Africa2011).

<sup>88</sup> "Updated Carbon Tax Policy Paper: Request for Public Comments."

definitely have positive effects on the poor.<sup>89</sup> In comparison, descriptions of the tax-free thresholds and tax exemptions are very thorough and specific. This shows that the South African National Treasury may be more concerned with protecting business and competitiveness through the carbon tax than achieving a triple dividend (reducing carbon emissions, increasing GDP, and decreasing poverty). Revenue recycling through a food tax break can achieve all three, but it is not certain that decreasing the electricity tax and providing all of these exemptions will have the same effect.

### **Political Players**

The political debate in South Africa around the carbon tax has been rather limited. Politicians and their parties have been surprisingly quiet about the carbon tax. Opposition stances on the carbon tax waver between the concern for the poor and income equality, and concern for the health of South African business. Political parties, and businesses lobby groups sometimes try to link the two by focusing on businesses as job creators, whereas NGOs tend to focus on maximizing carbon reductions efficacy and the ethical issues posed by poverty.

### ***Political Parties***

What appears to be most remarkable about the politics of the carbon tax in South Africa is the lack of politics. The African National Congress (ANC) has released no statements on their website regarding the carbon tax proposals, which, ironically, were introduced by an ANC-run treasury. Some political sources even state that the ANC is against the carbon on the grounds that it is harmful for growth, a position no doubt

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<sup>89</sup> Heerden, "Searching for Triple Dividends in South Africa: Fighting Co2 Pollution and Poverty While Promoting Growth."

influenced by the powerful coal-mining lobby, manufacturing lobby, and Eskom, the electricity monopoly.<sup>90</sup> This runs contrary to the early moves the ANC made to champion “the development of climate governance.”<sup>91</sup>

In contrast, the current leading opposition party, Democratic Alliance, which brands itself as a multi-racial party, but is viewed by many South Africans as the “white party,” has published two official reactions to the carbon tax proposal. The first, published after the release of the 2010 policy paper, was in favor of a carbon tax, so long as it was designed to minimize effects on business and the revenues are ring-fenced for environmental initiatives. They also used the press release as an opportunity to advocate the break up of Eskom’s monopoly over electricity production, ostensibly so that feed-in tariffs for small-scale renewable energy could be established.<sup>92</sup> However, in 2013, the DA’s tone changed. The DA reiterated their stance that they would not support any tax increases for the next three-year budget cycle. Part of their rationale for opposing the carbon tax was because Eskom has a monopoly. Therefore, the taxes Eskom will pay for the carbon content of the coal they burn would be directly passed on to “ordinary South African consumers” who lack energy alternatives. The press release reiterates that the monopoly should be dissolved and the renewable energy sector be opened as a way to achieve green growth. In the press release, they do not deny the need to reduce carbon emissions, but this time supporting the carbon tax, which they distinguish as a “punitive incentive.”<sup>93</sup>

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<sup>90</sup> Saliem Fakir, "South Africa and Elections: Is the Low Carbon Transition at Risk?," *Nivela*, 6 March 2014.

<sup>91</sup> Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa." 269

<sup>92</sup> Gareth Morgan, "Da Welcomes Proposed Carbon Taxes but Calls on Government to Introduce Fiscal Measures to Mitigate Cost to Business," news release, 2014, <http://www.da.org.za/archive/da-welcomes-proposed-carbon-taxes-but-calls-on-government-to-introduce-fiscal-measures-to-mitigate-cost-to-business/>.

<sup>93</sup> Tim Harris, "Carbon Tax Policy Paper: Da Will Oppose Any Tax Increase until Economic Growth Recovers" news release, 2013, <http://www.da.org.za/2013/05/carbon-tax-policy-paper-da-will-oppose-any-tax-increase-until-economic-growth-recovers/#>.

The change in the statements' tone of the also represents a potential change in how DA considers the issue of the carbon tax. The first press release was released under the office of the DA spokesperson for the environment, making the carbon tax explicitly an environmental and perhaps, more appealing issue. The 2013 press release was under the office of the DA's Shadow Minister of Finance. Even though the issue of revenues was not brought up once in this statement, the official opinion appeared to be aligning with a broader fiscal position, which took precedence over the DA's position on climate change and green growth. Ever since, there has been little public political disagreement about the carbon tax since its appearance in the 2013 budget.

### *Civil Society & NGOs*

Important Environmental and more general Non Governmental Organizations (NGO) such as Genderlinks, Inyaletso, and the Wildlife and environment Society of South Africa (WESSA), while vocal about the need for climate justice, have been silent on the South African carbon tax policy. Climate change and carbon pricing indeed has not been a big portion of the NGO focus. Rather, the environmental issues at the center of most NGO work are "campaigns against nuclear energy, the promotion of better waste management, monitoring air and water born industrial pollution, [and] the promotion of renewable sources of energy" rather than the promotion of carbon taxes.<sup>94</sup>

Nonetheless, there are several NGOs that have contributed to the discourse on carbon taxes. Earthlife Africa, founded in 1988, is South Africa's oldest environmental activism group and is among the NGOs in support of the carbon tax.<sup>95</sup> Based on their online press releases related to the carbon tax, much of their endorsement stems from the aggressive

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<sup>94</sup> "Guide to Environmental Ngos in South Africa," SAGONET pulse, <http://www.ngopulse.org/article/guide-environmental-ngos-south-africa>.

<sup>95</sup> "Carbon Taxation," Earthlife Africa, <http://earthlife.org.za/legal-actions/carbon-taxation/>.



stance that the organization has taken in advocating for climate governance.<sup>96</sup> They were an early proponent of carbon taxation, advocating for a “staggered implementation of carbon taxation,” with “monies ring-fenced in whole or in part for investment in renewable energy,” in a report written with the help of Oxfam in 2009.<sup>97</sup> However, their publications became more prolific and specific after the release of the 2010 Policy Paper. Earthlife argues that the tax should not seek to generate revenue, the treasury should set clear carbon emissions limits, and, to ensure Eskom’s and Sasol’s (a large south African chemical company which produces liquid fuels and electricity) tax burden are not simply passed onto customers, they demand that NERSA (National Energy Regulator of South Africa) and petroleum pricing agencies to set cost ceilings that prevent such price hikes for customers. This proposal seems to be based more on concerns of the efficacy of the tax than its implications for equity. Earthlife advocates for earmarking the revenues in order assist a “just and rapid transition to a low-carbon economy,” rather than to explicitly address issues of poverty and inequality. However, the treasury has not made any efforts to ring-fence the revenues for any purpose, let alone environmental initiatives.

The Environmental Monitoring Group (EMG), founded in 1991, is another environmental advocacy group, with a focus on “building democratic and fair institutions that relate to the use and management of natural resources.” The organization has similar values as Earthlife, uniting the causes of “economic and social justice” with environmentalism.<sup>98</sup> However, unlike their counterparts at Earthlife, EMG in its official reaction to the treasury’s 2010 policy paper, acknowledges the regressiveness of the carbon

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<sup>96</sup> For more information see: "South Africa's Inadequate Emissions Targets," news release, October 24, 2011, <http://earthlife.org.za/2011/10/south-africas-inadequate-emissions-targets/>.

<sup>97</sup> "Climate Change, Development and Energy Problems in South Africa: Another World Is Possible," (Johannesburg, South Africa: Earthlife Africa Jhb. Oxfam International, 2009).7, 41

<sup>98</sup> "About Us," Environmental Monitoring Group, <http://www.emg.org.za/about>.

tax, recommending “people [be] protected through the support to basic food and public transport.”<sup>99</sup> In many of their publications, EMG supports the carbon tax and is adamantly against the establishment of an ETS system, citing not only concerns about the monopolistic nature of the energy market, but also concerns about efficacy, based off of the lack-luster performance of the EU ETS.

There are also a number of transnational environmental organizations active in South Africa. The World Wildlife Foundation (WWF) is one of the most active in South Africa, and their actions translated into strong support for the carbon tax. In its 2013 submission in response to the continuing carbon tax, the WWF, like Earthlife, advocates for “a stronger link between the tax and a low-carbon development strategy”<sup>100</sup> The WWF acknowledges the equity concerns of a carbon tax, but they argue, like Earthlife and EMG that making alternatives to fossil fuels less expensive will ultimately address the issues of economic competitiveness and social impact of the carbon tax.

Oxfam has a broader goal to “create lasting solutions to the injustice of poverty,” and their stance on the South African carbon tax has changed since their initial joint paper with Earthlife.<sup>101</sup> After more details of the carbon tax emerged, Oxfam released its criticisms in its larger paper on low carbon development as it relates to inequality and hunger. In order to avoid the negative effects of a regressive carbon tax, Oxfam advocated that the revenues be recycled in the form of an “equal-per-household” tax rebate so that “those with the least responsibility for emissions [the poorest households] would become the biggest

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<sup>99</sup> "Submission from the Environmental Monitoring Group," in *Reducing Greenhouse Gas Emissions: The Carbon Tax Option (National Treasury)* (Mowbray, South Africa: Environmental Monitoring Group, 2011).

<sup>100</sup> "Submission to National Treasury on Carbon Tax," (Cape Town, South Africa: World Wildlife Foundation, 2013).

<sup>101</sup> "Our Purpose and Beliefs," Oxfam International, <http://oxf.am/2Lj>.

beneficiaries.”<sup>102</sup> They argue that the redistribution of money from the highest carbon users, the wealthy, to the poor would address inequality, and that putting the cash in the pockets of the poor in such a manner would also help address hunger.<sup>103</sup> Thus, Oxfam advocates for the carbon tax, but prefers that the revenues be used to decrease hunger and inequality.

In summary, except for the joint report by Earthlife and Oxfam, NGOs did not advocate for a carbon tax before the treasury released its 2010 policy paper. However, since its release, both local and transnational NGOs made substantive comments and suggestions. All the organizations surveyed for this paper were supportive of the carbon tax, but support was contingent on how revenues from the tax were allocated. While the environmental groups tended to focus on using the money for sustainable alternatives to fossil fuel-based energy, and Oxfam preferred that the treasury use the money for programs that explicitly benefitted the poor. The treasury has not incorporated any of these suggestions into the budget.

### ***Business***

As long as the carbon tax has been committed to law in South Africa, the South African Chamber of Commerce (SACCI) which represents 20,000 businesses in a variety of sectors, has been opposed to the proposal. In 2012, when the carbon tax was first formally introduced into the South African budget, SACCI formally stated that the carbon tax would pose a threat to “tax neutrality” for South African businesses.<sup>104</sup> They articulated in a response to the 2013 budget that “SACCI has been at the forefront of advocating against the

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<sup>102</sup> "You Can't Eat Electricity: Why Tackling Inequality and Hunger Should Be at the Heart of Low Carbon Development in South Africa," (Oxford, UK: Oxfam, 2013). 20.

<sup>103</sup> Ibid. 20.

<sup>104</sup> "Press Release - Sacci Expectation on Budget 2012," news release, 16 February, 2012, [http://www.sacci.org.za/index.php?option=com\\_content&view=article&id=451:press-release-sacci-expectation-ob-budget-2012&catid=9:press-office&Itemid=40](http://www.sacci.org.za/index.php?option=com_content&view=article&id=451:press-release-sacci-expectation-ob-budget-2012&catid=9:press-office&Itemid=40).

proposed carbon tax that would lead to massive job losses and further entrench South Africa's de-industrialization trend."<sup>105</sup> Yet, in their opposition to the carbon tax, the primary stated goal in this particular press release was not the repeal of the tax all-together, but its delay until 2015.<sup>106</sup> Indeed, in 2014, when the treasury further delayed the carbon tax to 2016, SACCI lauded the treasury because "the delay... shows that the National Treasury recognizes the concerns voiced by the Business Community on the job losses in heavy industry that a carbon tax will impose."<sup>107</sup> This is hardly a glowing recommendation of the carbon tax, but whatever their true preferences may be, SACCI is not outwardly communicating any desire to fully repeal the carbon tax.

Other business lobby groups have also opposed the carbon tax. The Business Unity of South Africa (BUSA) also came out against the carbon tax, stating that it would not support a carbon tax until an "array of other local and global climate change projects materialize." BUSA is skeptical that the tax will really result in reductions in carbon emissions. They see the carbon tax more as a way for the government to raise revenue, a potentially troubling concept in a government rife with corruption. However, like SACCI, "the bulk of their" objection "argues for exceptions and keeping the option...[of future carbon taxation] open."<sup>108</sup> Additionally, many of the suggestions made by BUSA in their public comment in response to the department of the treasury's 2013 Policy Paper were eventually incorporated in the 2014 Budget's carbon tax proposal, such as allowing for

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<sup>105</sup> "Sacci Expectations of the 2013 Mtbps - Press Release," news release, 22 October, 2013, [http://www.sacci.org.za/index.php?option=com\\_content&view=article&id=623:sacci-expectations-of-the-2013-mtbps-press-release&catid=9:press-office&Itemid=40](http://www.sacci.org.za/index.php?option=com_content&view=article&id=623:sacci-expectations-of-the-2013-mtbps-press-release&catid=9:press-office&Itemid=40).

<sup>106</sup> Ibid.

<sup>107</sup> "Sacci Comments on 2014 Budget - Press Release," news release, 26 February 2014, 2014, [http://www.sacci.org.za/index.php?option=com\\_content&view=article&id=650:sacci-commetns-on-2014-budget-press-release&catid=9:press-office&Itemid=40](http://www.sacci.org.za/index.php?option=com_content&view=article&id=650:sacci-commetns-on-2014-budget-press-release&catid=9:press-office&Itemid=40).

<sup>108</sup> Ibid.

businesses to use offsets to decrease their tax burden, and a revenue recycling scheme that would “mitigate its impact” on businesses.

Although few interest groups, with the exception of a few scholars and NGOs, were particularly vocal about carbon taxation in South Africa before the treasury presented the 2010 Policy Paper, several actors were quite vocal in their conditional support for a carbon tax. Environmental advocacy organizations such as Earthlife, EMG, and the WWF advocated for the use of revenue for either carbon reductions initiatives, or ones that offer the poor low-carbon alternatives. Oxfam, a broader developmental organization advocated that the revenues of the carbon tax be directly returned to the poor in a tax rebate that is equal for all households. Scholars tended to side more with Oxfam that the revenues be distributed in a way that decreases inequality, but expressed the need that money to be more closely managed by the government; rather than giving a rebate to citizens, scholars would prefer the money be used for specific initiatives, such as food tax breaks.

### **International Influences**

In this section, I analyze the international level “game” South African policymakers played when considering carbon tax legislation. South African climate change policy, as previously noted, has been very influenced by international forces and the carbon tax is no exception.

#### ***International conferences***

The timeline of South African domestic policymaking around climate change rather closely follows the timeline of international climate conferences.

International Climate Momentum	South Africa Climate policy	South Africa Carbon tax progress
1992: Earth Summit	1993: SA signs UNFCC 1997: SA ratifies UNFCC	None
1998: Kyoto Protocol adopted	1998: White paper on climate change 2002: Signs Kyoto 2003: integrated energy plan, white paper on renewable energy 2004: national climate change response strategy	
2005: Kyoto Protocol enters into force; EU ETS established	2007: long term mitigation scenarios; ANC resolution on Climate change	
2006: CDM opens		
2008: Joint implementation starts	2009: National Climate Change and Renewable Energy Summits; Copenhagen Commitment	
2009: Launch of the adaptation fund at Poznan		
2010: Mexico hosts COP, Green Climate fund is established	2010: Climate Change Green paper	2010: First Policy Paper published
2011: South Africa hosts; "Momentum for Change" launched	2011: National Climate Change Response White Paper	
2012: Doha and Doha Amendment; Mexico Passes Carbon Tax	2013: Policy paper on emissions trading published by treasury	2012: Carbon tax first formalized in SA Budget
2014: US and China Climate deal		2014: Final date for implementation (2016) set 2015: formal Carbon tax bill to be passed later in the year.

**Table 2.2:** Timelines of international climate negotiations, unilateral South African climate policy, and South African carbon tax policy

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It is impossible to demonstrate that the two are causally linked, however, it appears that movement in the international climate talks arena at least pulled South Africa's climate policy along. For the carbon tax specifically, there seems to be strong evidence that hosting the climate talks in Durban motivated the DEA and the Treasury to introduce policy. When

<sup>109</sup> "Unfccc--20 Years of Effort and Achievement: Key Milestones in the Evolution of International Climate Policy," United Nations Framework Convention on Climate Change. ; Masters, "Reaching the Crossroads: The Development of Climate Governance in South Africa." 261

the duty of hosting was passed on to the South Africans, the DEA Minister, Edna Molewa, made the first public announcement of a carbon tax in the previously mentioned speech at Cancun. The president of Mexico at the time had aggressively promoted climate change as a keystone of his presidential policies early on; perhaps to not be outdone by the previous middle income hosts, the South African DEA announced a carbon tax to demonstrate that they too deserve to host the UNFCCC and to influence negotiations.<sup>110</sup> As the literature shows, a carbon tax strikes the balance between ease of administering, and perceived effectiveness towards addressing carbon reductions. Thus, it was a good option for a substantial, but politically feasible climate policy. It seems very likely that once this first interest was made, there was enough momentum for change within the bureaucracy to keep the carbon tax on its path to law. Perhaps to highlight their progress, one of the main events at the Durban talks was the “Momentum for Change” campaign, which specifically highlighted domestic, unilateral action taken to address climate change.<sup>111</sup>

South Africa has a great deal to gain from international climate negotiations, especially given their vulnerability to climate change. Strengthening their climate policy clout, especially during negotiations the year before Kyoto expired, would have helped South Africa leverage the negotiations to achieve their goals as articulated by president Zuma, to have developed nations take on more carbon reduction, and to provide financing for South Africa’s clean energy transition through international funds.

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<sup>110</sup> Molewa, "South Africa's National Statement to Cop 16 / Cmp 6 Presented by Minister of Water and Environmental Affairs Edna Molewa."

<sup>111</sup> "Unfccc--20 Years of Effort and Achievement: Key Milestones in the Evolution of International Climate Policy".

### *International Development Funds*

One of the primary drivers behind South Africa's ratification of the Kyoto Protocol was the hope that South Africa could gain access to foreign investment through the CDM program. It might seem reasonable that the development of a carbon tax policy might be similarly motivated towards attracting funding from IGOs like the World Bank. However, it does not appear that climate policy had such an effect. In World Bank website's overview of South African policy on the, there is no mention of climate change or global warming; rather the primary concern is the lack of convergence between the poor and the rich in South Africa. Still, the plan for state partnership for 2014-2017 listed the second goal of "promoting investments through energy, private investments, and environment" after the goal of reducing inequality."<sup>112</sup> There was a sharp peak in the World Bank's lending as of 2010, peaking at approximately \$3 billion USD (Figure 2.5). However, this peak in 2010 is a bit misleading. Between 2008 and 2014, global World Bank project funding peaked in 2010 then steadily decreased plateaued and then rose in 2014 (Figure 2.6).<sup>113</sup> Interestingly, there was a huge decline in funding in 2011, the year that South Africa hosted COP 17 in Durban. This lack of correlation between climate action and World Bank funding seems to indicate that the carbon tax was not passed in South Africa with the idea that being a leader for African and all developing countries in terms of climate policy in order to make them recipients of more IGO funding.

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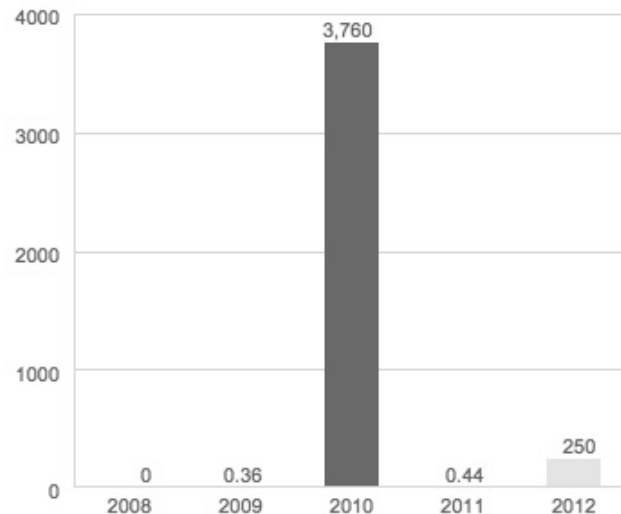
<sup>112</sup> "South Africa Country Partnership Strategy 2014-2017: Reducing Inequality, Promoting Investment and Strengthening Institutions," World Bank, <http://www.worldbank.org/en/country/southafrica/publication/south-africa-country-partnership-strategy-2014-2017>.

<sup>113</sup> "Lending Data and Organizational Information," in *World Bank Annual Report 2013* (World Bank, 2013).

<sup>19</sup> "World Bank Group Commitments Rise Sharply in Fy14 Amid Organizational Change," news release, July 1, 2014, <http://www.worldbank.org/en/news/press-release/2014/07/01/world-bank-group-commitments-rise-sharply-in-fy14-amid-organizational-change>.



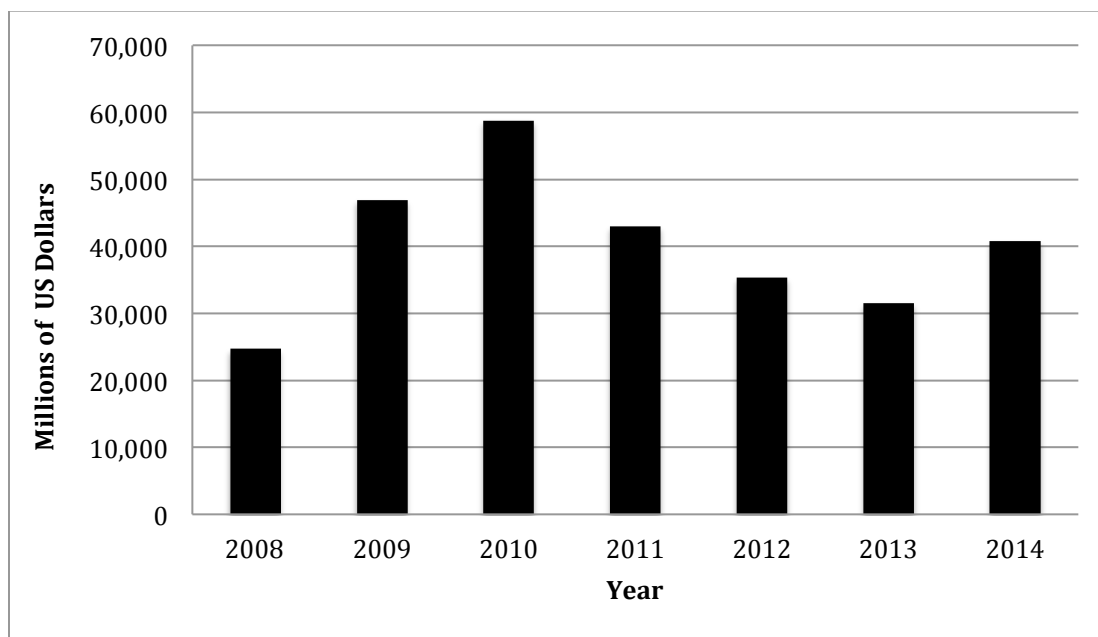
South Africa: Commitments by Fiscal Year (in millions of dollars)\*



\*Amounts include IBRD and IDA commitments

**Figure 2.5:** World Bank financial commitments to South Africa 2008-2012

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**Figure 2.6:** All IBRD and IDA World Bank financial commitments from 2008-2014

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<sup>114</sup> "South Africa," World Bank, <http://www.worldbank.org/en/country/southafrica>.

<sup>115</sup> "Lending Data and Organizational Information.;" "World Bank Group Commitments Rise Sharply in Fy14 Amid Organizational Change."

Although there does not appear to be a link between World Bank loans and climate action, South Africa may be positioning itself to specifically receive “climate” related funds. For example, during the COP 16 negotiations in 2010, hosted in Cancún, the Kyoto and UNFCCC parties formed the “green climate fund” with the purpose of financing climate-sensitive projects in the developing world.<sup>116</sup> Increasing money to this fund became one of President Zuma’s and Minister Molewa’s primary points of emphasis during their speeches to the assembly at Durban. They had a vested interest in ensuring they receive these funds, especially since the CDM and the World Bank’s contribution to South Africa had been inconsistent.<sup>117</sup> By passing a carbon tax, South Africa now maintains its status as one of the leaders on climate change mitigation of the developing world, and thus, a leading candidate to be worthy of funds from the Green Climate Fund. However, the Green Climate Fund is still relatively small. Contributions are dependent on the commitments of high-income countries and have recently reached \$10 billion USD. There is hope that these funds may increase; the UNFCCC set the ambitious goal of growing the fund by \$100 billion each year by 2020.<sup>118</sup> Unsurprisingly, how much goes into the green global fund is dependent on how the rounds of negotiations go leading up to Paris 2015. For example, the fund is much more likely to grow \$100 billion a year if there are mandatory rates of giving from developed countries.<sup>119</sup> If South Africa, and Mexico, for that matter, gain influence in the COP, they

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<sup>116</sup> “Green Climate Fund,” UNFCCC , Accessed December 12, 2014,

[http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/green\\_climate\\_fund/items/5869.php](http://unfccc.int/cooperation_and_support/financial_mechanism/green_climate_fund/items/5869.php)

<sup>117</sup> Edna Molewa, "Statement by Mnister Edna Molewa, Minister of Water and Envionmental Affairs, South Africa--Ath the Cop17/Cmp7 High Level Segment on 7 December 2011," (Durban, South Africa: UNFCCC, 2011); Jacob Zuma, "Address by President Jacob Zuma at the Official Opening of the United Nations Climate Change Conference Cop17/Cmp7 High-Level Segment," (Durban, South Africa: UNFCCC, 2011).

<sup>118</sup> Chelsea Harvey. “Countries are donating billions to a global fund—Here’s what It’s For. *Business Insider*, December 12, 2014, <http://www.businessinsider.com/what-is-the-green-climate-fund-2014-12>

<sup>119</sup> Ibid

can help negotiate such a requirement that would eventually lead to more financing for energy projects.

## **Conclusions**

My analysis demonstrates some surprising findings: the South African carbon tax appears to be only a climate policy and not a revenue raising policy; it did not respond to domestic interests, but rather international pressures on the bureaucracy; and in the process of forming the carbon tax, concerns from NGOs about environmental efficacy and income inequality were ignored in favor of business community concerns about competitiveness. Revenue generation clearly does not seem to be a motivator for the carbon tax, as the current plan is to recycle the revenue out through elimination of the electricity tax, and to give large exemptions to companies that would have contributed a huge proportion of the revenues the carbon tax would theoretically have raised. The initial introduction of South African carbon tax did not respond to any national policy interest, but rather to the pull of international influences. Thus, Putnam's two-level game, as he described it, does not explain the motivations behind the passage of the carbon tax. Legislators and bureaucrats more or less disregarded the primary concerns raised by NGOs and scholars alike, when they finalized the details of the tax. Decreasing the electricity tax may indeed help the situation of the moderately poor with access to electricity, but, unlike decreasing the food tax, it also has the potential to help businesses by decreasing their costs of production. Additionally, it is hard to imagine heavy manufacturers or electricity providers will have much incentive to increase energy efficiency and decrease their GHG footprint if they have 60% and 70% tax exemptions respectively.

This preference for helping business over addressing poverty is problematic. The South African government has struggled with issues of corruption and patronage politics, and President Zuma is certainly no exception to this pattern. It appears that the South African government is making a policy with serious implications for inequality in one of the most unequal countries in the world, purely for the sake of international clout. The intentions of the policy may be altruistic, and there are clearly ways to make a carbon tax have a positive effect on the poor, but as the politics have progressed, it appears that only the concerns of powerful industries have been addressed. Saving industry at the expense of the poor not only raises ethical questions, but also raises questions about the efficacy of the tax's carbon reductions objectives. A poor taxi driver who does not receive the same tax exemption thresholds is certainly emitting much less carbon than an export-oriented steel smelter that would be exempt from about 80% of its tax burden.

Politics are not perfect. In a democracy, policies have to be altered in ways that are not entirely rational in order to be politically possible. Rule by the technocracy has its ethical issues and is no way recommended by this study. Rather, what has become clear is that when carbon taxes are introduced in areas of the world where inequality and poverty are serious issues, they need to be subject to special scrutiny in order to make sure one form of injustice is not needlessly exchanged for another.

## Chapter 2

### A Policy of Dualities: Mexico's Carbon Tax

#### Introduction

As a developing country, Mexico, like South Africa, falls outside the Annex-1 group of states distinguished by the Kyoto protocol. Thus, as a non-Annex-1 state, Mexico also has no binding requirements to reduce greenhouse gas emissions. Additionally, as an oil-producing state, a carbon tax would appear to go against national economic interests by making petroleum-based fuel more expensive. However, on October 30, 2013, the Mexican Senate passed a tax on CO<sub>2</sub> emissions at the points of importation and sale of the ten most common sources of fuel.

Mexico's carbon tax was passed rather discreetly; it was buried within an update to the Impuesto Especial Sobre Producción y Servicios (IESPS) that included different increases on the gas and diesel tax (as a percentage of price, distinct from the carbon tax) and new taxes on high calorie foods and drinks. This law originated in 1980 essentially as a "sin tax" on alcohol and cigarettes and has since expanded. In 1989, the ISEPES was updated to include a tax on gas and diesel as a percentage of their price. This may have been influenced by the mounting air pollution in Mexican cities; in 1992, only three years after the addition of gas and diesel to the IESPS, the UN declared Mexico city as the most polluted city in the world. It is possible, given this context, that the burning of gasoline and diesel was considered enough of a "sin" by the Mexican government or public to be taxed.

The carbon tax is applied at the point of sale to the ten most common fossil fuels (excluding natural gas) and covers about 40% of Mexico's greenhouse gas emissions

(GHGs).<sup>120</sup> The rate of taxation, roughly \$10-50 MXN (\$0.74-\$3.89 USD) per ton of CO<sub>2</sub>, depending on the fuel type, is relatively low in comparison to the other taxes around the world. The tax does somewhat increase in price with the carbon density of fuel with the exception of coal and petroleum, which have the highest carbon density of the 10 fossil fuels, but the lowest tax rate per ton of fuel. The tax is applied at the point of purchase and import, but corporate taxpayers who purchase carbon emissions credits can receive tax credits equivalent to an exemption from the tax.

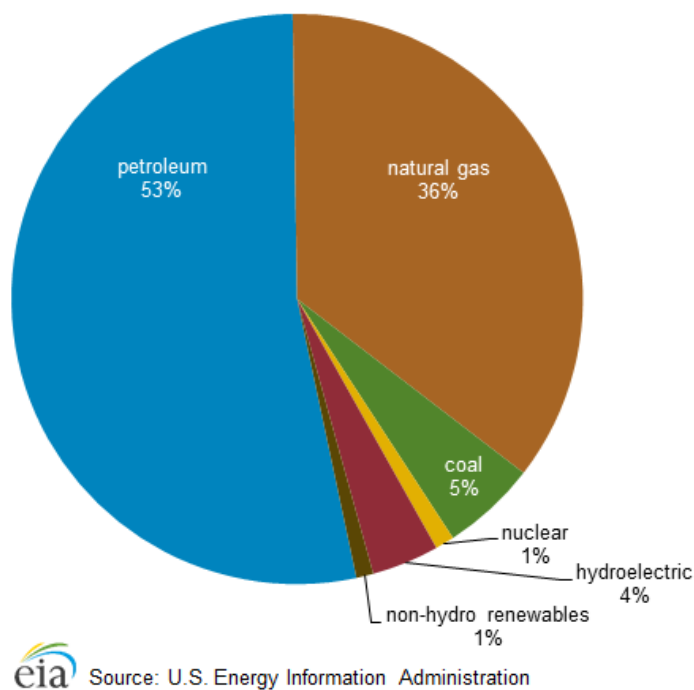
Even though Mexico has had a fairly ambitious climate legislation record, as will be later discussed, the mix of energy consumed in Mexico is very dependent on fossil fuels. As of 2012, 53% of their energy needs were met by petroleum, natural gas made up 36% of the energy portfolio, and coal 5%. Only the remaining 6% comes from non-hydrocarbon sources (Figure 1).<sup>121</sup> Given these realities, it is not unlikely that the carbon tax was viewed by as a mechanism necessary for meeting the ambitious goals laid out in previous years.

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<sup>120</sup> *State and Trends of Carbon Pricing*, (Washington, DC: World Bank Group, 2014), 78.

<sup>121</sup> "Mexico," US Energy Information Administration,  
<http://www.eia.gov/countries/analysisbriefs/Mexico/mexico.pdf>.

Total energy consumption in Mexico by type, 2012



122

**Figure 3.1:** Mexico's 2012 energy consumption by type

To investigate the two questions of the carbon tax as either a climate policy or a revenue raising policy, and the role of multi-level games in the policy formation, I follow a similar structure as with the south African case with some departure. First, I will summarize climate change policy history of Mexico, the recent energy and treasury reforms proposed by President Nieto in order to detail the political context of the carbon tax. Next, I will describe the process by which the law was changed and eventually passed by the Congress, and the influences business may have had on this process. I will also look at the outward communications made by the President, the Energy Ministry (SENER), the Treasury

<sup>122</sup> "Mexico," US Energy Information Administration.

(SHCP) and the Environment Ministry (SEMARNAT) and compare the framing of the tax made by these ministries to the framing of the tax in the two most popular newspapers: *El Universal* and *Milenio* during 2013. Finally, I will look at the impact of the international community on the domestic interests and motivations behind implementing a carbon tax.

In Mexico, there appears to be more political complexity characterized by political dualities. The carbon tax was both part of a domestic, unilateral climate change policy agenda, with the primary motivation of gaining international legitimacy and placing Mexico in a favorable place for global climate policy and other international negotiations, and a revenue-raising scheme for the government to fill revenue holes, and demonstrate its fiscal responsibility to international audiences.

### **A Quick History of Climate Change Policy in Mexico**

In order to look at the tax through a climate policy lens, it is important to understand Mexico's policy-making history surrounding climate change. In the first rounds of the Kyoto protocol negotiations in 1997, Mexico originally took a role advocating for a non-acting status-quo with weak non-binding agreements.<sup>123</sup> However, at home, the public opinion on climate change was far ahead of the government. After the adoption of the UNFCCC in 1992, scientists and environmental bureaucrats from the National University (UNAM), the National Ecology Institute (INE), and the Center for Atmospheric Sciences began a push for study of climate change, to raise awareness of the issue.<sup>124</sup>

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<sup>123</sup> Simone Pulver, "Climate Change Politics in Mexico," *Changing Climates in North American Politics : Institutions, Policymaking, and Multilevel Governance*. ed., Henrik Selin, and Stacy D .Van Deveer, (Cambridge, MA, USA: MIT Press, 2009). 29

<sup>124</sup> Ibid, 30



Interestingly, Mexico is not as vulnerable to climate change as some of its neighbors and competitor countries. One report ranked Mexico as the least vulnerable of the “plus five” countries (China, India, Mexico, Brazil, South Africa) to natural disasters,<sup>125</sup> and among all nations, Mexico is considered to be at “medium risk in terms of vulnerability to natural disaster.”<sup>126</sup> However, these measures of vulnerability do not include the slow acting and sinister trends of desertification and flooding that Mexico is likely to face. The northern portion of the country is susceptible to desertification, much like the southwestern US, and coastal areas, especially on the Yucatan, are at substantial risk of flooding.<sup>127</sup> Mexican scientists’ efforts to “an understanding among the elite about what effects climate change will have on Mexico”<sup>128</sup> were rewarded when Eneresto Zedillo replaced president Carlos Salinas in 1994. He immediately appointed Carlos Gay Garcia, the scientist credited with leading the push on climate research, as the head of the climate negotiations delegations to the UNFCCC. However, until 2000 (the last year of Zedillo’s six year term) when Mexico signed the Kyoto protocol, most of the government action on climate change took the form of supporting scientific investigation and national studies such as a GHG inventory.<sup>129</sup>

During this period before the ratification of the Kyoto protocol by the Mexican Senate in 2000, there was a contest of power between Energy Ministry (SENER) and Environment Ministry (SEMARNAT) over which ministry would host the Office of Climate Change. SENER w sought to protect the interests of the domestic oil industry through weak

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<sup>125</sup> Eang Rong, "Understanding Developing Country Stances on Post-2012 Climate Change Negotiations: Comparative Analysis of Brazil, China, India, Mexico and South Africa," *Energy Policy* 38, no. 8 (August 2010): 4582-4591.

<sup>126</sup>; *World Risk Report 2012*, (Berlin: Alliance Development Works, 2012), 2-3

<sup>127</sup> “Programa Especial de Cambio Climatico 2014-2018,” *Plan Nacional de Desarrollo 2013-2018*. SEMARNAT, 2014, 12-14

<sup>128</sup> Francisco Monaldi, phone call with the author, November, 19 2014.

<sup>129</sup> Simone Pulver, “Politics and Practice of Climate Governance in Mexico,” *Climate Governance in the Developing World*. ed., David Held, Charles Roger, And Eva-Maria Nag, (Cambridge, UK: Polity Press, 2013), 180.

non-binding action, and SEMERNAT favored more aggressive GHG reductions policy.

After a dramatic evening in 2000 when the heads of the ministry sat all night with President Zedillo, Zedillo assigned the climate change office to SEMARNAT. Placing issues of climate change under the control of SEMARNAT likely led to the active outreach to business and the Senate that resulted in the successful ratification of the Kyoto Protocol.<sup>130</sup>

The Mexican government was primarily motivated to ratify the Kyoto Protocol by the promise of participation in the CDM. Because Mexico's national oil company Pemex is infamous for its inefficiency, it lacks the capital it needs to grow and become competitive. Thus, Pemex almost paradoxically, was one of the big advocates for joining the Kyoto Protocol because "Pemex executives saw the CDM as a way to channel foreign investment into company operations."<sup>131</sup> As a reflection of the inefficient state owned monopolies in charge of the energy industry, Mexico's energy costs, especially electricity used by large manufacturers, are 80% higher than energy prices in the US.<sup>132</sup> Pemex officials and politicians alike hoped participation in the CDM would spur international investment in the energy sector and eventually make domestic industry more internationally competitive.

### *Calderón's Climate Commitment*

Under the presidency of Filipe Calderón from 2006-2012, Mexico emerged as a climate policy leader. Unlike presidents before him who waited until the end of their single six-year term to take any action on the issue, he started off his term with an order to draft a National Strategy for Climate Change (ENCC) presented to the Congress in May of 2007.

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<sup>130</sup> Pulver, "A Climate Leader? The Politics and Practice of Climate Governance in Mexico."

<sup>131</sup> Pulver, "Climate Change Politics in Mexico," *Changing Climates in North American Politics : Institutions, Policymaking, and Multilevel Governance*. ed., Henrik Selin, and Stacy D .Van Deveer, (Cambridge, MA, USA: MIT Press, 2009), 39

<sup>132</sup> "A New Mexican Revolution." *The Economist*, November 15, 2015, <http://www.economist.com/news/business/21632504-countrys-energy-reforms-may-transform-not-just-oil-and-gas-business-whole-its?zid=298&ah=0bc99f9da8f185b2964b6cef412227be>

President Calderón chose to make this a focus of his policy early on because of “personal commitment to the issue, and also to gain [international] legitimacy.”<sup>133</sup> His administration later elaborated on the ENCC in the form of the Special Program on Climate Change (PECC) in 2008. Eventually, after the release of a series of non-binding plans for climate change mitigation that made the goals in the PECC more specific, the General Law on Climate Change was passed in 2012. This law set aggressive, legally binding reductions targets: 30% reduction in GHG emissions by 2020 against a business-as-usual scenario; a 50% reduction by 2050; 35% of electricity generation from renewables by 2024; and lays out a cross-bureaucracy framework for the implementation and enforcement of the goals.<sup>134</sup> The institutional scaffolding is intended to “cement an institutional structure for addressing [the] climate change challenge via an inter-ministerial commission, [by] establish[ing] channels of communication between levels of government, the private sector, and civil society, creat[ing] authority to establish a GHG emissions registry and market, set[ting] goals to combat desertification, [setting] and goals enhance electricity generation from renewable sources.”<sup>135</sup>

### ***Neoliberal Nieto***

The election of Filipe Peña Nieto in 2012 had the potential to derail Mexico’s commitment to climate change. Because President Nieto was elected under the mandate of generating economic growth and a reform of the energy industry that included the expansion of drilling and oil exportation, he was not expected to take the executive initiative Calderón

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<sup>133</sup> Heilen G. Meirovich, “The Politics of Climate In Developing Countries, the Case of Mexico,” PhD. Thesis, Georgetown University, 2014, 28.

<sup>134</sup> “OECD Environmental Performance Reviews: Mexico 2013” OECD, 2013, 15; “Mexico’s 2012 General Law on Climate Change,” (2012), <http://energypolicy.asu.edu/wp-content/uploads/2012/04/Mexico-2012-General-Law-on-Climate-Change-brief-sheet.pdf>.

<sup>135</sup> Simone Pulver, “Politics and Practice of Climate Governance in Mexico,” *Climate Governance in the Developing World*. ed., David Held, Charles Roger, And Eva-Maria Nag, (Cambridge, UK: Polity Press, 2013), 184

had on climate policy.<sup>136</sup> Upon entering office, he articulated his main goals for the administration in his Pacto Para Mexico (Agreement for Mexico) with the following categories: security and justice system reform, focusing on protection of human rights; providing social services and protections to fight inequality; increasing quality of public education; creating the economic stability and input necessary for equality of opportunities; taking global responsibility by promoting national interests in relations with other nations.<sup>137</sup> A year after entering office, his administration did put out his own PECC, but addressing climate change was not part of the initial, larger National Development Plan, which establishes the administration's top goals for policy for the six-year term.<sup>138</sup> Even though Peña Nieto is not as explicit or forward in his commitment to climate change, one could argue that he is more likely to accomplish concrete climate goals.<sup>139</sup> His PECC is less ambitious than Calderón's, but experts on climate policy in Mexico find his goals to be more realistic and more concrete, with suggestions of instruments that are more specific and politically feasible, like the carbon tax.<sup>140</sup>

Overall, Mexico has indeed established itself as a climate policy leader, but focus has been more on making targets and using markets. Rather than employing command and control regulation, there has been a preference to utilize mechanisms that provide “win-wins” for business and the government (such as the CDM) as a means to reach the

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<sup>136</sup> Pulver, "A Climate Leader? The Politics and Practice of Climate Governance in Mexico."

<sup>137</sup> "Plan Nacional de Desarrollo ." Plan Nacional de Desarrollo, Accessed December 11, 2014, <http://pnd.gob.mx/>

<sup>138</sup> Heilen G. Meirovich, "The Politics of Climate In Developing Countries, the Case of Mexico," PhD. Thesis, Georgetown University, 2014, 58; "Mexico's National Development Plan 2013-2018: Bring Mexico to its full potential," Nafta Mexico, 2013, <http://www.naftamexico.net/july-2013-mexico%E2%80%99s-national-development-plan-2013-2018-bring-mexico-to-its-full-potential/>

<sup>139</sup> Juan Carlos Belausteguigoitia, phone call with author, December 10, 2014.

<sup>140</sup> Ibid.

government's GHG emissions goals.<sup>141</sup> While there are many players that influenced the development of Mexico's rigorous climate change goals and impressive legislative record, executive leadership of the legislature, especially that of Calderón, seems to have been the key factor in putting initiatives into law.<sup>142</sup>

### **Fiscal Changes Under the Nieto Administration**

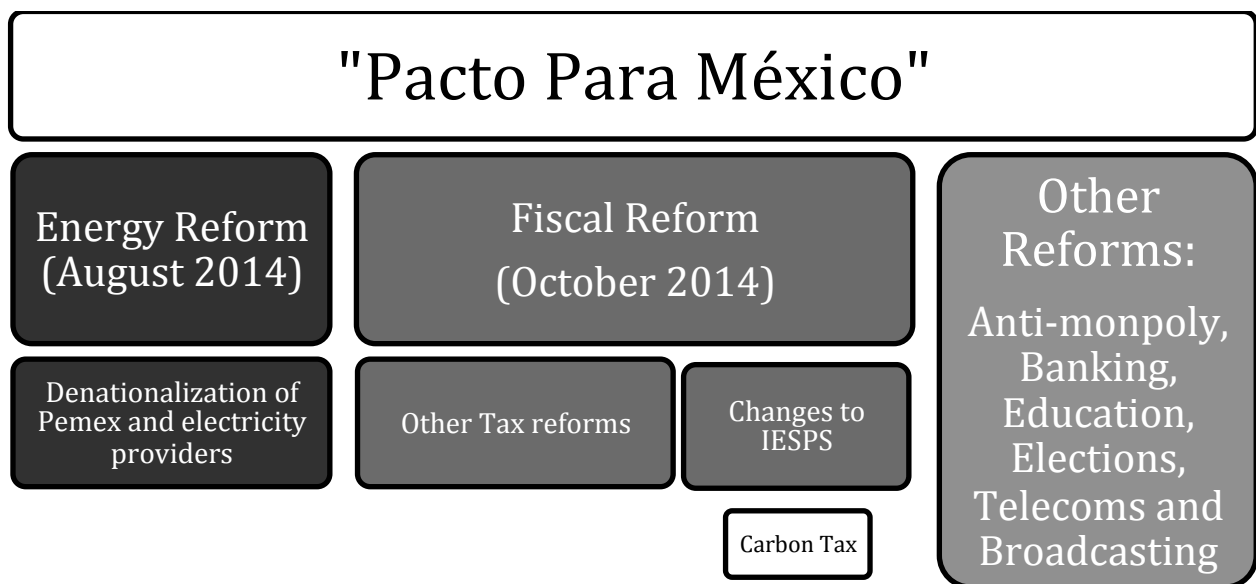
As previously mentioned, the primary political platform of president Nieto was one of economic growth and development. He was elected in 2012 to promote greater efficiency in the government and the economy and fiscally sound policies. The inefficient national oil company Pemex and the similarly inefficient and uncompetitive state-owned electricity monopoly were obvious issues that needed to be tackled for the economy to grow in order to achieve those goals. However, President Nieto is not the first to target the clunky state energy monopolies. Under the Calderón administration, his ministers also proposed a reform in the energy sector that would allow for private investment and competition in both hydrocarbon extraction and electricity generation. Because he was working with a split government, at the time (the Congress was held by the historical majority party, PRI, while he was a member of PAN the opposition party) the challenge proved to be too much to get the reform passed. This gridlock changed when president Nieto (a member of PRI) was elected. He was able to work with a coalition of the major parties to pass a package containing many of Calderón's proposed energy reforms in August 2014. Along with the

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<sup>141</sup> Simone Pulver, "Climate Change Politics in Mexico," *Changing Climates in North American Politics: Institutions, Policymaking, and Multilevel Governance*. ed., Henrik Selin, and Stacy D. Van Deveer, (Cambridge, MA, USA: MIT Press, 2009), 40

<sup>142</sup> Simone Pulver, "Politics and Practice of Climate Governance in Mexico," *Climate Governance in the Developing World*. ed., David Held, Charles Roger, And Eva-Maria Nag, (Cambridge, UK: Polity Press, 2013), 192.

energy reform, President Nieto proposed six other reform packages as part of the legislative agenda of his early presidency. The total reform package (the Pacto Para Mexico) is very broad, encompassing goals such as financial reform, election reform, regulation of the telecommunications sector, anti monopoly legislation, banking reform, education reform, and regulation of telecoms and broadcasting (Figure 3.2).<sup>143</sup>



**Figure 3.2:** President Nieto’s reform package: “Pacto Para México.”

Despite the economic benefits of the energy reform, privatizing the oil industry creates a problem for the federal government. Pemex has been a major source of revenue for the federal government since its founding in 1938, and prior to the reform, funded around 30% of the federal government’s budget.<sup>144</sup> While it will continue to function as an oil firm

<sup>143</sup> Andres Sada, “Explainer: Mexico’s 2013 reforms” *America’s society / Council of the Americas* December 17, 2014, <http://www.as-coa.org/articles/explainer-mexicos-2013-reforms>

<sup>144</sup> “Giving it Both Barrels: Energy Reform in Mexico,” *The Economist*, August 17, 2013, <http://www.economist.com/news/americas/21583664-government-has-made-promising-start-it-may-struggle-bring-historic-reform>

and bring in revenues for the government, its tax burden has decreased, and it will have to share the market with competition from the private sector. The reform increases economic efficiency in the long run, but means that the government will have to find new ways of balancing the budget.

The tax burden in Mexico is relatively low; at 18% of Mexico's GDP, the lowest among OECD countries (the average is 34%).<sup>145</sup> It is hard to imagine that this low taxation rate would be sustainable in the context of the energy reform. So, to accompany the energy reform, Nieto's treasury (the SHCP) composed a fiscal reform, which raises direct taxes for the rich (going against the traditional taxation culture of Latin America) and in general expands the tax base to cover the expenses of the expanding social projects from the government while accounting for loss in Pemex revenue. The IESPS updates, including the carbon tax, were part of the fiscal reform package passed by the Senate on October 30<sup>th</sup>, 2013.

Although Nieto's energy reform was largely borrowed from Calderón's bill that did not pass two years before, the fiscal reform was entirely original to the Nieto administration.<sup>146</sup> The fiscal reform package was truly a huge bill, intended to increase taxation by 1.4% of GDP, but what was passed fell slightly short and will increase the revenue by 1% of GDP. Not only did it include the taxes on high calorie foods and other updates to the sin taxes in the IESPS, but also implemented many other changes in the tax code such as eliminating the business flat rate tax, increasing the top taxation limit for individuals, unified the value added tax across all regions, and redirecting mining tax revenues to local municipalities.

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<sup>145</sup> "OECD Environmental Performance Reviews: Mexico 2013" OECD, 2013, 67

<sup>146</sup> Francisco Monaldi, phone call with the author, November, 19 2014; Juan Carlos Belausteguigoitia, Phone Call, December 10 2014.

As demonstrated in 3.2, the carbon tax was essentially buried in a law that made up a small part of the fiscal reform package, which was only part of the larger Pacto Para Mexico. Passing a carbon tax as only a small part of huge fiscally focused legislation is certainly a more subtle way to put the carbon tax into law than by making an independent bill around the carbon tax, or adding the carbon tax in a larger climate change package. While this does not demonstrate that climate change is a central focus of the administration, the discreetness of the tax and its placement in a vital reform package for the president may have brought less opposition to the tax than if it were introduced as a stand-alone bill or in an environmentally focused package.

In this context, the carbon tax serves a clear purpose as a revenue-generating policy. Because most Mexicans think climate change is a serious issue, as will be later elaborated, it is not unreasonable to assume that they think that greenhouse gas emissions should be reduced. Of course, there is the issue of most Mexicans not wanting to pay higher prices in order to address global warming, but because the tax is a relatively low rate, and broadly spread across the population, opposition to a carbon tax would probably be limited in comparison with other revenue raising schemes.<sup>147</sup> Additionally, because the richer tenths (deciles) of the economy do pay larger percentages of the revenue than the poorer populations, it gives the appearance of being a progressive tax. However, whether or not this tax is progressive is dubious. A tax on gasoline in Mexico is progressive, because the poorest Mexicans don't tend to have cars, but with a general CO<sub>2</sub> tax, that may not be the case.<sup>148</sup> A carbon tax would affect heating, electricity, lighting, and other energy needs that poorer Mexicans are more likely to utilize than gasoline for personal transportation. Because

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<sup>147</sup> Heilen G. Meirovich, "The Politics of Climate In Developing Countries, the Case of Mexico," PhD. Thesis, Georgetown University, 2014, 257



94% of energy is carbon-based, and the poor tend to spend a higher percentage of their income on energy use than the rich, a carbon tax in Mexico is essentially a broad-based energy tax with more adverse effects on the poor.

Although the changes made by the Congress as the bill was debated significantly reduced the carbon tax, and therefore its revenue-raising capabilities, it did raise \$1.566 billion MXN (\$105.667 million USD) during the first quarter of 2014, and 80% of those revenues will be distributed to the states.<sup>149</sup> As a point of comparison, over the same period the tax on sugary foods raised \$2.336 billion MXN (\$156 million in USD) and the Mexican government as a whole collected \$729.60 billion MXN (\$49.25 billion USD) in taxes.<sup>150</sup> This may downplay the revenue-generation hypothesis, but the original carbon tax introduced by the Nieto administration had much loftier goals of raising \$1.4 billion USD over the year. Reductions made by Congress only decreased the revenue-raising capabilities, but do not alter the original intent behind introducing the carbon tax. In a situation where the government is searching for new sources of revenue, a carbon tax that can be spun as an encouragement of responsible behavior, that raises significant, if not astounding revenues, and taxes essentially everyone at a small rate, is likely to be a very attractive revenue-generation option.

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<sup>149</sup> Francisco Monaldi, phone call with the author, 19 November 2014. ; Heilen G. Meirovich, "The Politics of Climate In Developing Countries, the Case of Mexico," PhD. Thesis, Georgetown University, 2014, 258; *Indicadores de Recaudación* " *Informes Sobre la Situación Económica, las Finanzas Públicas, y la Deuda Pública*, SHCP, 2014. b264

<sup>150</sup> "Indicadores de Recaudación" *Informes Sobre la Situación Económica, las Finanzas Públicas, y la Deuda Pública*, SHCP, 2014.

## **Framing**

Because the carbon tax is such a specific and technical policy, there were no direct polls or representations of public opinion in Mexico, like in South Africa on the carbon tax. In order to get an idea of how it was perceived by the public, and compare this perception with the message the federal government was trying to get out to the domestic and international audience, I again conducted a review of newspaper articles mentioning the carbon tax prior its passage, and a review of documents published by the federal government in relation to the tax. The official websites of the legislative branches were relatively silent on the issue, but the executive branch, especially certain ministries and the office of the president, were proud to brandish the carbon tax as an achievement of environmental and fiscal policy.

## ***Public Opinion***

Even though it is hard to gauge what the opinion would be on the carbon tax, the Mexican public does appear find climate change to be an issue of importance. According to the Pew Global Attitudes study, in 2009, Mexico ranked among the top 10 countries in terms of concern for climate change, with 65% of the public considering “global warming to be a very serious problem.”<sup>151</sup> Additionally, In a poll about major global threats in 2013, global climate change ranked the highest of all the issues presented, with 52% agreeing that it was a major global threat. The next two threats were international financial security, with 49% stating it as a threat, and Iran’s nuclear program, which 39% agreed was a global threat. Compared to the opinion in the US, this number is quite high. Only 49% of US respondents see climate change as a global threat. However, when compared to other Latin American

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<sup>151</sup> “Global Warming Seen as Major Concern Around the World Less Concern in the US, China, and Russia.” Pew Global Attitudes, 2009, <http://www.pewglobal.org/2009/12/02/global-warming-seen-as-a-major-problem-around-the-world-less-concern-in-the-us-china-and-russia/>

countries, Mexico's rate of concern is low. On average, 65% of the region's respondents are concerned with climate change as a global threat, with Brazil topping the list at 76%.<sup>152</sup> However, in the same poll, 61% of Mexicans disagreed with the statement "people should pay higher prices to protect the environment." This stance complicates whether or not the Mexican public would be in favor of a carbon tax, as it does make people pay higher prices for environmental protection. Thus, it appears unlikely that the carbon tax was initiated to appease a strong public opinion preference. Although the numbers may tell conflicting stories, they do indicate that the Mexican public is concerned about climate change, and is likely to permit government action on the issue, even if they do not actively advocate for it.

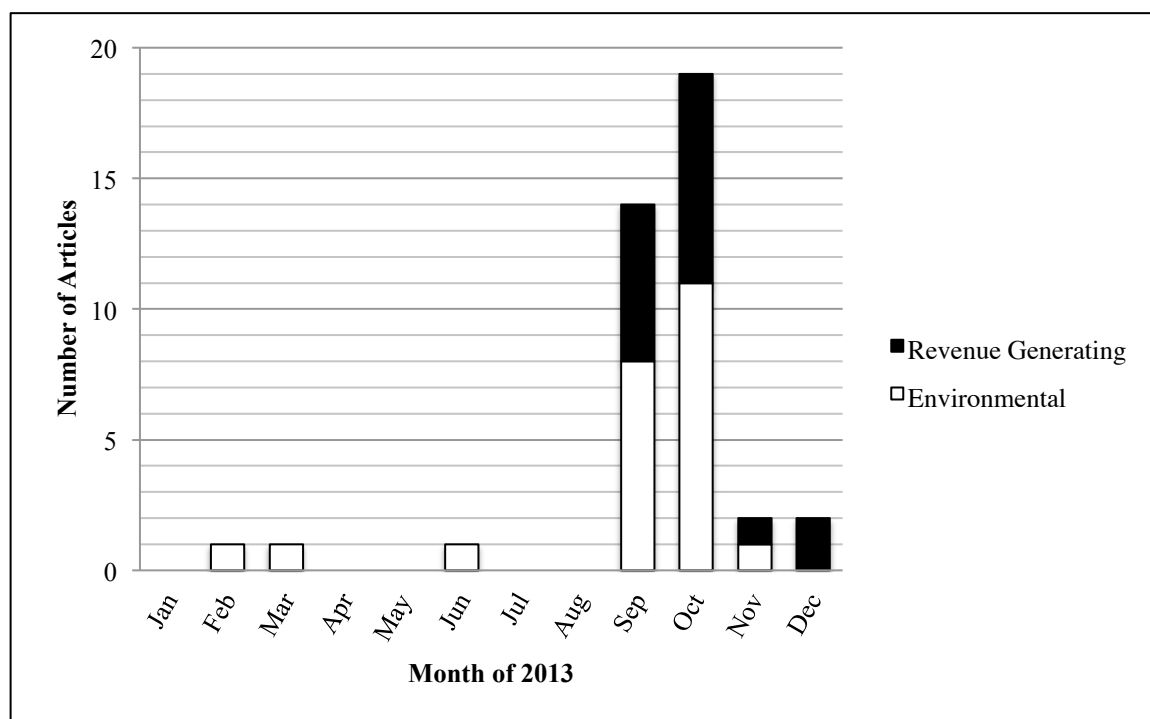
### *Newspaper*

Of course, media attention is an imperfect measure of public opinion, but it can measure public awareness of the issue. The way the media frames an issue, especially one as specific and technical as a carbon tax, is crucial to how the public, and the elite will understand and form their opinions on the carbon tax. I conducted a review of all articles that mentioned carbon taxes in the two most popular papers in Mexico, *El Universal* and *Milenio* during the calendar year of 2013. In the months preceding the passage of the amendments to the IESPS, attention to the issue of carbon taxation did not pick up until September of that year, the month the legislation was introduced. Additionally, the articles hardly reflect a mandate from the media in favor of a carbon tax. Even though the tax was originally presented as an environmental measure, as time approached the vote, coverage increasingly represented it as a revenue generation scheme in an increasingly negative light.

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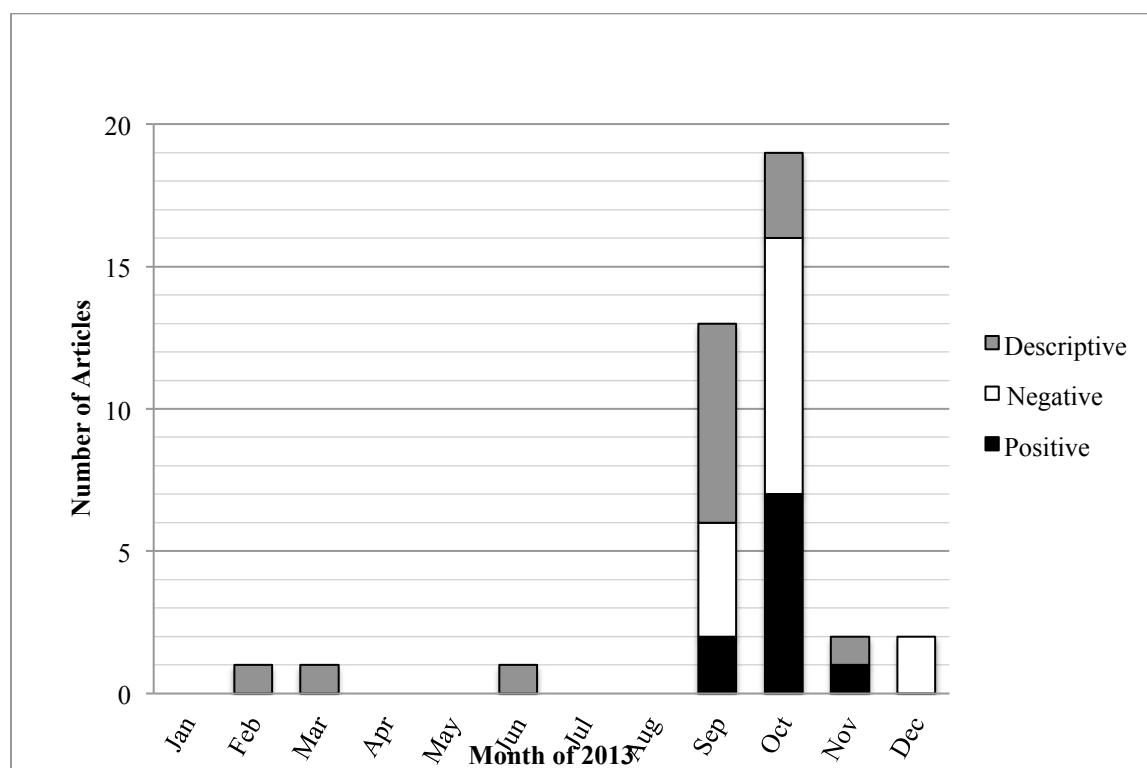
<sup>152</sup> Climate Change and Financial Instability are Seen as top Global threats" Pew Research Global Attitudes project, 2013, <http://www.pewglobal.org/2013/06/24/climate-change-and-financial-instability-seen-as-top-global-threats/>

In this analysis, I marked articles as employing a revenue generating frame that either explicitly mentioned the revenues that the tax would generate, mentioned that the tax would generate revenues, or categorized the tax as part of the fiscal reform (figure 3.3). Any articles that mentioned the carbon tax as a “green tax,” an environmental tax, or an effort to reduce climate change were distinguished as environmental framing. Two articles published in September of 2013 framed the tax as both environmental and revenue raising them in both groups. I did not count another article in October in either category because it did not mention any political intentions of the carbon tax. Instead, it focused entirely on the negative effects that the carbon tax would have on employment in the mining sector.



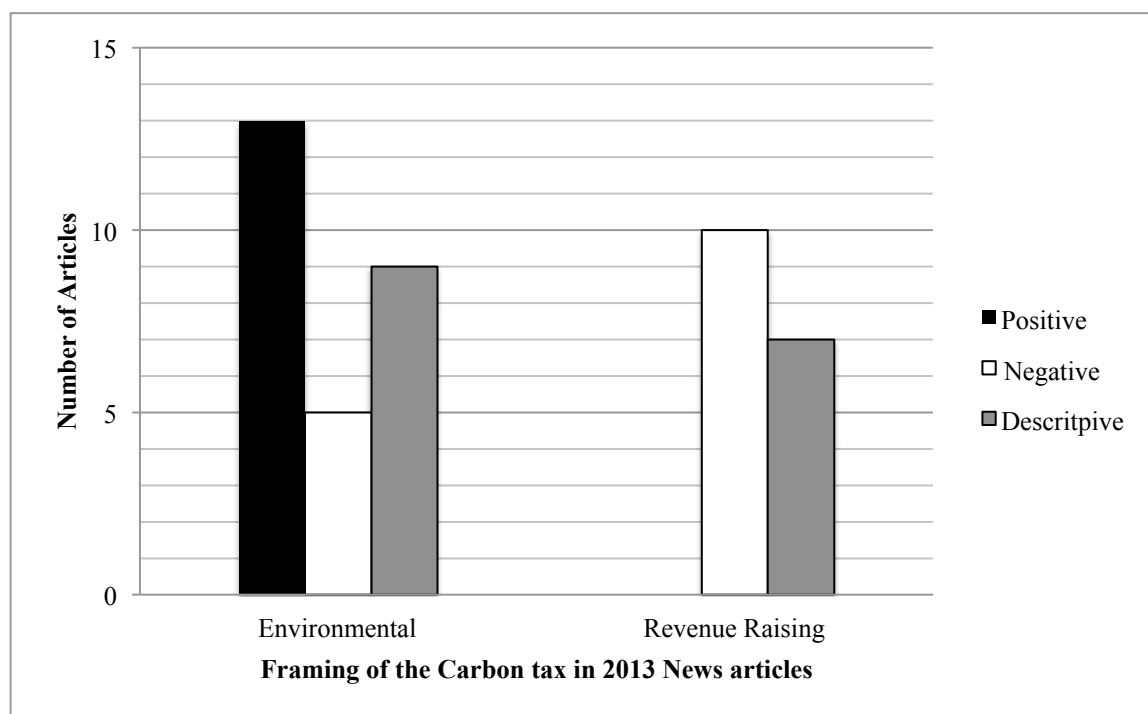
**Figure 3.3:** Framing of carbon taxes as either an environmental policy or revenue generation policy in articles from 2013 in *El Universal* and *Milenio*. N=40

Characterizing the positive, negative, or descriptive stance of the articles was a bit more challenging. In general, if the article focused on negative effects, such as loss of jobs or higher prices as a result of the carbon tax, or if it was reporting on lobbying or other opinions against the carbon tax, I designated it as a “negative” stance. Similarly, if the article focused on positive effects of the tax or on the opinions of those in favor of the tax, I designated it as positive. Those articles that simply articulated descriptions of the carbon tax without giving preference to either viewpoint, were designated as descriptive.



**Figure 3.4:** Positive, negative or descriptive framing of carbon tax legislation in articles from 2013 in *El Universal* and *Milenio*.  
N= 40

From the graphs, it is apparent that before the carbon tax was introduced to Congress in September of 2013, the majority of the articles that mentioned carbon taxes focused on a carbon tax's environmental potential, and took a fairly neutral and descriptive stance (figure 3.3). However, once the legislation was introduced, the total number of articles jumped dramatically from near zero a month to 12 in the month September, and 19 in October, and then dropping back down to 1-2 a month after the legislation was passed. With this jump in attention also came an increase in complexity of analysis. Positive and negative slant articles entered the discourse on carbon taxes, as did the framing of a carbon tax as a revenue generation scheme (figure 3.4).



**Figure 3.5:** Breakdown of Positive, Negative, and descriptive slants of *El Universal* and *Milenio* articles from 2013 about carbon taxes by frames (carbon tax as an environmental policy and carbon tax as a revenue raising policy) used to describe carbon taxes.

Interestingly, nearly all of the articles that presented the carbon tax merely as a revenue-generating scheme (not mentioning the environmental motivations) had a negative slant (figure 3.5). The environmental articles had much more of a mix of positive, negative, and descriptive articles, and all explicitly positive articles written about the carbon tax used environmental framing. This could reflect the Mexican public's general concern about climate change. Articles focusing on the negatives of the tax will be more likely to emphasize the tax as a revenue generation instrument, rather than environmental action, so as to persuade the readers that the negative effects clearly outweigh any positives, which they frame only as revenue generation. Additionally, it is not hard to believe that the Mexican public is less excited about budget balancing than cutting-edge climate change policy. Talking about the carbon tax as a climate change policy will probably draw more readers, and necessitates the enumeration of its potential environmental benefits, giving it a more neutral, if not positive slant.

### *Ministries*

Because the ministries have played consistently important roles in composing climate policy, their outward communications about the carbon tax illuminate the different messages the executive branch wanted to send to the national and international audiences about the tax. Such outward-facing rhetoric reveals what kinds of political gains the bureaucracy, and by extension, the Nieto administration may have been pursuing when they introduced the tax.

The environment and the energy ministries were important players in the discourse on ratification of the Kyoto Protocol. When president Zedillo gave power to SEMARNAT over the Climate Change Office, the involvement of SEMARNAT and the activist scientists

working within was critical to the Protocol's approval in Congress. Additionally, when executives have been unable to move action forward in the Congress, action through the ministries was key to keeping any climate policy momentum. For example, Calderón's PAN predecessor, President Fox (2000-2006) was the first non-PRI president elected in over 70 years, and thus the first Mexican president to work with a split government. Because of the political challenges, the most significant climate policy he was able to pass was with the help of the treasury, in the form tax incentives for renewable energy.<sup>153</sup> Like the carbon tax, the incentives were composed by the SHCP before their introduction to the legislature, setting a precedent for future involvement of the SHCP in climate policy. Interestingly, the SHCP became an advocate for climate policy in part because the World Bank used negotiating leverage to encourage the ministry of finance to enact climate-friendly policies. Thus, the "SHCP accepted those conditions as minor conditions for access to funds from the World Bank."<sup>154</sup>

A review of press releases from the SEMARNAT, SHCP, SENER, and the Ministry of Foreign Relations (SRE), which have been the most involved ministries in past climate change mitigation policy efforts, reveals little attempts to communicate with the public on the carbon tax prior to its passage on October 30<sup>th</sup> 2013. SEMARNAT and SENER did release some documents mentioning a carbon tax prior to October 2013, however, these were studies conducted by outside institutions. The sole document released by SENER prior to the law's passage was a report composed by the Centro Mario Molina in 2010, detailing their recommendations for a route for sustainable growth. The recommendations to the

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<sup>153</sup> Heilen G. Meirovich, "The Politics of Climate in Developing Countries: The Case of Mexico" (Georgetown University, 2014). 175.

<sup>154</sup> Ibid. 175



Mexican government, then published by SENER, mentioned a carbon tax as a preferable carbon-pricing instrument to an emissions trading scheme.<sup>155</sup>

Similarly, SEMARNAT published recommendations all composed by outside sources, such as the OECD, which listed a carbon tax as an intermediary step towards emissions trading schemes.<sup>156</sup> Additionally, in 2009, Academics from the Centro Mario Molina and the Ecology Department of UNAM worked with SEMARNAT, the SHCP, international organizations such as the World Bank, the government of the UK, and the Inter-American Bank for development, to produce a report on the economics of climate change in Mexico.<sup>157</sup> This document also included a carbon tax as a necessary step in a climate change strategy that establishes carbon markets and prices externalities. All of these documents frame a carbon tax as a part of a larger climate change policy agenda that includes the elimination of fossil fuel subsidies and promotion of renewable energy. The revenue-generation aspect of the carbon tax was not mentioned in any of the documents.

After the legislation passed, all the aforementioned ministries except for the SRE did publish online their own documents that mentioned the carbon tax in one capacity or another. As one would expect from the environment ministry, SEMARNAT was the most prolific of them all, always framing the carbon tax as part of the larger climate change policy strategy. The only occasion online documents from SENER mentioned the carbon tax was in passing in a report on the future for carbon capture in Mexico. The report framed the carbon tax as an environmental initiative companies may wish to avoid paying for through carbon

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<sup>155</sup> La Ruta de México Hacia una Economía Sostenible de Baja Intensidad de Carbono,” Centro Mario Molina, September 2010.

<sup>156</sup> Evaluaciones de la OECD Sobre el Desempeño Ambiental.” OECD. 2013. 3.

<sup>157</sup> Luis Miguel Galindo. *La economía de cambio climático en México*. SEMARNAT, 2010.

capture.<sup>158</sup> Some of the documents published by the SCHP also mentioned the carbon tax as a step along their route to low-carbon development. However, most of their documents were descriptive spreadsheets, mentioning the carbon tax only in reference to the revenues it had raised or was expected to raise.

The data from the review of online publications by the ministries appears to be consistent with observations made by previous authors about the decline of involvement of SRE and SENER in climate related policies. Although SEMARNAT was the most vocal on the topic, the reform was ultimately a proposal from the treasury and part of the fiscal reform. The SHCP may have had more influence over the initial proposal than the documents demonstrate.

### *Presidential Communications*

Unlike the communications made by the different ministries, speeches and official communications made by the office of the president emphasized both the environmental and the revenue generation frames for the carbon tax. Nearly all of the speeches mentioning the carbon tax were made to international audiences, mostly at different summits relating to climate change and other environmental issues. In all of these speeches, the revenue generation aspect of the carbon tax was presented as an afterthought, or a positive-side effect of the carbon tax's primary role as a critical piece of the large plan for addressing climate change. Nonetheless, when addressing international audiences, President Nieto always made sure to remind them that carbon tax is part of the fiscal reform and a larger "global agreement" to address climate change. Mentioning the fiscal reform is politically savvy for attracting international attention, because it signals to the World bank, IMF, and outside

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<sup>158</sup> "Mapa de Ruta Tecnológica de CCUS en México," SENER, March 2014.

investors that Mexico was abandoning its old and ineffective tax culture by implementing more neo-liberal and globalization-friendly structural reforms.

One of the few times President Nieto explicitly stated the revenue generation aspect of the tax, and not just the tax's position as part of the larger treasury reform, was during a panel discussion that was part of a summit on biodiversity loss. He stated,

The difference between a tax specifically on carbon and a tax on energy is that the first has the double objective of reducing emissions and raising revenue, of course, the second generally only completes a fiscal objective. A carbon tax is the most efficient... way to disincentivize greenhouse gas emissions... to promote the viability and development of energy efficiency technologies... [and] the use of alternative energy sources.<sup>159</sup>

President Nieto here asserts, yes, the carbon tax does achieve a fiscally responsible objective, but it also encourages sustainable behavior among its citizens, and will shape Mexico's economy in a way that is climate-responsible. By directly comparing the carbon tax with a tax on energy, such as a tax on gasoline as a percentage of its market price, it distinguishes the carbon tax from other revenue-generation schemes that don't have this element of responsibility. This framing of the carbon tax maintains that Mexico is following up on its climate policy commitments, at least on paper, while also demonstrating that the government is more fiscally adept and open to foreign investment. The president's rhetoric use of the carbon tax indicates that Mexico is posturing to engage in the international community as a "well-behaved" and powerful developing country.

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<sup>159</sup> México Será Sede de la conferencia de la diversidad biológica en 2016," Presidencia de la Republica, October 16, 2014. <http://www.presidencia.gob.mx/articulos-prensa/mexico-sera-sede-de-la-conferencia-de-la-diversidad-biologica-en-2016-anuncia-el-presidente-enrique-pena-nieto/>

## **Political Influences on the Carbon Tax Legislation**

Although the executive branch appears to be the driving force behind all climate change policy, including the carbon tax, for it to come into law, it had to go through the legislative process. Between its introduction and its passage, the carbon tax underwent extreme changes. The influences that shaped it, namely Congressional politics and business lobbying, illuminate how the carbon tax eventually was able to come to law in Mexico, and why it exists in the form that it does.

### ***Congress***

When the Mexican treasury introduces taxation law, the law is written in its entirety by the treasury and the other ministerial partners, such as SEMARNAT, in relative isolation from private interests.<sup>160</sup> The initial proposal for the carbon tax was developed by the SHCP in conjunction with SEMARNAT and the Mario Molina Center, an important environmentally focused think tank named after Mexican Nobel Prize winner who discovered that chlorofluorocarbons (CFCs) were the source of the Ozone hole. Before the tax went to Congress, the tax rate was around \$4.79 USD per ton of CO<sub>2</sub> and, as previously mentioned, would have raised a total of \$1.4 billion dollars.<sup>161</sup> However, once it was introduced to Congress, industry, NGOs, and any other private interests had access to the tax proposal and to Congressional representatives in order to lobby for changes.

The Mexican Senate is the higher branch of the Congress, and has ultimate voting power. In the past, it has been very supportive of climate initiatives. For example, when

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<sup>160</sup> Belausteguigoitia.

<sup>161</sup> Ibid.

ratifying the Kyoto protocol, the initiative passed unanimously,<sup>162</sup> and in 2012, under the Calderón administration, the General Law of Climate Change passed with 78 votes in favor, two against, and five abstaining.<sup>163</sup> The overwhelming majority in favor of the legally binding plan is remarkable considering that Calderón was working with a split government.

Because the carbon tax was buried within the larger reform, opposition votes likely do not directly reflect the attitudes of the Senate in relation to the carbon tax. However, in the Senate, the reform was passed rather handily, with 73 votes in favor, and 50 against.<sup>164</sup> The vote happened along very strict party lines, with all members of the PRI voting on favor, all but one in the PAN against, and then some variety among the smaller parties.<sup>165</sup> Much of the objections to the reform framed it as a neoliberal policy and regressive taxation structure that would negatively affect the poor and the economy. Other critics pointed out that the fiscal reform was a necessary step to energy reform, which they viewed as incongruent with national sovereignty and the governing tradition of Mexico.<sup>166</sup> When specifically discussing the carbon tax proposal, none of the critiques denied the threat of climate change or argued that the government should not act on it. Rather, the focus was that the carbon tax itself would be wrong climate policy choice for Mexico. For example, PAN

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<sup>162</sup> Simone Pulver, "Politics and Practice of Climate Governance in Mexico," *Climate Governance in the Developing World*. ed., David Held, Charles Roger, And Eva-Maria Nag, (Cambridge, UK: Polity Press, 2013), 181

<sup>163</sup> "Aprueba el Senado Ley General de Cambio Climatico," *Globe Mexico*, January 16, 2013, <http://mexico.globeinternational.org/index.php/news/item/aprueba-senado-ley-general-de-cambio-climatico>

<sup>164</sup> "Con 73 Votos a Favor y 50 en Contra, el Senado Aprueba en lo General la Reforma Hacendaría," *Red Por la Rendición de Cuentas*, October 30, 2013, <http://rendiciondecuentas.org.mx/con-73-votos-a-favor-y-50-senado-aprueba-en-lo-general-la-reforma-hacendaria/>

<sup>165</sup> PRD 11 in favor, 9 against; PVM 7 votes in favor, PT 4 votes against, and both the senators from the PANAL and the Movimiento Ciudadano against, from: Brenda Colón Navar, "Senado de México Aprueba la reforma Hacendaría Habrá Homologación el IVA en la Frontera," *San Diego Red*, October 30, 2013, <http://www.sandiegored.com/noticias/45305/Senado-de-Mexico-aprueba-la-reforma-hacendaria-habra-homologacion-del-IVA-en-la-frontera/>

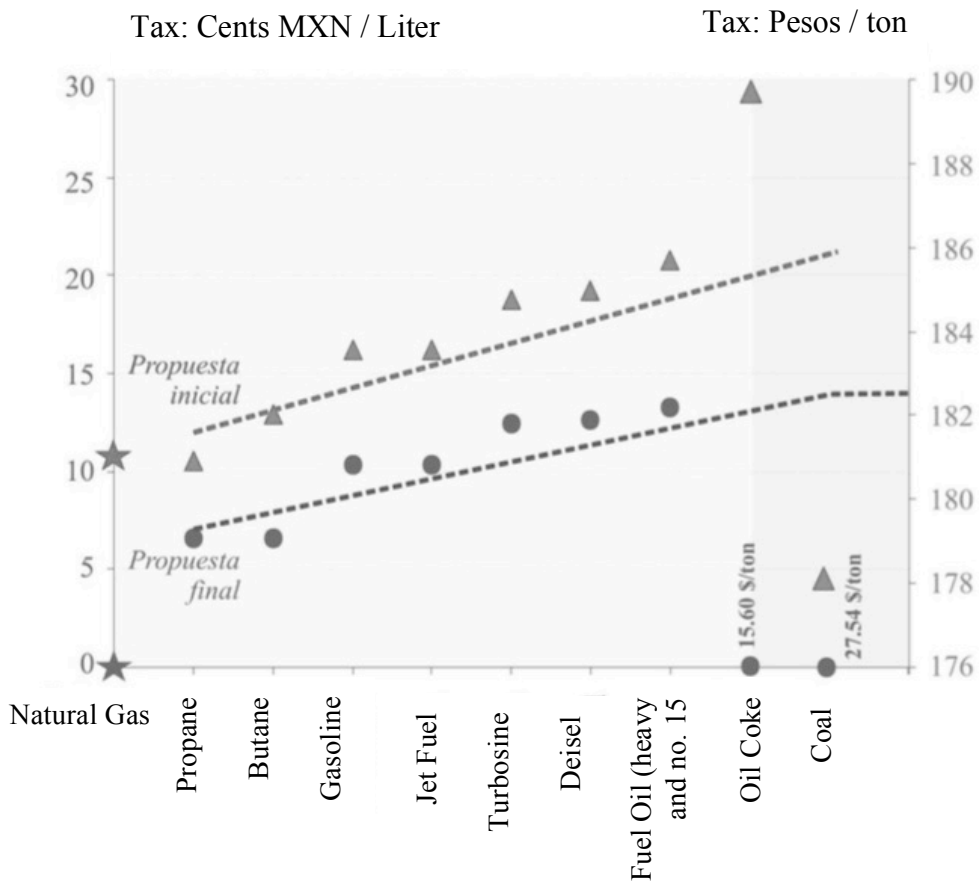
<sup>166</sup> "Boletín-580 Aprueba El Senado en lo General Miscelánea Fiscal." Senado de la republica, October 30, 2014, <http://comunicacion.senado.gob.mx/index.php/periodo-ordinario/boletines/9543-boletin-580-aprueba-senado-en-lo-general-miscelanea-fiscal.html>

members Sen. Silva Guadalupe Garza Galván released a statement, arguing that environmentally sustainable growth is important, but a carbon tax would be fatal to the manufacturing industry. She cited how the BRIC nations have far surpassed Mexico in terms of industrial output and in general, have become more competitive economically. She points out that as a non-Annex I country, Mexico is not obligated to implement policies that address climate change, especially actions that would hinder the country's development. Because, as she argues, the carbon tax will so increase energy prices that it will critically hinder the growth of manufacturing, she proposes a green "tariff" instead on the imports of hydrocarbon fuels instead of a carbon tax, which would have protectionist outcomes.<sup>167</sup>

Galván was clearly not the only one of this opinion. Below, figure 3.6 and table 3.1 demonstrate the differences between the proposed carbon tax and the carbon tax that was passed with the fiscal reform utilizing data from SEMARNAT detailing. During the process of the crafting and passage of the legislation, the original carbon tax proposed by Peña Nieto changed significantly, and became much weaker.

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<sup>167</sup> "Silvia Guadalupe Garza Galván 'Proyecto de Decreto que Aadiciona y Reforma Diversos Ordenamientos Legales en Materia de Competitividad, Medio Aambiente, Cambio Climático y Aplicación de Aaranceles Verdes.'" PAN, October 2013, <http://www.pan.senado.gob.mx/2013/10/sen-silvia-guadalupe-garza-galvan-proyecto-de-decreto-que-adiciona-y-reforma-diversos-ordenamientos-legales-en-materia-de-competitividad-medio-ambiente-cambio-climatico-y-aplicacion-de-aranceles/>



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**Figure 3.6:** Carbon tax rates of the introduced and passed legislation.

<sup>168</sup> "Carbon Tax in Mexico," SEMARNAT, May 2014.

Fuel type	Carbon content (KgC/m <sup>3</sup> based off of Pemex analysis)	Original proposed tax		Original price per ton of CO <sub>2</sub>		Final legislation tax		Final price per ton of CO <sub>2</sub>		% Change
		MXN	USD	MXN	USD	MXN	USD	MXN	USD	
Natural Gas	0.526	\$0.119 / m <sup>3</sup>	\$0.01/m <sup>3</sup>	\$70.68	\$4.79	0.00	0	0.00	0	—
Propane	0.458	0.105 / l	\$0.01 / l			0.0591 / l	0.01 / l	39.78	2.69	43.7
Putane	0.458	0.1286 / l	\$0.01 / l			0.0766 / l	0.01 / l	42.10	2.85	39.7
Gasoline and jet fuel	0.619 (gas) 0.690 (jet fuel)	0.1621 / l	\$0.01 / l			0.1038 / l	0.01 / l	45.26	3.07	36.0
Turbosene and other Kerosenes	0.710	0.1871 / l	0.01 / l			0.1240 / l	0.01 / l	46.84	3.17	33.7
Diesel	0.722	0.1917 / l	0.01 / l			0.1259 / l	0.01 / l	46.42	3.14	34.3
Fuel oil (heavy and no. 15)	0.813	0.2074 / l	0.01 / l			0.1345	0.01 / l	45.84	3.10	35.1
Oil coke	0.900	189.85 / ton	12.76 / ton			15.60	1.06 / ton	5.81	0.39	91.8
Coal	0.825	178.33 / ton	12.08 / ton			27.54	1.85 / ton	10.92	0.74	84.6

**Table 3.1:** Changes in taxes as units of sale (liters and tons) and per ton of CO<sub>2</sub> emissions.

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<sup>169</sup> “Impuesto al CO<sub>2</sub> en México: iniciativa inicial y decisión aprobada por el Congreso,” Centro Mario Molina, 2013, 3-4. ; Carbon Tax in Mexico,” SEMARNAT, May 2014.



As the figures show, there was a general decrease in the carbon price from the original tax proposal to what was actually passed. The original proposal for carbon tax had a uniform price of \$70.68 MXN (\$4.79 USD) per ton of CO<sub>2</sub> while the carbon tax that was passed varied considerably in its rates per ton of CO<sub>2</sub> depending on the fuel type. For example, the price per ton of CO<sub>2</sub> for diesel is \$46.42 pesos (\$3.14 USD) and \$5.81 pesos per ton of CO<sub>2</sub> for oil coke, equivalent to less than one-cent USD.<sup>170</sup> The industrial energy sources with the highest carbon content, such as oil coke and coal had some of the highest rate of discount, lowering the tax for each unit of carbon by 92% and 85% respectively. Further, natural gas was exempted from the tax all together.

The weakening of the tax in Congress may indicate that with the resurgence of the PRI party, climate change became less of a priority than what it was during the Calderón administration. However, that may not be the case as most PRI members voted for the package, and the opposition to the tax articulating concerns came from PAN members, the party of President Calderón.

### ***Business***

Not coincidentally, all of the most discounted fuels, are the fuels of choice used by heavy manufacturing.<sup>171</sup> This is in part because inexpensive natural gas from the US has become the primary fuel for industrial manufacturers and is also the most important fuel for electricity generation in Mexico. Additionally, petroleum coke, which is nearly pure carbon, is a critical input for the steel and other metal industries. The energy intensive industries have been growing at a slower rate than non-energy intensive manufacturing, because of

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<sup>170</sup> “Impuesto al CO<sub>2</sub> en México: iniciativa inicial y decisión aprobada por el Congreso,” Centro Mario Molina, 2013, 3-4.

<sup>171</sup> Belausteguigoitia.

high energy prices in Mexico.<sup>172</sup> The carbon tax most impacted the critical inputs for industries like cement and steel, and these were exactly the industries that lobbied heaviest to change the legislation.<sup>173</sup>

The behavior of private interests during the period that the law was in Congress (September-October 2014) conflicts with the previous scholarship on the role of business in Mexican climate policy. Pulver pointed out that the strongest advocates for climate action outside the government had historically been in the private sector. Of course, the private sector does not behave as a monolith, and unlike in South Africa, there were businesses that publicly advocated for the carbon tax to be passed in its original form. Perhaps the positive advocacy was strong enough to prevent the elimination of the tax altogether.

CESPEDES is a Mexican branch of the World Business Council for Sustainable development. Its members include large multinational corporations that have been recognized for their sustainability efforts such as Walmart, GE, and Enel Green Power. In addition, CESPEDES includes many of Mexico's largest companies like Bimbo Bread, and even Pemex. In 2013 CESPEDES released a long report on the effects that the initial proposal of the carbon tax would have on the Mexican economy. The report listed some of the drawbacks of the tax. For example, it is too low a rate to change behavior in a meaningful way and it will make Mexico economically less competitive. However, the report concluded with its official position, in favor of the carbon tax, a list of the positive effects of the carbon tax, including its value in helping Mexico establish itself as a leader in

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<sup>172</sup> "The Power and the Glory," *The Economist*, July 5, 2014, <http://www.economist.com/news/americas/21606269-foreigners-enthuse-over-enrique-pe-nietos-reforms-mexicans-are-warier-power-and>

<sup>173</sup> Juan Carlos Belausteguioitia, phone call with author, December 10, 2014.

climate change negotiations, and the opportunities the tax provides to incentivize an increase in efficiency in transportation and electricity production.<sup>174</sup>

### *NGOs*

Civil society is palpably absent from the cast of characters. There are a few reasons for this. First, the overall NGO to government policy relationship is still relatively new has yet to mature.<sup>175</sup> Additionally, in Mexico, party influence, not necessarily engagement of citizens through NGOs nor tendencies in public opinion, dominate the national politics.<sup>176</sup> However, even if NGOs or public opinion were influential, it is doubtful that they would have mobilized large campaigns around climate change. In Mexico, most environmental activists focus on local issues, placing responsibility for acting on climate change with the global north countries.<sup>177</sup>

A review of online materials posted by top environmental NGOs revealed very little mention of carbon taxes in general. Virtually none of the Mexico-based organizations such as Pronatura, Espacios Naturales y Desarrollo Sostenible, Fondo Mexicano para la Conservación de la Naturaleza (FMCN), Betadiversidad, Naturalia, Organización Mexicana para la Conservación del Medio Ambiente, and El Centro de Información y Comunicación Ambiental de Norteamérica (CICEANA) have any publications that relate to carbon taxation. The only local organization that did publish any opinions on the carbon tax was CEMDA (Mexican Center for Environmental Law). They co-authored and posted on their website a document by a consortium of organizations, including transnational Greenpeace Mexico (this was their only online mention of the carbon tax either) called Red Transición

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<sup>174</sup> “Propuesta de Impuesto al Carbono: Notas Para el Posicionamiento de CESPEDES,” CESPEDES, September 2013, 12-13.

<sup>175</sup> Simone Pulver, “Climate Change Politics in Mexico,” 26.

<sup>176</sup> Heilen G. Meirovich, “The Politics of Climate In Developing Countries, the Case of Mexico,” 67

<sup>177</sup> Simone Pulver, “Climate Change Politics in Mexico,” 26

Energetica (network for energy transition). In this document, published in September 2013, the month the fiscal reform package was introduced to the legislature, the Red Transición Energetica articulates their preferences for the upcoming fiscal and energy reforms. The carbon tax is only mentioned as one of the legislative goals for the energy and fiscal reforms, and it is not even on the top of the list.<sup>178</sup>

The transnational organizations of WWF Mexico and Oxfam Mexico did have slightly more online activity regarding carbon taxation, but none of the articles offered specific opinions on carbon taxation in Mexico. Oxfam Mexico published materials regarding carbon taxation, but these were essentially limited to celebrating South Africa's announcement at Durban that they were going to initiate a carbon tax,<sup>179</sup> and more generally, including carbon taxation in a list of reforms the G20 as a whole should consider during their 2012 meeting.<sup>180</sup> The WWF also published articles more generally focused on carbon taxation, denouncing Australia's repeal of their carbon tax<sup>181</sup> and again recommending a carbon pricing mechanism be adopted by members of the G20 2011 meeting.

However, WWF Mexico, with the assistance of the transnational environmental groups, did create a report called *CleanTech Mexico*.<sup>182</sup> This report published in early 2015 is perhaps the most thorough NGO consideration the carbon tax. The report first lauds the

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<sup>178</sup> Alejandro Arias Bustatante, "Por Una Mejor Y Más Sostenible Reforma Energética: Opinión De La Red Por La Transición Energética," (Mexico City, Mexico: Red por la Transición Energética, 2013).

<sup>179</sup> "Los Negociadores En La Cop 17 Presentaron Nuevo Intento De Limitar El Calentamiento Global," Oxfam, <http://site.oxfam.mx/los-negociadores-en-la-cop-17-presentaron-nuevo-intento-de-limitar-el-calentamiento-global/>.

<sup>180</sup> "El G20 Le Queda Mal a Mil Millones De Personas Que Padecen Hambre En El Mundo Entero: Oxfam," news release, 19 June, 2012, [http://oxfam.mx/oxfam/g20/descargas/comunicado\\_oxfam\\_g20\\_2012.pdf](http://oxfam.mx/oxfam/g20/descargas/comunicado_oxfam_g20_2012.pdf); "Los Líderes Del G20 Tienen La Llave De Un Futuro Sostenible Y Seguro," Oxfam, <http://site.oxfam.mx/los-lideres-del-g20-tienen-la-llave-de-un-futuro-sostenible-y-seguro/>.

<sup>181</sup> "Wwf Denuncia Que Japón, Australia Y Canada Dificultan El Progreso De La Cop19 En Varsovia," WWF, [http://wwf.panda.org/es/historias\\_recursos/noticias/?212405/wwf-denuncia-que-japn-australia-y-canad-dificultan-el-progreso-de-la-cop19-en-varsovia](http://wwf.panda.org/es/historias_recursos/noticias/?212405/wwf-denuncia-que-japn-australia-y-canad-dificultan-el-progreso-de-la-cop19-en-varsovia).

<sup>182</sup> Luis Aguirre-Torres, "Cleantech México 2015: Panorama Y Recomendaciones Para Impulsar La Ecoinnovación Nacional," (Mexico City, Mexico: E3: Enlace Emprendedores Ecoinnovación, 2015).

existence of a carbon tax and supports it as an economically and environmentally solid measure. However, the majority of the statements regarding the tax criticize its current form and offer suggestions of how it may be improved. The report laments the variable rate by which fuels are taxed, stating while they may be based off of international carbon markets, they are not sufficiently high enough to take into account all of the environmental externalities of burning carbon. In the report's final recommendations on how to promote the growth of clean technology in Mexico, improving the carbon tax by extending it to cover natural gas and turbosine, and using the revenues in order to promote growth in the green energy sector was the top priority. This marks the first and only time that an NGO addresses the issues of the revenues of the carbon tax.

Unlike in South Africa, where NGOs actively participated in the debate on the implementation of the carbon tax, in Mexico, NGOs publicly said little. Those that did offer any official communication on carbon taxation in general rarely acknowledged the actual carbon tax proposal. Also unlike South Africa, there was at no point an acknowledgement of the regressivity of the carbon tax proposal. Thus the only communication that dealt with the carbon tax, one published a year after the implementation of the carbon tax in 2014, suggested that the revenues be ring-fenced for development of clean energy. Perhaps because Mexicans through the evidence in public opinion polls and the newspaper articles, all of the pro-carbon tax articles used environmental framing, tend to view environmental action in a positive light.

## International Influences

### *Multilateral Climate Talks*

Unlike South Africa, the relationship between Mexico's carbon tax and climate change negotiations does not seem to be very strong.

International Climate Momentum	Mexico Climate policy	Mexico Carbon tax progress
1992: Earth Summit	1992: Mex signs UNFCC 1993: Mobilization by scientists 1995: GHG inventory	None
1998: Kyoto Protocol adopted	2000: Mex signs Kyoto 2002: Climate Change office established within SEMERNAT	
2005: Kyoto Protocol enters into force; EU ETS established 2006: CDM opens	2006: Filipe Calderón assumes office 2007: Development of National Strategy on Climate Change (ENCC)	
2008: Joint implementation starts	2008: Special climate Change Programme (PECC) sets goals for 50% in GHG emissions by 2050	
2009: Launch of the adaptation fund at Poznan		
2010: Mexico hosts COP 16, Green Climate fund is established		
2011: South Africa hosts COP 17; "Momentum for Change" launched		
2012: Doha and Doha Amendment; Mexico Passes Carbon Tax	2012: Mexico signs Doha Amendment; passes General Law on Climate Change	

**Table 3.2:** Timeline of international climate negotiations, Mexican domestic unilateral climate change policy, and Mexican carbon taxation.

Rather, as demonstrated by table 3.2, the relationship between the changes in administration seems to have a stronger correlation with climate change policy. Early on, there was a clear correlation between Mexico's climate change policymaking and international negotiation. However, perhaps once the climate governance ball began to roll, policies, especially under Calderón's administration, policies advanced independently of the waves of UNFCCC negotiation. It is possible that hosting in Cancún could have provided the inspiration necessary for Calderón to pass the General Law on Climate Change and chose to sign the Doha Amendment, thus providing the necessary legal foundation upon which a carbon tax may be justified. The technocrats in the Centro Mario Molina, and the bureaucrats in SEMERNAT were likely inspired by the conference and Calderón's passion for climate change, that this inspiration created policy momentum that manifested itself in the carbon tax proposal.

### ***“Matching” World Bank Funds***

There is very good reason for President Nieto's advertisement of the carbon tax as both a climate change initiative, and a sound fiscal policy. While connections of causation are impossible to prove, again unlike South Africa, there appears to be a pattern of correlation between Mexico's leadership on domestic climate action, and benefits it has been able to reap from the international system, be it in the form of World Bank loans and conditions in international agreements that are favorable to Mexico's domestic interest.

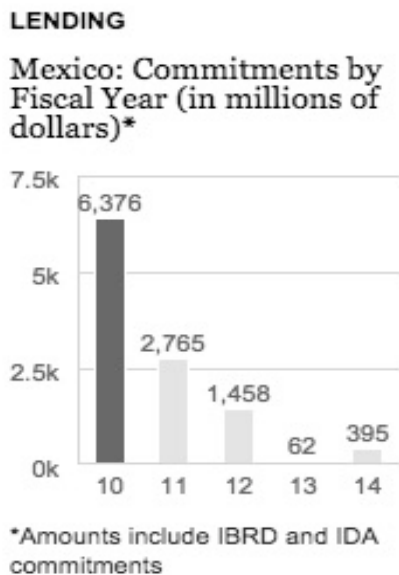
World Bank assistance for Mexico peaked at 6 billion dollars in funds during 2010, two years after the Calderón administration released their first PECC, and the year that Mexico hosted the COP 16 negotiations in Cancún (Figure 7). In 2014, only \$395 million was committed. By comparison, this amount is at minimum \$1 billion short of the

anticipated revenues from the original carbon tax proposal.<sup>183</sup> However, World Bank funding reached its lowest point in 2013, Nieto's first year in office. During 2013, the World Bank provided only \$62 million to, a drop from \$1.5 billion the previous year. Again, the overall funds committed by the World Bank did vary during these years, with overall funding reaching its maximum in 2010. Nonetheless, the Mexican fluctuations in funding are much more dramatic than the overall trends. It is possible that Nieto realized that he would have to step-up the climate change rhetoric if he wanted any chance for the Mexican government to receive the amount of money it did during the Calderón administration. It is also possible that the carbon tax is a sort of "matching donation;" the Mexican government raises more money through a more efficient tax structure that also includes a measure to price carbon and address climate change, and the World Bank is more inclined to give them more funds for development projects.

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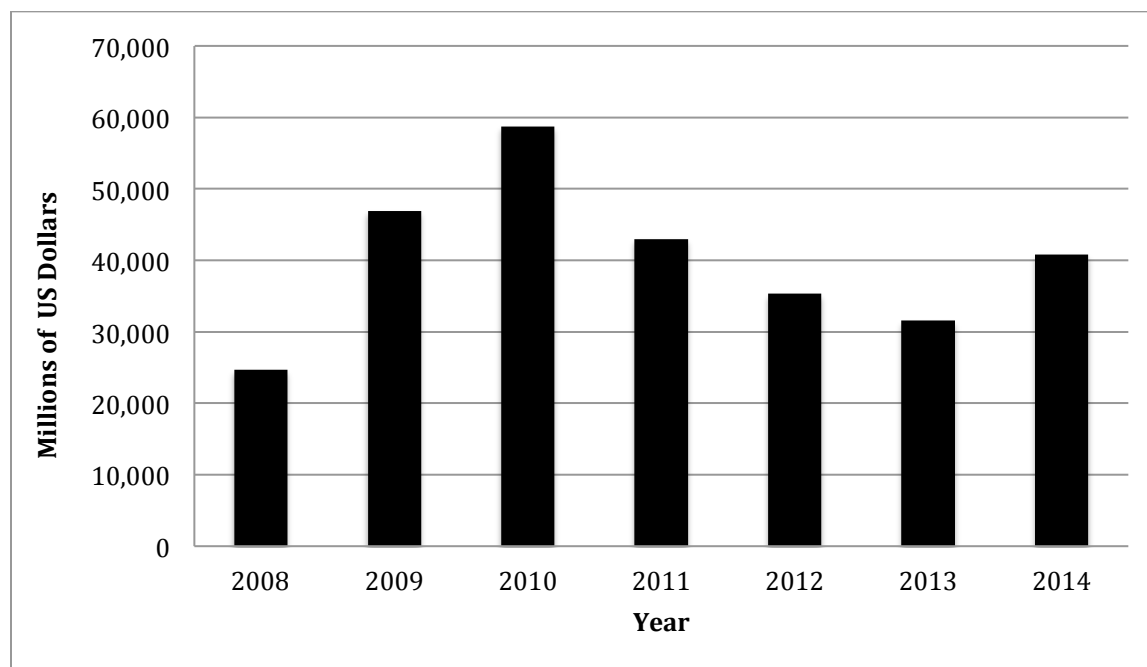
<sup>183</sup> Mexico Overview" World Bank , Accessed October 13, 2014, <http://www.worldbank.org/en/country/mexico/overview#2>





**Figure 3.7:** Annual lending from the World Bank to Mexico from 2010-2014.

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**Figure 3.8:** All IBRD and IDA World Bank financial commitment from 2008-2014

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<sup>184</sup> "Mexico Overview" World Bank , Accessed October 13, 2014, <http://www.worldbank.org/en/country/mexico/overview#2>

Like South Africa, Mexico may have also passed the carbon tax with international environmental funding in mind. Unlike South Africa, Mexico has had a great success record with CDM projects, and was likely instrumental in having the Green Climate Fund initiated at the Cancún COP. The carbon tax not only, at least in theory, encourages domestic investment in low-carbon forms of energy, but signals to donor institutions and governments that Mexico is serious about climate policy and is worth their investment in its energy infrastructure.

*Negotiating Leverage in the International Sphere for Domestic Interests*

Climate change mitigation became one of the primary topics of discussion at the G20 meeting in Brisbane, initiated by the climate deal made between the US and China. Climate change may not have been one of the major foci of “Leader’s Communiqué” released at the conclusion of the summit, but the document did make strong statements on the need for international action on climate. In point 19, the communiqué affirms the countries “will work together to adopt successfully a protocol, another legal instrument or an agreed outcome with legal force under the UNFCCC that is applicable to all parties at the 21st Conference of the Parties (COP21) in Paris in 2015.”<sup>186</sup> Additionally, the document affirms, “support for mobilizing finance for adaptation and mitigation, such as the Green Climate Fund.”<sup>187</sup> Perhaps to remind the countries of Mexico’s climate-leader status, at the most recent G20 conference, José Antonio Meade, the foreign secretary of Mexico, emphasized the efforts that Mexico has taken towards climate change mitigation and its status as a leader

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<sup>185</sup> "Lending Data and Organizational Information." "World Bank Group Commitments Rise Sharply in Fy14 Amid Organizational Change."

<sup>186</sup> “G20 Leaders’ Communiqué, Brisbane summit, 15-16 November 2014.”Ministry of Foreign Affairs Japan, 2014, <http://www.mofa.go.jp/files/000059841.pdf>

<sup>187</sup> *ibid*

among not just developing economies, but also nations at large.<sup>188</sup> This reminder, coupled with the assertions of the G20 to work towards a meaningful treaty in 2015 and to support the green climate fund indicates that Mexico has a lot to gain from productive negotiations and a strong climate fund. With the G20 behind climate change action, mostly as a result of the momentous deal between the US and China made the week before, there perhaps is hope that Mexico's investment in becoming the developing world's and Latin America's leader on climate change policy will yield influence over important international negotiations, and thus the benefits of being primary receivers of funds and advantageous terms of an international agreement.

As demonstrated in the discussion on Nieto's outward communications, coming off as both climate friendly and fiscally smart is a direct signal to the international community that Mexico is a state worthy of influence as "a player in a multi-level negotiation in which Mexico uses its membership in selected groups as a bargaining position to get resources under the best conditions possible for its development in exchange for specific actions."<sup>189</sup> Especially because among Latin American countries, Mexico is second to Brazil in terms of population and economy size, and has grown much slower than Brazil in the past decade, the government has the "desire to be the owner of the climate change topic in the region, and thus demonstrating an instance where domestic policy adoption seeks to be consolidated or legitimized internationally, which at the same time affects the international climate regime."<sup>190</sup> This potential interest is reflected in the Nieto administration's goal for a

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<sup>188</sup> "Meade Kuribreña Participa En Honada ", *El Mexicano* (2014), <http://www.el-mexicano.com.mx/informacion/noticias/1/2/nacional/2014/11/16/804003/meade-kuribrena-participa-en-jornada-final-del-g20>.

<sup>189</sup> Heilen G. Meirovich, "The Politics of Climate In Developing Countries, the Case of Mexico," PhD. Thesis, Georgetown University, 2014, 112

<sup>190</sup> *ibid*, 110

“Mexico with global responsibility.” By passing legally binding legislation on climate change in 2012, and in 2013 “following up” by implementing the first carbon tax outside the global north, Mexico increases its climate clout and positions itself ahead of the curve if climate negotiations end up producing more binding agreements. Already having carbon taxation legislation in place in the event an international treaty made carbon pricing mandatory, would give Mexico a competitive advantage over other countries because it would not have to establish a new law or institutions in order to comply. With their potentially increased influence in international negotiations as a result of Mexico’s status as a climate and financially responsible middle-income country, Mexico could ensure that agreements have stipulations that enhance its strengths and plays to its competitive edge.

## **Conclusions**

The Mexican carbon tax seems remarkable and unlikely given the status of Mexico as a developing, oil-producing, highly fossil fuel dependent economy, especially with the election of a president under the mandate of economic growth and liberalization. Of course, there was significant resistance, especially on the part of heavy manufacturing, which has left the carbon tax essentially impotent in its current form. In the context of the reforms and the characteristics of the law, the framing of the carbon tax by domestic government and private actors, Mexico’s relationship with the World Bank, and Mexico’s position in the international community, there appear to be very rational, non-altruistic motivations. A two-level game as articulated by Robert Putnam is likely to be in play.<sup>191</sup> First, on the domestic level, as Pemex shrinks in size and reforms allow for competition in the energy sector, the

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<sup>191</sup> Robert D. Putnam, “Diplomacy and Domestic Politics: the Logic of Two-Level Games,” 427.

government of Mexico is losing a major source of revenue. This combined with the planned expansion of services offered by the government creates a need for fiscal reform and alternate revenue generation, and a carbon tax falls within the category of consumer taxes, which are built into the region's taxation culture. The domestic awareness and movement on climate change comes into play because it has deemed emissions of greenhouse gases to be a widely accepted negative by the public and the political elite. Thus, emissions of carbon dioxide are considered something that negatively impacts the citizens of Mexico like alcohol, cigarettes, or sugary foods, making them attractive for governments to tax. Because of the influence of heavy industry, the tax is not likely to result in dramatic changes to the energy sector. Although tax in its current form is not significant enough to radically affect the carbon-dependence of the economy, and like in South Africa, does not address concerns of regressivity, it does have symbolic value.

This symbolic value, while maybe appeasing some activists at home, has a much larger impact on international relations. First, it may be sufficient to convince IGOs that the Mexican government has proved itself worthy of funds for development projects. Additionally, as an upper middle-income country and a member of the G20, in order to win the favor of powerful players in the international system, Mexico has to differentiate itself from other regional leaders like Brazil, Argentina, and Chile. Taking action on climate change has already allowed Mexico to host a major conference in Cancún in 2010. As the climate discussion between states becomes more serious, Mexico's investment in being a leader on climate policy, especially among developing countries, has put Mexico into a more favorable position among states to negotiate terms more favorable for their domestic interests.

Although the carbon tax was hardly an altruistic move to re-orient the Mexican economy towards a low-carbon model, and may have problematic implications for the poor, it does have the potential to be increased to levels that would have an effect on behavior and carbon-intensity of the economy. Juan Carlos Belausteguigoitia, the executive director of the Centro Mario Molina, stated that he expects the carbon tax to be increased within the next 3-4 years. Of course, politics are hard to predict, but with the lower oil prices, it is entirely possible that the already diminished government revenues from oil rents will further decrease over the next few years increasing the need for the government to raise taxes. This may or may not be welcome news. If the Mexican government does not take that as an opportunity to address issues of equity and regressivity, they will only reinforce the pattern of saving the wealthiest, biggest polluters while punishing those who have little agency over the carbon intensity of the energy that is so vital to their livelihoods. Further, Mexico as an earlier mover has an obligation to set a positive precedent. Carbon taxation has already diffused to other Latin American countries. On September 27<sup>th</sup> 2014, Chile passed its own carbon tax law, planned to take effect in 2018. If Mexico sets the example of altering its carbon tax in a way that is more effective and equitable, the carbon tax may serve as a positive model for the rest of the continent.

## **Chapter 4:**

### **Equity, Ethics, and a New Climate Justice**

#### **Introduction**

Now I return to the fundamental question of this project: what political factors lead to the implementation of national carbon taxes, particularly in countries outside the most-developed nations group? What factors most drew the carbon tax into the government's agenda, allowed its passage, and shaped into the form that these carbon taxes take today? What are the consequences of a carbon tax for developing states that still face high levels of inequality? Looking at both South Africa and Mexico, a couple of patterns and questions for further investigation emerge.

Overall, it appears that in both South Africa and Mexico, attending and hosting international climate change conferences served as the political impetus for carbon taxes. The environment ministries, those most invested in producing a good showing of policy at these conferences, and those that likely put the most effort into hosting these large conferences, may have felt simultaneous pressure and inspiration to deliver on a substantive climate change policy that would be relatively easy to implement, such as a carbon tax. Not only would this legitimize their role as hosts of climate conferences, but also position these countries to be the climate change leaders of their region. These ministries were able to maintain momentum for action in South Africa and Mexico despite presidents who, at the time of the carbon tax's passage could be described as neutral towards climate policy.

The Treasury ministries composed the specifics of the carbon taxes in relative isolation of influence from interest groups. Interest groups appear to only have had input on

the carbon tax after the treasuries introduced their formal proposals. While the process of revision was very different in South Africa and Mexico, both countries were primarily influenced by the lobbying of big business, in particular heavy industry. The lobbying, in the end, had the final effect of weakening the carbon reducing capacity of the taxes. This is particularly problematic in terms of the conditions of economic inequality in these countries. As discussed, carbon taxes in countries heavily dependent on fossil fuels for their energy mix, such as South Africa and Mexico, are essentially taxes on energy, which are regressive taxes.

Thus, the poor, in particular those who are no longer in abject poverty but still struggle with the basics of everyday life, face not only an extra burden, but are limited in their ability to move into a level of comfort and stability. Before we celebrate these policies and recommend their adoption in other developing countries, the international community and domestic governments alike must consider their priorities of assisting big business, ensuring climate policies have the desired effect of decreasing carbon emissions, and the already troubling conditions of inequality and poverty that are present in middle-income countries.

## **Observations from the Two Cases**

### ***A-political similarities***

Side-by-side, the political process behind the passage of carbon taxes in South Africa and Mexico reveal some interesting patterns and hypotheses to be tested in future studies (Table 4.1). First, both of these taxes were primarily framed as environmental measures by their advocates, rather than as revenue generating policies. Nonetheless, the taxes were minor



elements of large treasury bills, written and initiated by bureaucrats from the environment ministries, then adopted by national treasuries and subsequently passed by legislatures. Second, carbon tax legislation, or even climate change policy in general, was not initiated by civil society activity or advocacy from the private sector. The major parties of both countries published little to no information online about the carbon tax, neither did they speak out in major media outlets. Rather, experts and elites initiated interest in the issue. This interest turned into action and policy within the bureaucracy, eventually forming enough policy momentum for the environmental ministries to work a carbon tax into large, important treasury packages. Finally, it seems that initial interest in climate change policy and the carbon tax, came from international pressures, as the two countries sought the title as the climate policy leader of Africa or Latin America. This seems to have only been reinforced by the normative pressure of hosting conferences to have strong climate change policies. Given the timeline of events, there appears to be a strong correlation between international climate negotiations, and the waves of climate policy. International negotiations, and promises made at them appear to have lead to commitments that require significant legislative support should South Africa or Mexico wish to uphold them.

<b>Mexico</b>	<b>Factors</b>	<b>South Africa</b>
Strong	Climate	Strong
Strong	Revenue	Weak
Medium	President	Weak
Weak	Political Parties	Weak
Very weak	NGO	Weak
Strong	Business	Strong
Very Strong	Bureaucracy	Very Strong
Strong	International Negotiations	Very Strong

**Table 4.1:** Comparison of political influences in the passage of South Africa's and Mexico's carbon taxes.

Both laws have also undergone change since their initial proposal. For South Africa, the changes have occurred over the course of five years as a result of input from different stakeholders in the form of public comments on policy papers and lobbying. However, in both cases, the changes made since the initial proposals have been in favor of the business community. In South Africa these changes have mostly taken the form of tax refunds for certain industries ranging from 60%-100% exemption. The date of implementation of the South African carbon tax has also been pushed back twice. However, in 2015, the treasury under a new director, Nhala Nene, did not push the date of implementation back any further, and later in 2015, the treasury is expected to release the finalized bill for the national carbon tax. Nonetheless, the changes have been much more systematic and purposeful than the changes of the carbon tax in Mexico. In the case of Mexico, the changes happened within the period of only a couple of months, and ended up yielding a significantly weakened

carbon tax that does not tax carbon content uniformly, calling into question whether or not the carbon tax is indeed a tax on the carbon content of fuels. By reducing the tax rate for natural gas to zero, and for coal and petroleum coke to near zero, these reductions favor heavy industry and the large businesses that participate in them.

### *Contrasting Questions*

Despite all these similarities, there are significant differences between the cases. These differences raise more questions for research and discussion. In terms of leadership on climate initiatives in Mexico and South Africa have some significant differences. Presidents have mostly initiated the Mexican climate change policies, with Felipe Calderón taking on the issue more aggressively than any of his predecessors, perhaps creating the space President Enrique Peña Nieto needed to pass a carbon tax. In contrast, the South African governmental actions on climate change seem to be solely correlated to pressures initiated by international climate negotiations. In Mexico, SEMERNAT and environmental experts from other institutions also contributed to the trajectory of climate change policy in Mexico by taking on the role of constant advocate for action, ready with policy options for when there was political will to act.

South Africa and Mexico also differ in their treatment of revenues. First, the policymakers and the media in Mexico are much more open about the revenue generation capacity of a carbon tax. This, in a way, makes sense as it is included as part of a large treasury overhaul intended to increase government tax revenues as the national oil company's ability to fund the government will decrease with the restructuring of the energy market. The Treasury's plan for the revenues specifically of the carbon tax is quite unclear. In contrast, due to the various concerns raised by advocates for the poor and for big

business, the South African government has very clearly indicated that the carbon tax is not intended to raise revenue, but to increase energy efficiency and reduce carbon emissions. To further this end, all the revenues of the tax are to be recycled through an elimination of the electricity tax. Of course, there is always an opportunity for corruption, especially if the carbon tax's revenues exceed the revenues of the electricity tax. The rest of the money money could, like the Mexican carbon tax revenues, simply disappear into the South African budget.

The respective carbon taxes do appear to fall within the distinct patterns of other climate policymaking within their country. Although it is unlikely that President Nieto himself initiated the effort to institute a carbon tax, because it was part of a large initiative at the center of his campaign promises, it certainly is connected to his office. Additionally, it appears that SEMERNAT and the Centro Mario Molino, rather than the treasury, did the majority of the work needed to craft the initial proposal for the carbon tax. The frequent reference of the carbon tax in international communications made by President Nieto and staff from SEMERNAT, in comparison with the lack of attention other politicians or civil society gave it, further supports this thesis.

In contrast, neither Jacob Zuma nor his predecessors seemed to be very concerned about domestic climate change policy. Speaking at international climate summits, particularly in Durban, Zuma did emphasize the importance of action on the part of more developed countries, but did not discuss in specific terms the efforts his own government had made towards a low-carbon economy. Rather, the DEA has appeared to take on the biggest role of advocate for climate change efforts as most of the climate change initiatives,

including carbon budgets and tax incentives for renewable energy, were designed by the DEA, and then implemented by the DEA itself, the treasury, or another relevant ministry.

In Mexico, perhaps because the carbon tax proposal came a bit more “out of the blue,” there was virtually no academic scholarship on the possibility or the reality of a carbon tax in Mexico. In contrast, In South Africa, there was a lively academic debate on carbon taxes since 2006, four years before the government formally introduced a carbon tax proposal. This academic debate, along with advocacy from NGOs acting within South Africa, has raised serious questions about the equity concerns of the carbon tax.

### **Policy Options**

As admirable as is the unilateral action South Africa and Mexico have taken to address climate change, the matter is not so simple as it may be in the other countries that instituted carbon tax. Because South Africa and Mexico are societies with a different socio-economic structure from other countries with carbon taxes, one would do well to avoid assuming that South Africa and Mexico can proceed forward with a carbon tax in the same way their predecessors did (table A.1). Are the tools in the conventional carbon tax policy tool belt (putting the revenues in the government budget with no earmarked purpose, recycling the revenue through cuts in income tax, using the revenue to decrease employer social security contributions, or directing the revenue towards carbon reductions programs) sufficient for the needs of middle-income countries? Existing studies on the economics of hypothetical carbon taxes in South Africa and Mexico seem to indicate that, for the carbon tax to avoid pitting carbon reductions goals against the interest of poorer classes, different policy options must be explored.

Carbon taxes in any economy will tend to be regressive. They are especially so because, in hydrocarbon based energy markets, they become essentially a tax on energy.<sup>192</sup> Energy is required for many basic goods to enter the market, which take up significant proportions of income expenditures of the poor. Additionally, as energy is a basic necessity itself for lighting, cooking, and heating, changes in price more adversely affect the poor. In the contexts of South Africa and Mexico, the structure of the energy market is especially damaging to low-income citizens. The electricity and energy markets are essentially monopolies, and the energy sources are very carbon-intensive, especially in South Africa.<sup>193</sup> Thus, the monopolies would incur added carbon taxation costs, and in absence of significant competitor, these energy companies will pass on these new costs to their customers, affecting their lowest income customers most significantly.

In places with GINI coefficients hovering around 50 and going as high as 65, implementing a regressive tax, no matter how well intentioned, raises significant questions about social justice. Climate change may affect the poor disproportionately, especially in South Africa and Mexico, but its solutions should not add insult to injury. Because of these attributes of socio-economic structure, South Africa, Mexico, and any other country with significant poverty challenges, must consider different policy options for the carbon tax. A carbon tax policy that privileges greenhouse gas reductions over reductions in inequality, and that prioritizes the preferences of businesses over the needs of the poor is ethically dubious. Thus, routes to a carbon tax policy should be designed so that the goals of greenhouse gas reductions, addressing income inequality, the plight of the poor, and minimizing effects on the economy at large.

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<sup>192</sup> Hsu, *The Case for a Carbon Tax*. 124

<sup>193</sup> Mexico's energy reform is likely to change the structure of the domestic market, but such an extreme restructuring may take years to have any effect on customers.

The use of the revenues of the carbon tax is particularly interesting from a perspective of effects on equity. Tax exemptions for the poor would be a possible option, but as both the carbon taxes in South Africa and in Mexico are imposed at the point of sale of fossil fuels, such an exemption would probably happen in the form of a tax return or decrease in income tax for the lowest brackets. Thus, as the carbon taxes are constructed, it would be logistically difficult to address equity concerns without first collecting revenue.

### *Developed Country Precedent*

What are the characteristics of carbon taxes in the developed countries that pioneered this policy? As evidenced in table A.1 from the appendix, carbon taxes in the developed world are most frequently accompanied by tax breaks. Many of these tax cuts are aimed at reducing the impact on the lowest income groups, through mechanisms such as reductions in income taxes, payments or tax rebates to households, and reductions in individual employee social security payments. Others focus on minimizing the effects on businesses; this group of tax cuts is more varied. The most common form of revenue recycling to benefit business is reductions in employer payments for social security. Some governments, like Australia and Japan, also designed the tax so that revenues would help businesses with energy efficiency and carbon emissions reductions.

Although some revenue recycling in developed countries was targeted for low-income households, low-income households in most of these countries have incomes multiple times that of the lowest income groups of South Africa and Mexico. For example, the income threshold for tax benefits from the Australian carbon tax applied to individuals making \$23,500 and for families making \$27,400 a year. In comparison, the lower limit of the 2011 South African national poverty line was \$425 USD, and the upper limit of the

poverty line was \$633 USD, with 45% of the South African population falling under this level of extreme poverty.<sup>194</sup> Mexico's poverty line is also considerably lower than that of the other countries with carbon taxes at \$2,124 USD for those living within cities, and \$1,356 USD for rural citizens.<sup>195</sup> In Mexico, 47.5% of the population survives off an income below this poverty line.<sup>196</sup>

### *Alternatives for South Africa and Mexico*

In order to understand the different policy options and their effects on middle-income countries, I return to the van Heerden article mentioned in Chapter Two. It is clear that without redistributing the tax revenues to other tax breaks, the carbon tax, had largely negative effects on the South African economy, such as reducing overall consumption, raising production costs, increasing prices, and also encouraging development of alternative energy sources. His analysis systematically reviews three different revenue-recycling methods: decreases in income taxes among all brackets, an indirect break on taxes like the value added tax and the sales tax, and a decrease in the food tax. As mentioned before, the authors found that a carbon tax, if revenues were appropriately recycled, could indeed achieve a "triple dividend," a decrease in carbon emissions, an increase in GDP, and a decrease in poverty.<sup>197</sup> Revenue recycling through a break in income tax, the most common revenue recycling method of the wealthier countries, did decrease emissions somewhat, but these reductions in emissions were also accompanied by a reduction in GDP and increase in poverty. The indirect tax break had a similar effect. The food tax break however, yielded a

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<sup>194</sup> "Poverty Trends in South Africa: An Examination of Absolute Poverty between 2006 and 2011," (Pretoria, South Africa: Statistics South Africa, 2014). *need to explain how the different national poverty lines are calculated*

<sup>195</sup> Cristopher Wilson, "Mexico's Latest Poverty Stats," ed. Gerardo Silva (Washington, DC: Woodrow Wilson International Center for Scholars, 2013). 2

<sup>196</sup> Ibid. 3.

<sup>197</sup> van Heerden, "Searching for Triple Dividends in South Africa: Fighting Co2 Pollution and Poverty While Promoting Growth."



triple dividend of greater decreases in carbon emissions than the other options, increase in GDP, and decrease in poverty. This is likely because any food tax is even more regressive than a carbon tax (which, as previously mentioned, is essentially an energy tax in South Africa) and food consumption may not be as linked to carbon emissions as consumption of manufactured goods.

	<b>Percentage of income spent on food</b>	<b>Percentage of income spent on electricity, gas and other fuels</b>
<b>Lowest decile</b>	32.7	6.4
<b>Highest decile</b>	4.5	1.7
<b>Black African</b>	16.8	3.1
<b>Coloured</b>	16.4	3.3
<b>White</b>	5.2	2.0
<b>Female</b>	17.7	3.2
<b>Male</b>	11.1	2.4

**Table 4.2:** Proportion of income spent of on food and electricity by selected demographic groups

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People in the lowest income decile of South Africa spend around on third of their income on food, and only 6% energy. Even among the average of women and men, they spend 17.1% and 11.1% of the income on food (respectively) compared to 3.2% and 2.4% on energy (respectively). However, looking at just the poorest groups and even national averages of percentage of income spent on food versus percentage of income spent on energy doesn't tell the whole story. Energy use by South African varies with income. Poor, rural blacks for example are more likely to use biofuels (firewood and animal dung) than are

<sup>198</sup> "You Can't Eat Electricity: Why Tackling Inequality and Hunger Should Be at the Heart of Low Carbon Development in South Africa."

wealthy urban whites.<sup>199</sup> However, regardless of income level, race, or gender, South Africans tend to spend more on food than energy, and food taxes are clearly, even more regressive than carbon or energy taxes.

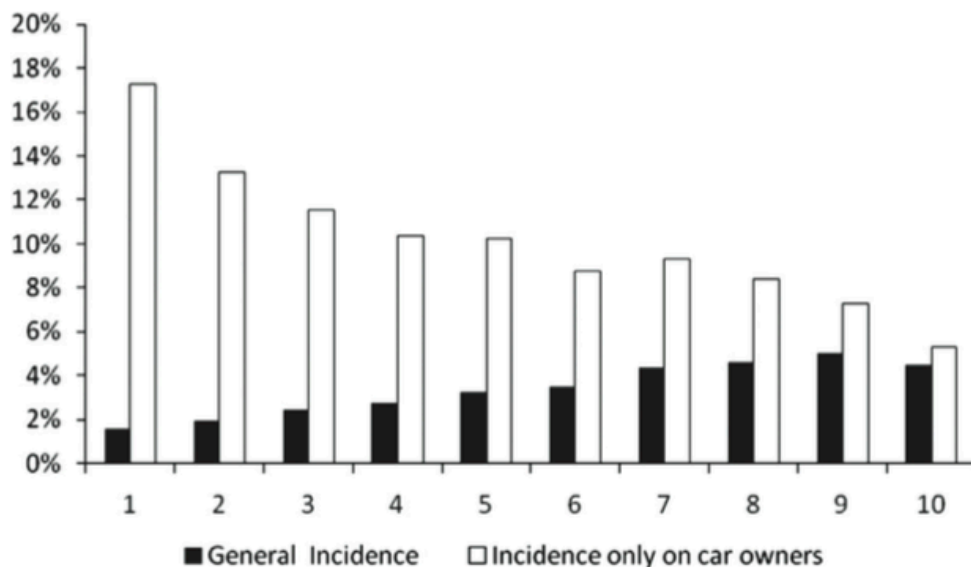
In a simulation of revenue neutrality through decrease in manufacturing taxes (more or less equivalent to a decrease in indirect taxes in the van Heerden study) versus an increase in food subsidies (with the similar effect of reducing food prices as the food tax break in the van Heerden study) Gonzalez found for Mexico, similar results as van Heerden found for South Africa. The food subsidy yielded optimal results because it had a positive effect on equity, unlike the manufactured goods tax break, and also yielded greater reductions in greenhouse gases than the manufactured goods tax break.<sup>200</sup> This is because the welfare impacts of a manufactured goods subsidy are more concentrated in the upper income groups, whereas a subsidy on food has a very progressive effect. Also, because a reduction in price of a manufacturing good will increase demand for it, and manufactured goods consumed by most middle-income Mexicans, have high-embodied carbon.<sup>201</sup> Thus, with a carbon tax in Mexico, again there does not seem to be a trade-off between equity and efficiency.

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<sup>199</sup> "You Can't Eat Electricity: Why Tackling Inequality and Hunger Should Be at the Heart of Low Carbon Development in South Africa."

<sup>200</sup> Fidel Gonzalez, "Distributional Effects of Carbon Taxes: The Case of Mexico," *Energy Economics* 34 (2012).

<sup>201</sup> *Ibid.*



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**Figure 4.1:** Percentage of household expenditures spent on gasoline (incidence) by income decile in Mexico.

### *Carbon Market Bell Curve*

Interestingly, Mexican scholars have demonstrated that carbon taxes in Mexico would have a sort of bell-curve impact on different income groups.<sup>203</sup> This builds off or research done on the ideal gas tax level in Mexico.<sup>204</sup> Only 9% of households in the poorest decile of Mexico require use of liquid fuel, because they might not own cars, or they might not even have access to liquid fuels.<sup>205</sup> In fact, the second highest income decile is the income bracket that spends the highest percentage of their household expenditures on gasoline (Figure 4.1). However, a carbon tax affects more than just gasoline. As 99% of the overall population, and even 97% of the rural population, which can serve as a proxy for the poor population as there are extreme regional, urban-rural income disparities in Mexico, of

<sup>202</sup> Antón, "Optimal Gasoline Tax in Developing Oil-Producing Countries: The Case of Mexico."

<sup>203</sup> Gonzalez, "Distributional Effects of Carbon Taxes: The Case of Mexico."

<sup>204</sup> Antón, "Optimal Gasoline Tax in Developing Oil-Producing Countries: The Case of Mexico."

<sup>205</sup> Ibid.

Mexico have access to electricity, the effects of increases in electrical bills will probably be more acute on low-income people than increases in gas taxes. Gonzalez in his study of the carbon tax demonstrated that the most affected groups would be the middle income ones, because the lowest income groups in Mexico are too poor to consume much in the way of fossil fuels or electricity, middle income groups (third and fourth quintile) consume more energy intensive goods, and the highest income groups, even though they consume the most, consume more low-energy goods than all other groups, and actually benefit from the hike in property values that would occur with a carbon tax.

Presumably, a carbon tax in South Africa might also have the same effect. Poverty is more extreme there, and disparities between rural and urban electricity is much more pronounced than in Mexico. Thus, ability to use fossil fuels is possibly even more limited for the lowest income groups. After all, 15.6% of South Africa's households use wood and animal dung as their primary heating energy source, two fuels not taxed under the carbon tax.<sup>206</sup> The difference between average access to electricity and rural access to electricity is more extreme in South Africa than in Mexico. Around 83% of South Africans have access to electricity, but only 64% of rural South Africans, compared with 94% of urban South Africans, have electricity access (Table 4.3). Because wealth in South Africa is also generally concentrated in urban areas, these numbers illustrate persisting inequalities in access to energy, which might paradoxically leave the poorest populations less vulnerable to the effects of the carbon tax.

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<sup>206</sup> "Energy Usage Infographic: For Cooking," ed. Census 2011 (Pretoria, South Africa 2011).

Country Name	Access to Energy Type	% Of 2010 Population
Mexico	Electricity	99.2
South Africa	Electricity	82.7
Mexico	Electricity, rural	97.5
South Africa	Electricity, rural	64.1
Mexico	Electricity, urban	99.7
South Africa	Electricity, urban	94.3
Mexico	Non-solid fuel	86.1
South Africa	Non-solid fuel	84.9
Mexico	Non-solid fuel, rural	61.0
South Africa	Non-solid fuel, rural	63

**Table 4.3:** Access to electricity and non-solid fuel in South Africa and Mexico by location type.

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Even though the carbon tax is unlikely to affect the extreme poor, energy is a necessary input for those in poverty to move into the middle classes. Making energy more expensive puts poverty reduction efforts in serious jeopardy, unless the policy is made to counteract the increases in cost of energy with decreases of costs in other areas of the economy. Additionally, increases in the costs of energy raise costs of production, which can make South African industry less competitive and manufactured goods more expensive, which would in turn have an effect on the poor and their ability to move out of poverty.

### *Equity Implications of the Carbon tax Proposals*

Given the unique income and energy expenditure structure of the South African and Mexican economies, the developed country revenue recycling schemes of reducing income tax or employee social security contributions are not likely to have much effect on the

<sup>207</sup> "World Development Indicators," World Bank, <http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=world-development-indicators>.

poorest, or even middle-income groups of South Africa or Mexico, as around half of the population falls under the poverty line, and probably does not pay taxes or social security contributions. However, swapping out a regressive tax for reductions in another regressive tax could potentially leave poor South Africans and Mexicans with a lower tax burden than they had before the carbon tax was introduced, giving them more disposable income.

However, neither of these countries chose to recycle the revenues of their carbon taxes through a reduction in food price, be it a tax break or food subsidy. Instead, in Mexico the carbon tax simply disappears into the national budget as part of the new revenues generated by the fiscal reform. Although the larger “Pacto Para Mexico” package includes programs aimed to address social welfare and inequality, it is impossible to determine whether or not the carbon tax and its specific revenues are helping the poor or reducing income inequality in any way. The carbon tax has been designed in a way that the fossil fuels most commonly used by individuals (gasoline diesel, and fuel) as opposed to those favored by industry (natural gas, coal and petroleum coke) actually have the highest tax per unit of carbon (Table 3.1).

Although the South African carbon tax details have yet to be articulated in the final carbon tax bill to go before the parliament in late 2015, there appears to be a strong preference for recycling the tax funds in the form of an electricity tax break. Further, more formal economic analysis needs to be done to make more specific conclusions. Yet, based on available data, it seems that the electricity tax break is not the optimal option for reducing carbon while also reducing inequality. All groups in Table 4.2, including the highest decile groups spend a higher proportion of their income on food than on a bundle of energy expenditures, of which electricity on represents a part. This disparity is more extreme at

lower levels of the income brackets. Additionally, with 37% of rural South Africans lacking access to electricity, this, probably poor, group will not benefit from the revenues of the carbon tax.

The poor in South Africa and Mexico will thus have more barriers to escape destitution until the larger economy can transition away from energy dependence on fossil fuels. This is an admirable and necessary goal for mitigating climate change, but poor people at the individual level are not the decision makers with agency over the carbon content of the energy mix of their country. By softening the impact of the carbon tax to those businesses, heavy industry, electricity providers, etc. that have enough of an impact on energy demand to change the energy paradigm, politicians in South Africa and Mexico limited the efficacy of the carbon tax while putting more stress on their citizens.

### **Poor Politics**

How do these concerns about poverty and equity relate to the larger question of this paper about the politics of carbon taxes? First, we might hope that in democracies, the leaders are trying to make fair and ethical decisions for the betterment of the citizens that elected them, thus it behooves politicians to have an understanding of the policy tools available to them and the trade-offs that come with each one. On a slightly less idealistic note, there are also real political consequences for being sensitive to the distributional effects of a carbon tax on already highly unequal societies. Consumption taxes like carbon taxes have been popular in Latin America because elites have been geographically and racially separated from beneficiaries of their social programs, and thus feel little desire to

fund these programs through direct and progressive taxation.<sup>208</sup> They also can yield political instability. Dramatic increases in energy costs could lead to protests by the urban middle class that will be most affected by these changes. This is a group of people that politicians in developing nations tend to avoid aggravating at all costs, because they are the easiest to mobilize and most likely to escalate to action.<sup>209</sup>

A carbon tax that neglects questions of equity and poverty in South Africa is especially politically problematic, given the complicated history the country has had with equity and environmentalism, and may demonstrate a concerning development in tax politics. During Apartheid, environmental measures primarily took the form of conservation efforts. Although nature parks and reserves tend to be an internationally popular idea, in South Africa, these parks just became another means by which the Apartheid government displaced local people from their traditional lands and practices, this time under the guise of preserving a wilderness “untouched” by man. Apartheid also ensured that electricity and energy access was not equal among races. Electricity lines and distribution systematically excluded poor blacks from access to energy, decreasing their chances for economic advancement, and reinforcing the inequalities between whites and blacks. The carbon tax, as it is currently written, could very well have the effect of favoring business elites, while creating barriers for social mobility for the darker skinned poor and middle classes, under the guise of an environmental measure initiated by elites. In other words, a carbon tax could be reminiscent of Apartheid policies by hurting the economic opportunity of blacks in the

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<sup>208</sup> Mahon, "Causes of Tax Reform in Latin America, 1977-95." 23.

<sup>209</sup> Bates, "Introduction," "Policies toward Cash Crops for Export," and "Rural Demobilization" in *Markets and States in Tropical Africa* (1981), pp. 1-8, 11-29, 108-113 [ER]



name of “protecting the environment,” as Apartheid conservation policies did, and of reinforcing inequality of energy access to poor blacks, like the Apartheid energy policies.

Paradoxically, this also has the troubling result of reversing perhaps the only positive leftover of the Apartheid government: its progressive tax structure. As explained in the introduction, because only whites received social services from the government, white elites were willing to stomach progressive taxes, knowing that only people of their own race would benefit. Thankfully, in the post-Apartheid government, no such assurance exists. However, the behavior of the South African government in initiating the carbon tax suggests new coalition formation based on class. Elites in the DEA and Treasury, who stand to gain professionally by implementing a carbon tax, shelter the business elites from its effects while leaving members of the poor and middle classes vulnerable. It is outside the scope of this paper to demonstrate whether or not class-based coalition making has truly taken force in climate and taxation politics. Nonetheless, this carbon tax places the poor payers at odds with the wealthy beneficiaries, and may yield political instability and certainly ethical concerns.

Although Mexico does not have the same stain on its recent history as South Africa does, there is considerable potential for political backlash. The ruling party for over 70 years has been voted out of the presidency before, and the Mexican public is certainly capable of voting them out again. With the wide-scale discontent of the Nieto administration’s response to disappearances, including the disappearance of 43 students, and ongoing frustration with violence related to the drug trade, politicians will want to avoid policies with disproportionate effects on the urban middle and poorer classes. Increasing energy prices through the carbon tax without a plan for mitigating the tax’s effects on poverty and equity

will probably not improve the political standing of PRI. Because the carbon tax fits within the traditional Latin American taxation focus on consumption tax, and again, elites benefit reputationally from the carbon tax, it suggests a similar pattern of taxation allegiances among the urban elites.<sup>210</sup> Thus, part of the carbon tax's political permissibility is a result of a taxation status quo built off of injustice.

### **Ethical Implications: the Present Poor vs. Future Generations**

In this last section, I will lay some of the framework with which we can begin to consider the social justice issues that raised by South Africa's and Mexico's carbon taxes as they are currently written. This is only a preliminary exploration, and much more focus needs to be brought to this aspect of climate justice in order to come to any semblance of a solution.

Thus far, all of the stakeholders considered in my analysis are those living in the present, but with climate change, there are also future stakeholders to take into account. Climate justice literature not only concerns the present poor, who are more vulnerable to climate change, but also those future generations who will suffer the most if climate change proceeds in a business as usual scenario. Climate justice, as activists that brandish its banner know it, has become the fusion of " 'green' and 'red' (or in the US, blue-green) politics," bringing together environmentalism, social justice, and anti-capitalist thought.<sup>211</sup> However, climate justice, as the more prominent ethicists in the field conceive it, has much more to do with the valuation of the rights of future persons. In neither the social movement nor the

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<sup>210</sup> Patrick Bond, "Politics of Climate Justice: Paralysis above, Movement Below," (Jinju, South Korea: Gyeongsang University Institute of Social Science, 2011); Mahon, "Causes of Tax Reform in Latin America, 1977-95." 23.

<sup>211</sup> Bond, "Politics of Climate Justice: Paralysis above, Movement Below."; *ibid.*5.

ethical approach do scholars of climate justice deal with the conundrum that may be posed by a specific in which the interests of future persons and the present impoverished are incompatible. As van Heerden and others have demonstrated, there is a way to implement carbon taxes such that they decrease carbon emissions, thereby respecting the rights of future persons to a livable climate, and to diminish income inequality, thus respecting the rights of the present impoverished. Such a tax is not yet reality.

This goes back to a fundamental conundrum, whose responsibility is it to address climate change? Is it that of the developed nations, who in partial ignorance filled our atmosphere with CO<sub>2</sub>, or the states currently contributing most to the problem?<sup>212</sup> Ethicists disagree on the details, but there is a “fairly broad consensus among philosophers and ... the majority of the climate policy community that efforts to reduce greenhouse gas emission... should not harm the ability of poor countries to grow economically and to reduce... the widespread poverty their citizens suffer.”<sup>213</sup> As previously mentioned, philosophers do not tend to publish papers on the justice of specific policies.<sup>214</sup> Rather, they are more likely to be critical of suites of policies, such as offsets like the CDM, branding them as the “selling of indulgences” because they allow large developed nations to pay their way out of actually reducing their own emissions.<sup>215</sup> These do not offer great examples of precedence that can be applied to the moral conundrum of the South African and Mexican carbon taxes, as they still focus on the necessity of developed nations to bare the majority of the responsibility.

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<sup>212</sup> Stephen M. Gardineir, "Ethics and Global Climate Change: Introductory Overview," in *Climate Ethics: Essential Readings*, ed. Stephen M. Gardiner (Oxford, UK: Oxford University Press, 2010). 19.

<sup>213</sup> Paul Baer, "Greenhouse Development Rights: A Framework for Climate Protection That Is "More Fair" Than Equal Per Capita Emissions Rights," in *Climate Ethics: Essential Readings*, ed. Stephen M. Gardiner (Oxford, UK: Oxford University Press, 2010). 215.

<sup>214</sup> Lawrence Simon, 28 April 2015.

<sup>215</sup> Bond, "Politics of Climate Justice: Paralysis above, Movement Below." 2. Robert E. Goodin, "Selling Environmental Indulgences," in *Climate Ethics: Essential Readings*, ed. Stephen M. Gardineir (Oxford, UK: Oxford University Press, 2010). 231.

Developing nations are moving on their own, perhaps because government officials wish to improve their reputations, increase the country's ability to access development funds, and to offer more leverage over climate mitigations so that their current poor and future citizens are not as adversely affected as they would be in a business as usual circumstance. Be the motivation selfish or altruistic, moral or political, they are taking action. No matter what the most extreme advocate of differentiated but shared responsibilities may say, it is clear that developing countries cannot proceed with their own "business as usual" if climate change is to be effectively mitigated. Thus, there is virtue to the actions taken by South Africa and Mexico. While the individual contributions of their carbon taxes may be currently quite minimal, once the tax is in place they may be able to increase the price of carbon, and thus more aggressively decrease emissions. Perhaps more importantly, they are putting the pressure on other states to take similar policies. Although Chile is hardly a developing state, it is a non-Annex I party to the Kyoto Protocol and has a long history of inequality, colonial oppression, and economic difficulties. Its carbon tax, passed in September of 2015 and scheduled for implementation in 2018, was likely made possible by the pioneering efforts of South Africa and Mexico in passing their carbon taxes. Now, there is very strong pressure on Brazil to pass a carbon tax should it wish to maintain any reputation of environmental responsibility with three of its competitor states enacting this legislation. Any action that can be made to help Brazil cut down on its emissions, and to bring about action among the highly polluting middle income states, is key if we are to take the rights of future generations seriously.

At the same time, for all of the aforementioned reasons, the carbon tax as it currently exists in these countries is rife with problems and does not respect the rights of the present

poor to be able to elevate themselves out of destitute poverty or the rights of the moderately poor to afford energy that is so necessary for keeping them at a reasonable standard of living. Thus we have rights of groups at odds with each other. One might attempt a utilitarian approach to overcome this impasse.<sup>216</sup> Much of the utilitarian calculation depends on the rate at which the happiness of future persons is discounted. As there are so many more future persons than present South African and Mexican poor, the utilitarian calculation will inherently favor the future persons, and make the carbon taxes, as they are, morally superior to no carbon tax.

Such a calculation does not take into account history and the compounded injustices that the present poor in these two countries face. Those who are most poor and vulnerable to the carbon tax have many other markers that make these people marginalized and disadvantaged. Ironically, the poor in these countries, like the poor in any other developing state, are more susceptible to disasters and larger trends of weather pattern changes than the elite policy makers who enacted the carbon tax. The poor are also overwhelmingly people who have faced historical racism. Africans in South Africa, and people of Indigenous American and African descent in Mexico make up the lower classes and thus will be the most adversely affected by carbon taxation. Further, impairing the ability of the poor to move out of abject poverty and to sustain a livable lifestyle in the present, may ensure that their descendants are also poor, thus harming future generations.

Of course, the levels of taxation are currently so low that these specific taxes may not have significant impacts on future generations or even the present poor. However, if carbon taxes do indeed spread to other middle-income states, and the rates increase while

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<sup>216</sup> Simon.

still protecting large business interests at the expense of the poor, this moral dilemma may become a significant factor of the future of climate legislation. People uninterested in justice do not advocate for carbon taxes. The policy puts a price on something that has always been free – carbon emissions – for the sake of the common good. Yet, if a carbon tax that respects both the rights of the present poor and the future generations (one that would recycle revenue through a food affordability program) is not a political possibility, policymakers, activists, and scholars have to make an informed decision about whose rights are sacrificed, and whose are preserved.

## **Conclusion**

As climate change marches forward, and the contribution of developing countries to the CO<sub>2</sub> levels in the atmosphere grows, it is tempting to blindly laud all climate governance advances made in the global south. However, studies like this that look into the sausage factory of how the carbon tax went from obscure radical suggestion to established policy are important for the success of climate governance. Understanding how the carbon taxes made it to the political mainstream and how interest groups shaped them into the forms they have taken allows scholars and policymakers to assess how the priorities of those in power will manifest themselves in the actual effects of the policy. There are no studies suggesting that making natural gas exempt from Mexico's carbon tax, or providing exporting, energy intensive industry with up to 80% exemption from the South African carbon tax will help domestic GDP. Simply sending the Mexican carbon tax revenues into the general budget, or using the South African carbon tax revenues to eliminate the electricity tax does not ensure that the money generated by the carbon tax will improve conditions of poverty. It is commendable that the bureaucrats and politicians of these countries are willing to take on

the risks of being early movers, and there is evidence to suggest that a carbon tax can achieve the triple dividends of decreasing emissions, increasing GDP, and decreasing inequality, so long as revenues are allocated in a way that directly helps the poor, such as food assistance programs.

There is clearly policy momentum for a carbon tax in non-Annex I countries. Chile passed its own carbon tax in September 2015, and Brazil and China are openly considering a carbon tax of their own.<sup>217</sup> It would behoove these states to learn the lessons of South Africa and Mexico and for South Africa and Mexico to learn from their own mistakes. Laws can change. The carbon tax for Mexico was passed alongside with sweeping reforms that improve social services. All the government has to do to demonstrate to different countries and to their own people that energy is now a bit more expensive, but for just cause, is to specifically allocate the carbon tax to fund social services, especially those related to poverty alleviation. South Africa has an even greater opportunity. At the end of this year, they will be writing the law as it will be enacted in 2016. Rather than blindly follow the trajectory it has taken, South Africa can develop a truly innovative and progressive carbon tax by using revenues for poverty alleviation. Such thoughtful and ethical policy making is surely something worth spreading and could bring us close to a just solution to climate change.

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<sup>217</sup> "State and Trends of Carbon Pricing."

## Appendix

Year of Implementation	Countries	% Of national emissions covered	Sectors covered	Annual Revenue (1 <sup>st</sup> year of taxation)	Revenue Distribution	Tax rate in USD
1990	Finland	F: 15%	Consumers of fossil fuels except electricity, commercial planes and boats	\$750 million	Government budget; Accompanied by separate income tax cuts, reductions employer's social security contributions (SSC) <sup>1</sup>	\$35 / t CO <sub>2</sub>
	Netherlands	--	--	\$4.8 billion	Income tax cut; reductions in employer's SCC; corporate tax cut; climate change mitigation <sup>2</sup>	~\$20 / t CO <sub>2</sub>
1991	Norway	N: 50%	All consumption of mineral oil, gasoline, natural gas	\$900 million	Government budget, income tax reductions	\$4-69 / t CO <sub>2</sub>
	Sweden	25%	All fossil fuels used for motor fuels and heating	\$3.7 billion	Government budget; Income tax reductions; employee SSC reductions	\$168 / t CO <sub>2</sub>
1992	Denmark	45%	Oil gas and electricity	\$905 million	Environmental subsidies (40%); income tax reductions employers SSC reductions (60%)	\$31 / t CO <sub>2</sub>
1997	Costa Rica*	--	Sale of all hydrocarbons	--	Sustainable development incentives for landowners <sup>3</sup>	3.5% tax on sale of all hydrocarbon fuels
2008	Switzerland	30%	Fossil fuels for heating and lighting	\$736 Million <sup>4</sup>	1/3 energy efficiency support; 2/3 Tax breaks	\$68 / t CO <sub>2</sub>

<sup>1</sup> "Carbon and Energy Taxes (Finland)," Economic Instruments in Environmental Policy, [http://www.economicinstruments.com/index.php/climate-](http://www.economicinstruments.com/index.php/climate-change/article.php?id=10)

<sup>2</sup> <http://blogs.ubc.ca/luluevafre525/2012/03/21/carbon-tax-policy-brief-for-netherlands/>.

<sup>3</sup> "Putting a Price on Carbon with a Tax," World Bank, [http://www.worldbank.org/content/dam/Worldbank/document/SDN/background-note\\_carbon-tax.pdf](http://www.worldbank.org/content/dam/Worldbank/document/SDN/background-note_carbon-tax.pdf).

<sup>4</sup> "Options in Recycling Revenues Generated through Carbon Pricing: How 16 Governments Invest Their Carbon Revenues," in *Climate Change* (London, UK: International Council on Mining & Metals, 2013).



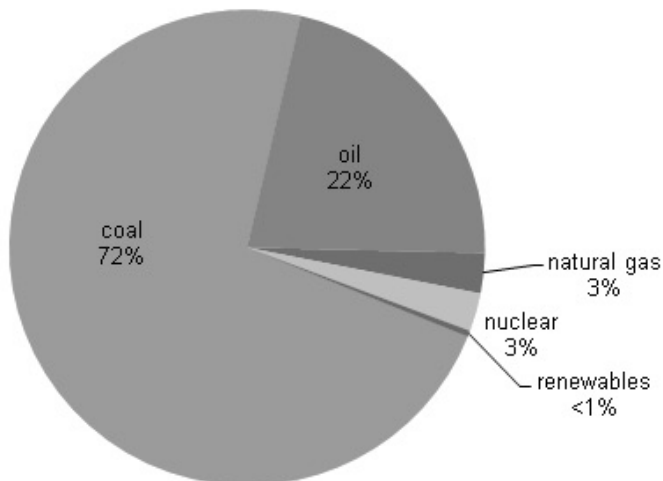
2010	Iceland	50%	Gas oil, diesel, gasoline, heavy fuel petroleum, gas petroleum and other gaseous hydro carbons	\$28 Million <sup>5</sup>	Government Budget <sup>6</sup>	\$10/ t CO <sub>2</sub>
	Ireland	--	All consumers of natural gas and mineral oil	--	Government budget	\$20 / t CO <sub>2</sub>
2012	Australia**	60%	All large emitters from major industries	\$6.7 billion	50% to income tax breaks and payments to households; 40% to emissions reductions programs for business <sup>7</sup>	A: \$24 / t CO <sub>2</sub>
	Japan	70%	All fossil fuel use w/ exceptions for	\$3.3 billion	Renewable energy and energy efficiency programs <sup>8</sup>	\$2 / t CO <sub>2</sub>
2013	UK	25%	Fossil fuels used for electricity generation	2001: \$1.9 billion	Employer SSC reductions	\$15.75 / t CO <sub>2</sub>
2014 Mexico: Passed 2013	France	35%	Natural gas, oil, heavy oil not already covered by EU ETS	--	Renewable Energy R&D	\$10 / tCO <sub>2</sub>
	Mexico	40%	Fossil fuel sales and import by manufacturers	--	Government budget	\$1-\$4 per t CO <sub>2</sub> depending on fuel type
2016 (passed 2012)	South Africa	60%	All stationary direct GHG emissions	--	Reductions in electricity levy (planned)	\$12 / t CO <sub>2</sub>
2018 (passed 2014)	Chile	--	Operators of boilers and turbines with a > 50 MW capacity	--	--	\$5/ t CO <sub>2</sub>

<sup>5</sup> "Carbon and Energy Taxes (Finland),"

<sup>6</sup> "Selected Carbon Tax Approaches: A Survey," Concensus Building Institute, [http://www.cbuilt.org/sites/default/files/1stRT\\_4.0\\_Carbon\\_tax\\_rate\\_table.pdf](http://www.cbuilt.org/sites/default/files/1stRT_4.0_Carbon_tax_rate_table.pdf).

<sup>7</sup> Jeremy Carl, "Revenue-Neutral Carbon Taxes in the Real World: Insights from British Columbia and Australia " in *Task Force on Energy Policy*, ed. David Fedor (Palo Alto, California: Hoover Institution Stanford University).

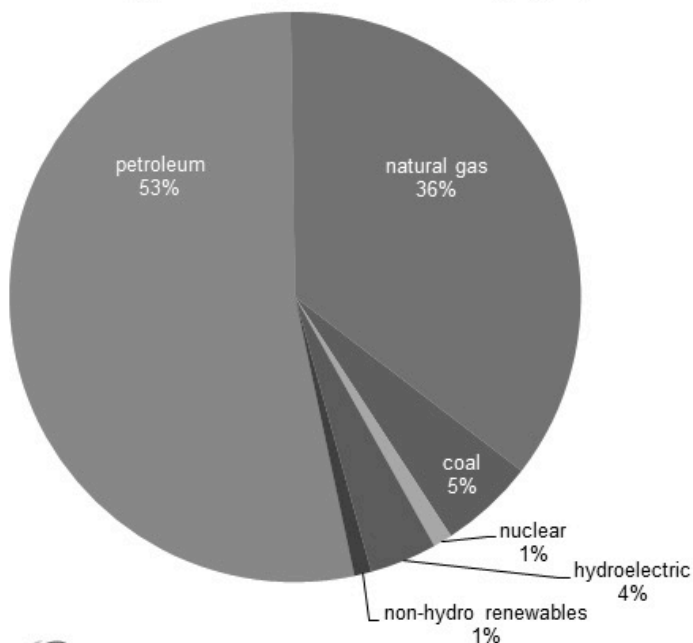
<sup>8</sup> "Carbon Tax (Tax for Climate Change Mitigation)," Ministry of the Environment, [http://www.env.go.jp/en/policy/tax/env-tax/20120814b\\_ct.pdf](http://www.env.go.jp/en/policy/tax/env-tax/20120814b_ct.pdf).



**Figure A.1:** Total primary energy consumption in South Africa 2012. Excludes biomass.

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Total energy consumption in Mexico by type, 2012



eia Source: U.S. Energy Information Administration

**Figure A.2:** Mexico's 2012 energy consumption by type

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<sup>226</sup> "South Africa".

<sup>227</sup> "Mexico," US Energy Information Administration.

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