

Disaster Capitalism on Puerto Rico:

Causes and Consequences of the Privatization of Puerto Rico's Public Electric
Authority after Hurricane Maria

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ABSTRACT

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After the Spanish American War, the United States established full control over the Caribbean island of Puerto Rico and several small islands surrounding it. Unlike other territories outside the continental United States, Puerto Rico was never offered a path to statehood. Under U.S. policy and control, the island, its government, and that debt held by the government and its many public authorities like PREPA (the Puerto Rico Electric Power Authority) grew over time.

This thesis investigates the causes and consequences of the privatization of PREPA (the Puerto Rico Electric Power Authority), especially in the aftermath of Hurricane Maria. Examining the privatization of this crucial government service in the context of the Puerto Rico's unique status within the United States and its history as an unincorporated commonwealth territory, the specific measures of success and failure for an electric power utility, neoliberal policy that favors privatization and contractors, and the intersection of this neoliberal policy and the practice of disaster capitalism uncovers a complex story of policymakers, businessmen, union leaders, and government officials fighting to control an ailing service provider.

By describing the current state of PREPA and the unique political landscape on Puerto Rico, this thesis considers the environmental, political, economic, historical, and social impact of the privatization of this public electric utility, answering the following questions: What role does Puerto Rico's unique colonial legal environment play in PREPA's decline, if any? Is PREPA simply a "failed experiment" of a public energy utility in the United States, or are other factors to blame for its current sub-par state of operations, lack of financial stability, and the resulting privatization focus of its managers and other political leaders on the island? What does the current state of PREPA reveal about federalism and neoliberal political ideology? Synthesizing the answers to these questions and many others through research on both government and private sector documents and across disciplines, this thesis accurately portrays different motivations for the privatization of PREPA and the impact that such a decision will have on Puerto Rico and its population.

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I would be remiss if I did not thank the many journalists, podcast hosts, and bloggers that used their platform to call attention to the Puerto Rican condition and wrote stories both cited in this project or read for background research. A special thank you goes to Puerto Rican journalists writing for Puerto Rican publications for their commitment to the truth and their graceful coverage of a seemingly-ever changing history in which key details are often anything but clear.

I also would like to acknowledge the resiliency in the face of great adversity that Puerto Ricans have demonstrated for generations that inspired this project when I worked through some of the most challenging portions. I hope that this project particularly celebrates the hard work and sacrifice of the islands' community organizers, who in after Hurricane Maria were and still are literal beacons of light in an otherwise dark landscape.

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Introduction

Hurricane Maria made landfall on Puerto Rico in September of 2017 and made history as one of the most costly natural disasters in recent memory, devastating the entire island. Just a few months later in late January of 2018, Governor Ricardo Roselló announced the privatization of PREPA (the Puerto Rico Electric Power Authority), responsible for electricity generation, transmission, and distribution on the entire island. The privatization of one the United States' largest public utilities serving more than three million people on Puerto Rico is no accident, nor did it happen overnight. Neither is PREPA the first or only nationalized company to be turned over to private hands, particularly in Latin America and especially in the wake of a disaster. Investigation into the causes of privatization and the probable consequences for all stakeholders involved, including ratepayers, government officials, union leaders, financial oversight board members, and private-sector veterans, reveals a powerful political undercurrent with hundred-year-old roots.

Several key questions informed this analysis of PREPA's story. First, what role does Puerto Rico's unique colonial legal environment play in PREPA's decline, if any? Studying Puerto Rico's history as an unincorporated commonwealth territory and understanding its complicated legal relationship with the United States defined through a hundred years of policy provides necessary context on PREPA's history and clarifies the origins of many of the challenges it faces.

Next, is PREPA simply a "failed experiment" of a public energy utility in the United States, or are other factors to blame for its current sub-par state of operations, lack of financial stability, and the resulting privatization focus of its managers and other political leaders on the island? Public electric utilities are government agencies, which means a wealth of detailed information is available to the public. Taking advantage of government documents, published contracts, financial statements, and past audits of PREPA means that the authority can be compared to other public electric utilities. A deep analysis of PREPA's projects and financials

will show that PREPA faces certain obstacles other public electric utilities are not confronted with and divulge the true sources of its shortcomings as well as the impetus to privatize the public authority.

Finally, what does the current state of PREPA reveal about federalism or neoliberal political ideology, and why does it matter? Is PREPA an isolated case of privatization? If not, to what extent was it informed by neoliberal, free-market policies? Telling the story of PREPA's decline from a perspective that takes into account an economic school of thought so powerful that it surpasses party lines and even oceans offers important lessons for other national authorities, especially those in disaster-stricken areas.

The following discussion is principally informed by official government reports, existing and potential contracts with private organizations (for example, Whitefish Energy), analyses and audits conducted by third-party contractors, and PROMESA (Puerto Rico Oversight Management and Stability Act) publications. These sources provide trustworthy hard data, like a history of electricity outages and their magnitude, or a description of the sorry-state of much of PREPA's infrastructure. Also important to this paper are U.S. legislation and judicial decisions, which are well documented and often reflective of the time period in which they were written, shining a light on historical attitudes toward Puerto Rico, its government, and its citizens. This paper also calls on past academic studies of the subject, citing commentary on often abstruse legal documents and their specific application to Puerto Rico.

The most crucial sources of information that this paper calls upon are compiled by established periodicals, both Puerto Rican and mainland publications. These periodicals divulge important information behind the policies and statements made by current and past Puerto Rican executive administrations, PROMESA constituents, PREPA's executive, and UTIER, the Union of Workers in the Electricity and Irrigation Industry and each of these actors' intentions or interests.

There are notable lacunae in this investigation. Although much information is accessible to the public, powerful stakeholders may not have sanctioned or encouraged the collection of other important data, especially in the aftermath of Hurricane Maria. The existence of these lacunae begs the question: why is this information not available? In some ways, these omissions on their own are important observations on the political motivations of those in power.

While many have written on the topic of PREPA before, this paper is distinct for its thoroughness. Few other accounts that mention PREPA's decline have focused on the entire situation PREPA is faced with, both internally and externally. Instead, these articles, which became useful sources that informed this project, focus on only one aspect: the impact of Puerto Rico's debt or its tax policy or PREPA's managerial myopia or Hurricane Maria or the failure of contractors, rather than all of these challenges at once. Not only does this thesis thoroughly address all of these items, but it notes the important interaction between them that are facilitated by key players in the government, private sector, or PREPA itself.

This thesis is an in-depth dive into the historic, political, economic, social, and environmental factors that ultimately led to the decision to privatize PREPA. The key to understanding PREPA's fate is to understand PREPA's history and the distinct environment in which it functions. The authority is a complex and sprawling organization with many responsibilities and capacities that have changed shape over the years. PREPA's history, from the authority's inception to its current financial, operational, and managerial shortcomings, ought to be understood in the greater context of Puerto Rican history and its themes of colonialism, debt, and policies incentivizing non-Puerto Rican businesses on the island.

Part I: The Story Until Now

Puerto Rico – The Colony

Situated at the threshold of the Caribbean Puerto Rico was a crucial agricultural and military outpost that Spain did not want to lose (Appendix A). After a series of uprisings in 1897, however, Puerto Ricans briefly won autonomy under Spanish monarchial rule in exchange for backing the newly restored but struggling Spanish monarchy. But this autonomy did not last long. After an abrupt military invasion, the United States occupied the island, and Puerto Rico has been an atypical part of the nation ever since. The seizure of Puerto Rico, legitimized by the Treaty of Paris that ended the Spanish-American war in 1898, ended a brief period in which Puerto Rico enjoyed arguably the most autonomy in its history since the arrival of the Spanish.¹ It was during this brief chapter of autonomy before U.S. rule that the seeds of organized labor on Puerto Rico were planted when laborers from the docks to the railroads to the valuable sugar plantations organized and rose up against *hacendados*, the merchants and landowners. Since this time, labor activism has always been a vocal and present part of the Puerto Rican political landscape.²

At the turn of the twentieth century when it acquired Puerto Rico, the United States still felt the frenzy of Manifest Destiny and was eager to prove itself on the world stage. This fervor for expansionism set the scene for greater influence in Latin America (construction of the Panama Canal would begin just a few years later). Having defeated Spain, the United States picked up the territories of Puerto Rico, the Philippines, and Guam. Of the trio, Puerto Rico and Guam are still under United States sovereignty. From Denmark, the United States bought the islands neighboring Puerto Rico that would later become the United States Virgin Islands in 1916. Today, the Virgin Islands are an unincorporated territory like Puerto Rico and share

¹ Dietz, "The Puerto Rican Political Economy," 4.

² Cesar J. Ayala and Rafael Bernabe, *Puerto Rico in the American Century : A History Since 1898*, 15-17.

Puerto Rico's symptoms of economic inequality, including a massive debt. Although newly acquired Puerto Rico was a perfect fit for turn-of-the-century politics, the governance of these new colonial holdings, known as the Insular Cases, raised significant social, constitutional, and economic questions for the newly emerged world power: Would the new territories be left independent or annexed? Would the new residents of these far off lands be citizens? If so, would they pay taxes?

Unsure how to answer these challenging questions, the United States chose to resolve these issues by following the examples of European colonialism: appointing U.S. leadership, applying U.S. laws to the island, and restricting Puerto Rico's ability to make treaties or establish its own taxes or tariffs. In 1900, the United States attempted to clarify its turbid relationship with Puerto Rico by passing the Foraker Act. Part of the Foraker Act established a civilian government on the island comprised of a governor, cabinet, and supreme court – all installed by the president of the United States. Another part of the Foraker Act was a temporary tariff on goods imported from Puerto Rico, designed to protect United States sugar and tobacco growers. By both organizing the structure of government on the island and placing a tariff on goods coming from Puerto Rico, the United States “both affirmed U.S. rule over Puerto Rico *and* defined the island as foreign territory.”³ This attitude of quasi-colonialism, in which the United States simultaneously exploited Puerto Rico for its strategic geographic position, natural resources, and labor force but neglected to grant it a path to statehood or other benefits of union membership laid the foundation for an unequal relationship that persists to this day. The legacy of the Foraker Act, especially the precedence of power that it granted to the president of the United States, should not be underestimated. 116 years later, a new law known as PROMESA (Puerto Rico Oversight, Management, and Economic Stability Act) took effect, in which the president of the United States yet again installed a board to oversee the governance of Puerto Rico.

³ Ibid., 26.

Another law that sought to define Puerto Rico's relationship with the United States while still recognizing the island and its residents as foreign to the United States was the Jones-Shafroth Act of 1917, particularly designed to emphasize the new colony's military importance and named for two Congressmen from Virginia and Colorado, respectively. After more than twenty bills for citizenship had been proposed prior, the Jones Act of 1917 finally granted U.S. citizenship to all Puerto Ricans. Citizenship was something President Taft had stubbornly supported only with the condition that it be "entirely disassociated from any thought of statehood."⁴ President Wilson later signed the Jones Act of 1917 into law. It also conveniently made Puerto Rican men eligible for the draft just in time to bolster the United States presence in World War I. Again, in a colonial relationship planned to the advantage of the United States, Puerto Ricans were only served citizenship because it came with the privilege of being drafted on the side. Both the Partido Unión, favoring statehood, and the Partido Republicano, favoring independence, viewed the The Jones Act of 1917 negatively because it blocked both parties' theoretical objectives. Citizenship without a path to statehood did not give Puerto Ricans political equality within the United States, and it also raised another obstacle to independence.⁵

Throughout his accomplished career, President Taft's political positions gave him enormous sway over Puerto Rico's relationship with the island's new owners, the United States. Shortly after the Spanish-American War during the McKinley administration, Taft was appointed as Governor of the Philippines to crush the anti-United States rebellion there, so he had long been involved in representing the strong arm of the mainland in colonial and insular affairs before becoming President. Years later, as Chief Justice of the Supreme Court, Taft cemented his legacy of denying Puerto Ricans the constitutional right to a trial by jury that they otherwise merited, stating that "the Porto Ricans, trained to a complete judicial system which knows no juries, living in compact and ancient communities" could "move into the United States

⁴ Torruella, "Ruling America's Colonies," 75.

⁵ See note 2, 57-59.

proper...to enjoy all political and other rights.”⁶ The United States constitution, apparently, did not “follow the flag,” and the desire for autonomy and separatism only increased on Puerto Rico in the wake of these decisions. The Anglicization of the island’s written name to better-fit American English pronunciation is one symptom of colonialism that has faded, but Taft’s legacy persists to this day.

The Foraker Act and the Jones Act of 1917 are two of the most influential colonial policies that answered the United States’ questions of governance, and they are very much a product of their era. These laws emerged at the same time Jim Crow surged and fully institutionalized in the South. Racial prejudice informed colonial projects and policy. The racism enshrined in these decisions is a clear example of a territorial rulings designed to enforce racial hierarchy and inequality. Through these important pieces of legislation, the United States decided what its relationship with Puerto Rico would be. The United States exerted its economic influence and interest on Puerto Rico yet hesitated to formalize its colonial empire, leaving Puerto Rico in limbo. Though eager to Anglicize its hemisphere through religion and custom, the United States could not yet bring itself to ingest a population that looked different and spoke a different language to proclaim those people as full Americans, so it drew up statutes that preserved segregation of races and economic inequality and created a system in which it could take advantage of Puerto Rico that has perhaps outlasted the racist and unjust environment in which it was conceived.

Despite its significant population, U.S. citizens on Puerto Rico today still do not have the same rights as other U.S. citizens in any state. At once a valuable yet severely underserved part of the country, Puerto Rico and the problems it faces today can be traced back to its unique place in the union. In 1952, the Constitution of the Commonwealth affirmed the U.S. federal statutes that had preceded it, but though Puerto Rico ceased to be a territory constitutionally, it

⁶ Balzac v. People of Porto Rico, 258 U.S. 298 (1922).

remained not a state, sparking unrest across the island.⁷ The Constitution of the Commonwealth was the result of political organization across the island and Puerto Rican aspirations for more autonomy. From that time on, Puerto Rico's official status in English is that of an unincorporated organized territory with a commonwealth constitution. In Spanish, it is known as El Estado Libre Asociado de Puerto Rico, or, "the Free Associated State of Puerto Rico."

Currently, Puerto Rican citizens cannot vote in the Presidential election.⁸ Lack of a voting member in Congress places more than three million residents without adequate representation at the federal level and leaves the territory victim to the whims of Congress, since it can neither enact, vote on legislation, nor determine its own budget. Tax laws on Puerto Rico consistently squeeze a poor and ever shrinking base while granting corporations the same privileges they would have if they were foreign companies. Culturally and racially diverse as it may be, Puerto Rico still languishes in poverty with a household income below \$20,000, ranked lower than even the poorest state, Mississippi.⁹ Overall, the neocolonial legal architecture that defines the relationship between Puerto Rico and the United States has proved expensive for the islanders, who on top of it all buy electricity at a higher price than any other state besides Hawaii from the only available source: the government-run monopoly PREPA (the Puerto Rico Electric Power Authority).¹⁰

History of PREPA

By the early 1940s, Puerto Rican desire for autonomy again pressured mainland-appointed officials to begin compromising, and self-determination supervised by U.S. officials gradually emerged in the form of public institutions. It was in this political environment that PREPA was born. PREPA as it exists today was founded in 1941 as the result of large

⁷ See note 2, 162

⁸ See note 4 above, 82-3 (discussing Puerto Rican democratic representation).

⁹ U.S. Census Bureau, "Income in Puerto Rico Holds Steady After Recession."

¹⁰ Laris Karklis and Samuel Granados *Analysis | After Hurricane Maria, Much of Puerto Rico Is Still in the Dark*, The Washington Post (Oct. 11, 2017), <https://www.washingtonpost.com/graphics/2017/national/puerto-rico-hurricane-recovery/>

Depression-era investments into Puerto Rico's public infrastructure to reduce unemployment and energize the island and was supported by the Partido Popular Democrático (PPD) and its leader Luis Muñoz Marín. The entity was known at the time as the Puerto Rico Water Resources Authority (PRWRA), its eponymous title referring to the main hydroelectric source of electricity used on the island.¹¹ The creation of this Puerto Rican agency and its responsibilities were “instrumental in trans-forming the colonial system from one framed by a paradigm of relief to one of long-term socioeconomic reconstruction. These changes were not imposed on Puerto Rico from above, but rather designed and developed on the island.”¹² In contrast from previous policies handed down to the island's government, either as mandates or gifts from the mainland, the creation of PRWRA and the appointment of a Puerto Rican official later on as head of the agency represented a transition to Puerto Rican led initiatives created by and for the people of the island, modeled after the Tennessee Valley Authority. A Puerto Rican electrical engineer named Antonio Lucchetti was instrumental in the creation of PRWRA when he testified before the U.S. Congress in 1940. Lucchetti is one of the most influential local actors in PREPA's history and an example of a mainland, U.S.-educated official overseeing reconstruction projects on the island. Lucchetti's testimony reveals the questions at the core of PREPA as an organization. In it, Congressmen ask Lucchetti if the true intention of PRWRA is to compete with private electric utility corporations. In response, Lucchetti answers that Puerto Rico was fighting to preserve their own system, adding that private utilities “wouldn't build a line half a mile long to reach a farmer.”¹³ These two themes of a public authority restricting the free market while providing electricity to rural populations will define PREPA's history and were a crucial part of its inception as PRWRA. In breaking with traditional colonial emphasis on temporary,

¹¹ “Historia.”

¹² Geoff Burrows, “Rural Hydro-Electrification and the Colonial New Deal: Modernization, Experts, and Rural Life in Puerto Rico, 1935–1942,” 297.

¹³ *Ibid.*, 294.

piecemeal solutions, the creation of PRWRA encouraged other long-term projects with social benefits on the island.

PRWRA slowly expanded its reach on the island and acquired other smaller municipal energy companies. As a public agency, PRWRA's chief incentive was providing reliable, low-cost power to residents without lining its own pockets with profits, and originally the public utility did so by harnessing the power of the island's natural resources. Later, PRWRA transitioned toward other fossil fuels.¹⁴ In 1974, in accordance with the development of refineries and the fossil-fuel industry on the island and before conflict in the Middle East restricted access to oil, the Aguirre Thermoelectric Plant, now a problematic and expensive asset, first began generating power (see below). By 1974, "petroleum and its derivatives were responsible for 98% of the electricity used on the island, while water represented a mere 2%," according to PREPA's own website.¹⁵ The lack of power generation diversification led to higher prices during the 1973 oil crisis in the United States, and cost of living on the island and electricity rose steeply. It was in this environment that the Government Development Bank first started issuing bonds to offset a severe economic slump.¹⁶ No longer leveraging water resources as it once did, the authority later changed its name to PREPA in 1979.

The (Other) Jones Act

This switch to a system entirely dependent on fossil fuels had several motivations, including the Merchant Marine Act of 1920, also confusingly known as the Jones Act. Attributed to Senator Wesley Jones of Washington, this law ensures that United States domestic shipping lanes are only served by ships that have American crews, display an American flag, and were built in the United States. These U.S. approved ships are guaranteed to comply with U.S. safety regulations and encourage U.S. businesses. Proposing this legislation, Senator Jones

¹⁴ See note 11.

¹⁵ See note 4 above.

¹⁶ "Government Development Bank for Puerto Rico."

intentionally guaranteed that the newly acquired territory of Alaska would be reliant almost exclusively on importing and exporting from the closest domestic port – Seattle, but the legislation has had effects on other parts of the United States even further from the mainland, including Puerto Rico. Under this ratified cabotage, certain goods are harder to source and become more expensive to ship to Puerto Rico, especially those that don't originate in the United States and are unloaded in a non-Gulf port. For Puerto Rico, one of those goods is fuel for energy generation. For example, a foreign ship originating in Venezuela cannot unload oil in San Juan, take on other cargo while there, and then proceed to another United States port. Because goods shipped between U.S. ports must be done so on U.S. ships, few international tankers stopover at Puerto Rico before or after they visit the continental U.S. That Venezuelan oil would have to first pass through one of the fifty states and be unloaded and then reloaded onto a different U.S. flagged and manned ship to get to Puerto Rico. In short, it is hard for fossil fuels to arrive on the island, much less find their way to processing centers or generators.

Despite these expensive provisions, PREPA has relied on imported petroleum for energy generation since its gradual switch away from hydroelectric power. The transition to petroleum happened long after the Merchant Marine Act was legislated in 1920 and by the time the ramifications of the Jones Act became clear, there was already an expensive and fossil-fuel-reliant electric infrastructure on the island. Puerto Rico, though rich in other resources, is barren when it comes to fossil fuel and has not been blessed with promising petroleum or coal deposits or an abundance of natural gas. All electricity generation depends on imported sources of fuel, and petroleum is simply the cheapest option given the infrastructure that was built around it. The U.S. Energy Information Administration reports that as of 2014, almost 75 percent of all energy used in Puerto Rico comes from petroleum products¹⁷, and PREPA itself boasts an abnormally large 53.3 percent of energy generated from oil when compared to other present-day public or even private electric utilities.

¹⁷ “Puerto Rico Territory Energy Profile.”

Although the Jones Act made it expensive to import petroleum, it is actually part of the reason why petroleum is so crucial to PREPA's operations as opposed to coal or natural gas, which are even harder to import. In order to be transported to Puerto Rico, natural gas, now an affordable energy staple in most of the United States, must first be liquefied on the mainland, shipped in accordance with Jones Act stipulations, sublimated again into useable form on Puerto Rico, and then piped and transmitted across the hilly island. This process is prohibitively expensive, especially because "currently no Jones Act-eligible tankers are capable of carrying LNG. To transport LNG from a West Coast port such as Oregon to Hawaii would require building a much more expensive American ship."¹⁸ Hawaii, of course, is vulnerable in many of the same ways as Puerto Rico under the Jones Act. Ships capable of fulfilling this niche in the world market do exist and perhaps would gladly take on the added business, but they are not American-flagged ships compliant with the Jones Act. Unlike a continental electrical grid system that has the added safety net of connecting to other grid networks during extreme stress or outages in previously negotiated agreements, Puerto Rico's grid's boundaries begin when the ocean does. Because it is an island, Puerto Rico cannot simply plug into another grid and purchase power when it needs to. For PREPA, petroleum remains the best fossil fuel option, and that means the overall capacity and consumer price of electricity is dependent on the global petroleum market. When political and environmental winds shift, so do oil prices, and PREPA is often abruptly forced to accommodate higher input costs.

Yet another recent consequence of the import restricting Jones Act is that it prevented much needed aid from flowing into the island in the aftermath of Hurricanes Irma and Maria. A week after the second Hurricane made landfall on September 28, President Trump approved a temporary waiver of the act so that food, water, fuel, and other basic necessities could be quickly be redistributed. With power down, many waited in line for hours at gas stations to get fuel for backup generators, meaning that demand for fuel was even higher than normal. The waiver only

¹⁸ Thomas Grennes, "LNG Offers Another Reason To Scrap Obsolete Jones Act."

lasted ten days, however, and it called into question on a much larger scale the ramifications of the Jones Act, begging the question of whether or not Puerto Ricans ought to be forced to pay higher prices for everyday goods at all, let alone throughout the recovery of a massive natural disaster.¹⁹ To this day, seven months after the storm, there are communities in Puerto Rico without power.

Though it has strong free-trade minded opponents like Senator John McCain, defenders of the Jones Act cite the importance of national security, business opportunities for San Juan and other U.S. ports like Mobile, and the fact that Puerto Rico's problems are not symptoms of Jones Act regulation. The American Maritime Partnership (AMP), representing the domestic maritime industry and comprised of vessel owners, vessel workers, shipbuilders, contractors, and others, highlights the fact that American shipping lanes are more regulated, have better working environments, and are safer because of the Jones Act. In its editorial responding to several "claims" about Puerto Rico and the Jones Act, the AMP asserts that "blaming the lack of LNG [on Puerto Rico] on the Jones Act is a red herring" because Puerto Rico's true impediment are meager U.S. export facilities and island infrastructure,²⁰ but this argument is not very convincing. The United States is a leading exporter of natural gas and it certainly could not achieve that position if its gulf facilities were really that "meager." Puerto Rico's island infrastructure may not be up to par with what the AMP would consider adequate, but there are good reasons why LNG-processing facilities like the Aguirre Offshore GasPort (see below) have yet to be built by PREPA. The AMP also points out that solely blaming the Jones Act for the high cost of goods on Puerto Rico is impossible because there are too many other factors on the island affecting cost of living, which is patently true. Other factors that complicate the island's economic position are Puerto Rico's controversial tax policies, which have both enticed businesses and created recessions.

¹⁹ Chokshi, "Trump Waives Jones Act for Puerto Rico, Easing Hurricane Aid Shipments."

²⁰ "Jones Act Amendment to Puerto Rico Bill Risks National, Homeland and Economic Security - American Maritime Partnership."

Tax Policy

In addition to the effects of the Jones Act, tax policies enacted by the U.S. Congress have negatively impacted consumers on the island. These codes mandated from the mainland have increasingly weakened the island's government, industry, and the people that rely on both. For decades, the growth of the Puerto Rican economy relied upon tax incentives given to companies that set up operations on the island. Section 936, enacted in 1976, ensured that U.S. companies could reduce their federal income taxes by transferring subsidiaries and other operations to the island.²¹ With Section 936 came pharmaceutical and manufacturing businesses that employed thousands of Puerto Ricans. Puerto Rico's own territorial tax code offered companies even more benefits and the chance to reduce their income tax liabilities as much as possible by distributing profits as dividends back to their mainland parent companies. In other words, money came in through Puerto Rico but was declared elsewhere in the United States, a big win for these big businesses, but at the same time a lot of lost tax income for the Puerto Rican government. The attractive tax benefits of both federal and territory-level rules on Puerto Rico encouraged many brand-name companies to move key functions of their enterprises to Puerto Rico in the 1980s.

With these tax incentives, industries and jobs flocked to Puerto Rico and with their abolition, poverty and unemployment spiked again. In 1996, President Clinton signed legislation to phase out Section 936 completely by 2006. In doing so, the United States government exercised its control over its possession and took away Puerto Rico's special tax rules, guaranteeing Puerto Rican subsidiaries of mainland U.S. businesses would receive the same tax treatment as any other non-island subsidiary in the United States.²² The Clinton decision coincided with a surge of economic opportunity around the world in other developing economies eager for foreign direct investment and able to offer their own cheap labor. More and more U.S. companies left Puerto Rico for tax-friendlier locations and in doing so they left the

²¹ "Tax Policy - Puerto Rico and the Section 936 Tax Credit."

²² "Tax Policy Helped Create Puerto Rico's Fiscal Crisis."

United States entirely, rather than simply moving back to the mainland as planned. New, lower tax incentives on U.S. businesses and higher corporate taxes on domestic, Puerto Rican businesses left the island dependent on investment from the mainland or from abroad that simply did not come. As Section 936 phased out in 2006, employment increased, and the bubble created by Puerto Rican dependency on tax-savvy U.S. businesses popped, throwing the unincorporated commonwealth into a recession that was worsened just a few years later during the Great Recession and has extended into the present.

Oddly enough, the abolition of Section 936 is an example of equality wielded against Puerto Ricans to their detriment, showing again the colonial will of the United States. Though the commonwealth received equal treatment as most of its fellow states in the union, this equality was mandated from the mainland undemocratically. As a result, the Puerto Rican situation worsened.

In a recession, government deficits will increase. In Puerto Rico's case, they skyrocketed up from already high levels, thanks to tax exemptions on bonds. Puerto Rico has always carried a large amount of debt (the money it owes from financing a deficit) because its bonds are triple-tax exempt, meaning that neither federal, state, nor local taxes apply. For this reason, municipal bond funds and others are more than eager to add them to a portfolio, buying more and more and all the while increasing the amount Puerto Rico owes later on. These U.S. government devised tax incentives directly contributed to the demand for Puerto Rican bonds and the increase in the island's debt that would cripple its ability to function.

The Debt

The current crisis state of PREPA can only be understood in the context of the greater debt crisis facing Puerto Rico, enabled and worsened by the tax policy that made Puerto Rican bonds so appealing to investors. In summer 2017, Puerto Rico revealed that it possessed more than \$70 billion of bond debt and another more than \$50 billion of pension-related debt owed to its

citizens.²³ But it was not always like this. In 1999, Puerto Rico had only \$16 billion of public debt. By 2006, that number more than doubled to \$39.5 billion, and then by 2017 almost doubled again to \$74 billion, where it stands today (see Appendix B).

A breakdown of the debt components reveals the reason for the rapid growth of Puerto Rico's liabilities, mostly attributed to Puerto Rico's public authorities (see Appendix C). About 24 percent of the public debt falls under general obligation bonds meant to finance public works and municipalities. Another 22 percent of the total debt is owed to various public entities, including the Government Development Bank, the University of Puerto Rico, and PRHTA (Puerto Rico Highways and Transportation Authority). One example of a project partly funded by bond proceeds is San Juan's Tren Urbano, a rapid transit system serving the greater San Juan area that is operated by the Puerto Rico Highway and Transportation Authority (PRHTA). Almost a third of the funds that financed the project totaling \$637.8 million came from creditors. Overall, the project took longer to complete than anticipated, cost more than budgeted, and today faces low ridership and is operated at a loss by an outside contractor, losing money yearly.²⁴ This is but one smaller example of the influence of contractors on public works projects in Puerto Rico, particularly within PREPA, and the contributions these projects make to the island's total debt.

PRASA (Puerto Rico Aqueduct and Sewer Authority), another public utility, holds 6 percent of the debt. Next, about 24 percent is attributable to bonds secured by sales tax revenue (known by their Spanish acronym as COFINA bonds, see below). Finally, PREPA holds 12 percent of the island's entire debt itself. Just like the Tren Urbano, many of PREPA's own costly projects were funded in part from bond proceeds, adding to the island's total debt. All in all, the people of Puerto Rico bear the burden of the immense public debt that holds the entire economy hostage. In 2012, debt as a percentage of total income for the average Puerto Rican citizen was

²³ Walsh, "How Puerto Rico Is Grappling With a Debt Crisis."

²⁴ "FHWA - Center for Innovative Finance Support - Project Profiles."

100.7 percent. In comparison, New York's public debt as a percentage of total income, the highest among all fifty states, was only 29 percent.²⁵ This level of liabilities leaves the territorial government and its various authorities, one of the largest employers on the island, unable to do its job.

In 2001, Puerto Rican debt was about 60 percent of Gross national Product (GNP), but that percentage steadily rose until 2013, when debt reached 102 percent of GNP, surpassing it entirely.²⁶ GNP measures the value-added and production of all Puerto Rican or Puerto Rican-owned entities, rather than any firm operating on the island. Puerto Rico was already in deep water when this government debt constituted a high percentage of its economy as defined by the value of its citizens' output. When percentage of debt exceeded GNP entirely, investors knew for sure that trouble was around the corner, and Puerto Rico had trouble issuing more debt to pay for its previous liabilities (see below). When combined with a tax code that favored higher rates on a narrower base and increased migration away from the island, the debt ensured that the government's tax income and assets pale in comparison to its liabilities with each passing year.

The Government Development Bank

In early 2009, then President and COO of Banco Santander de Puerto Rico Carlos M. García took the helm of the island's Government Development Bank (GDB). The GDB is the institution that almost every public sector entity in Puerto Rico, including PREPA, turns to for liquidity in times of need. The GDB has even served as the financial guarantor for the Commonwealth itself. According to its website, its core mission is "to safeguard the fiscal stability of Puerto Rico and promote its competitiveness."²⁷ Appointed by Governor Luis Fortuño (PNP, New Progressive Party), García wielded his power over the public bank to enact a series of pro-privatization policies to the detriment of major infrastructure projects that could

²⁵ Braun and Levin, "Debt Island."

²⁶ "Congressional Task Force on Economic Growth in Puerto Rico."

²⁷ "Government Development Bank for Puerto Rico."

have revitalized the aging PRHTA, PRASA, and, of course, PREPA, all debt-plagued public authorities. An exploration into the GDB, its stormy history of removing public infrastructure protections, and the leader that catalyzed such a destabilizing change in the name of saving the commonwealth's bond rating is important context for PREPA's current financial situation and privatization forecast.

The GDB's infrastructure fund, known as the Corpus Account, was first established with \$1.2 billion in proceeds from the lucrative 1999 privatization of Puerto Rico's telephone company. This privatization was catalyzed by the first Roselló administration under Pedro Roselló, father of Puerto Rico's current governor, Ricardo Roselló. After a private company acquired majority stakes in the telephone company, the telephone authority turned into a profit-making machine, and money flowed out of Puerto Rico and into the coffers of non-Puerto Rican companies like Verizon and América Móvil, the Mexican company that owns it today.

Ten years later in 2009, Puerto Rico was not only already struggling under a significant debt load, but the island was struggling to raise funds after losing the trust of the capital marketplace (Puerto Rico's general obligation bonds had already been significantly downgraded). In this environment, the debt weighing on Puerto Rico would have informed every decision at the GDB, especially when public authorities faced with their own liabilities and struggled to conduct their own daily operations. Liquidation of the more than one billion dollars in the Corpus Account earmarked for public projects to fund the debt fit well into a broader narrative of laying off public employees and privatizing public holdings – eliminating the sources of debt by eliminating public services and diminishing government. García endorsed public-private partnerships (PPPs), perhaps for their ability to immediately reduce public expenses and conserve funds upfront to aid in the fight against massive debt.²⁸ This history of promoting big and powerful multinational businesses through contracts at the expense of Puerto Rican government services falls in line with neoliberal privatization trends, and García in his

²⁸ Carlos Marquez, "GDB Locks up the 'Piggy Bank.'"

tenure at the GDB ensured that the current issues facing Puerto Rico stem from both a mix of neocolonial and neoliberal policy. The former helped to create a debt crisis and the latter helped to make it worse. By neocolonial, I mean the use of economic policy to influence, control, or exploit another territory or impede its independence. By neoliberal, I mean the free-market principles associated with Milton Friedman that advocate for laissez-faire economics, deregulation, austerity measures, reduced government spending, and privatization.

By the end of the first year of his tenure at the GDB, García presided over a massive sale of Corpus Account securities and the usage of those profits not for investment in public infrastructure projects themselves or to shore up the fund, but to pay off previous bondholders, to increase the commonwealth's budget, and then to borrow more, refinancing the GDB. The GDB essentially then wrote an IOU to the Corpus Account, stating that it could count on receiving the profits back from the new debt issued in 2040, throwing yet another critical government function into debt by issuing more loans. By 2010, the GDB had sold more than \$5 billion in bond notes, many of which were underwritten by Banco Santander, García's previous place of employment, at a discount and then thrust into the secondary market to local investors in Puerto Rico and around the world.²⁹

What little remained in the Corpus Account was further invested in COFINA bonds, debt backed by Puerto Rico's sales tax (nonexistent before 2006) with a startling 7% interest rate, nearly double the accretion rate of U.S. treasury bonds for a similar time frame. Prevalence of poverty on Puerto Rico's already means a weaker sales tax compared to other states, and increased migration away from the island even before a catastrophic hurricane does not help. Sales taxes inordinately affect poor populations, forcing them to purchase less since tax takes up a larger chunk of their paycheck, and less people on the island means less tax income. True to their structure, COFINA bonds are literally the obligations of the Puerto Rican taxpayers.

²⁹ "The Looting of Puerto Rico's Infrastructure Fund."

Thanks to García, the Corpus Account that was originally intended to support public infrastructure projects and aid the island's large public utilities was completely reduced to bond notes over the course of a few years, adding more to the Commonwealth's debt.

Throughout the developing financial crisis, the GDB then took on an increasing number of loans under García and his successor Juan Carlos Batlle (another previous Banco Santander executive). In doing so, the GDB exercised its ability to serve as a financial guarantor in the present, but jeopardized its ability to repeat that service in the future for the government or any of the many Puerto Rican public agencies that provide critical services. Without the infrastructure fund money to help alleviate the strain that public utilities exerted on the bank, loans were an adequate alternative solution for the GDB to provide for those floundering utilities. Just a year after selling \$5 billion in bond notes, the GDB itself paid PREPA's bondholders when PREPA was unable to pay in 2011. By 2013, the GDB's loans receivable accounted for 69 percent of its total assets. In other words, more than half of the bank's assets were intangible. At this point, the GDB almost fully relied on the island's municipalities, public corporations such as PREPA, and the commonwealth government itself to repay the GDB in full and in a timely manner. As their own bond ratings decreased and Puerto Rico's public service providers and the central government itself were shunned more and more by capital markets, these utilities repeatedly turned to the GDB, but the Development Bank without the Corpus Account could do no more than offer more loans. At the start of 2014, loans to the commonwealth government alone accounted for 29 percent of the GDB's total loan portfolio.³⁰ More and more, the GDB took on an increasingly precarious and essential role keeping the government functions afloat (see Appendix D).

The GDB quickly became entirely dependent on access to capital markets to finance the loans that it offered – a financially vulnerable position. A detailed 2014 report by Gurtin

³⁰ "Municipal Credit Research Report: The Overlooked Role of the Government Development Bank in Puerto Rico's Crisis."

Municipal Bond Management, an investment management firm specializing in municipal bond portfolios, foresaw the inevitable. “While a ‘House of Cards’ may be an appropriate analogy for Puerto Rico, a better description may be a classic Ponzi scheme: the Commonwealth and the public corporations of Puerto Rico are borrowing from both the public debt markets and the GDB.” At this point, PREPA relied on the money from its own loans and debt issued to repay the GDB, and the GDB relied on those same market vehicles of debt to fulfill its role assisting PREPA in the first place, but neither party had the money itself. An example of this “Ponzi Scheme” can be seen in the Commonwealth’s repayment a portion of its outstanding loans to the GDB, in which liability “merely shifted from the GDB back to the Commonwealth in the form of future bond repayments.”³¹ In this manner, the debt never really disappeared.

The survival of both entities, both the GDB and the Commonwealth it was supposed to support, depended on access to outside funding, which would shortly disappear as investors downgraded Puerto Rican bonds in 2014, recognizing the magnitude of the situation. In its forecasting, the GDB optimistically assumed that future bond returns would compensate for its decreasing liquidity, a result of meeting the needs of its many bondholders. But once the bank found itself in the trap of future funds guaranteeing present-day responsibilities, which the GDB already struggled to fulfill, rating agencies promptly downgraded bonds to junk level in early 2014, isolating the island from the debt markets that it relied so heavily upon.³²

The combination of the gradual liquidation of the Corpus Account conducted by Carlos M. García and the GDB’s chronic issuing of debt to feed a hungry cadre public agencies and an even hungrier Commonwealth resulted in a severe rating downgrade, undermining the financial situation of the entire government and removing the financial safety net that had supported PREPA’s operations for years. Whether or not these actions align with the mission statement of the GDB by safeguarding the fiscal stability of Puerto Rico or promoting its competitiveness is

³¹ Ibid.

³² Fletcher, “Puerto Rico Bonds Downgraded to Junk Levels.”

questionable. Consequently, PREPA suddenly found itself unable to borrow more money in a pinch and resorted to issuing more of its own debt while it still could.

PREPA's Debt

The method of and degree to which PREPA issued an increasing amount of debt are contentious. Totalling more than \$9 billion before Hurricane Maria, it is a wonder how a public utility that clearly barely could maintain its own operations was able to issue so much debt and still enjoy a favorable credit rating for so long. Attempting to rationalize this reality sheds light on the utility's own dubious reporting practices as well as its external pressures and enablers. Understanding PREPA's financial liabilities is key to understanding the utility's operating deficiencies, its investment choices, and its attractiveness to private buyers.

First, *El Nuevo Día*, Puerto Rico's premiere newspaper, reports evidence that PREPA overestimated or perhaps inflated income projections and future electricity consumption calculations in order to be eligible to borrow so much money for the issuance of Power Revenue Bonds, Series 2013A.³³ PREPA included income received from electricity sales to municipalities in its numbers for accrued income, but this service was actually wholly subsidized. PREPA provides free electricity to municipalities in exchange for not having to pay property taxes, so PREPA did not actually charge for that energy or ever receive any income from those services.³⁴ By telling investors otherwise, PREPA drastically overstated expected income from ratepayers, making it appear more financially stable. Had PREPA not reported in its revenues the addition of these uncollected charges, it would have met the minimum requirements to issue debt for only one out of the ten fiscal years in which it did.³⁵

Further, PREPA has relied on the same auditors for almost fifty years: the URS Corporation, a subsidiary of AECOM, an engineering and design consultancy. Any issue with the

³³ "Shadows in PREPA's Debt."

³⁴ Walsh, "How Free Electricity Helped Dig \$9 Billion Hole in Puerto Rico."

³⁵ "Puerto Rico Commission for the Comprehensive Audit of the Public Credit Pre-Audit Survey Report."

accuracy of PREPA's audits directly impacts its ability to borrow from capital markets as well as undertake new investment opportunities. The Sarbanes-Oxley Act, passed in the aftermath of accounting scandals from large corporations like Enron and WorldCom, stipulates an audit provider rotation of at least five years to protect investors and ensure accurate audits. The Act also stipulates that auditors cannot provide a company with services outside the scope of its audit while engaged in auditing to prevent against any possible conflicts of interest that could arise. Though PREPA is a public agency and thus not beholden to Sarbanes-Oxley legislation, these sensible business practices have been adopted by other public utilities. In contrast, PREPA not only has partnered with the URS Corporation for decades but has also permitted URS to engage in non-performance audit services. URS was involved in the commodification of at least one bond series: 2013A, creating a situation in which the income that URS earned as auditors might have been related to PREPA's debt sales – a clear conflict of interest and another factor contributing to PREPA's now increasing financial obligations.³⁶

The issuing of the Power Revenue Bonds, Series 2013A also calls into question the relationship between PREPA and the GDB and exposes some potential agency issues between the two organizations. At this point in time, PREPA owed the GDB for loans it had taken out, and the GDB was enjoying its last few months of access to capital markets. Both the Governing Board of PREPA as well as the GDB's Board of Directors are responsible for whether or not debt is issued. This means that the bank is an entity that serves both as a fiscal advisor to a public corporation and one that can offer it lines of credit when needed, casting aspersions on whether or not the GDB's financial advice was unbiased, especially when it had other hungry mouths to feed. It is possible that PREPA issuing debt and higher rated bonds would directly benefit the GDB because of the GDB's financial tether to the public agencies on Puerto Rico.

Moreover, the close relationship between the GDB and PREPA may have supplanted other important corporate governance authorities: "In state-owned PREPA, the Puerto Rican

³⁶ Ibid, 28.

residents are comparable to the shareholders of private enterprises, only that the Puerto Rican residents do not exercise comparable powers. This allows diverse interest groups such as political parties, bondholders and unions to organize and extract benefits from PREPA at the burden of the rest of the Commonwealth's residents."³⁷ Because the structure of a public company does not always allow for the protection of ratepayer interests by default, it may have been easier for PREPA to make such large financial decisions like issuing billions of public debt on top of their preexisting liabilities without taking into account the effect on the ratepayers that they serve and depend upon as a revenue stream. Later, the composition of PREPA's senior management will reveal a revolving door influence that even further isolates the actions of PREPA from the population it serves, but for now knowledge of the intergovernmental conflicts of interest is sufficient context to delve into the political forces present and what happened next after the U.S. federal government could no longer ignore Puerto Rico's growing debt.

PROMESA and La Junta

While other municipalities can declare bankruptcy under Chapter 9 of the U.S. Federal Bankruptcy Code (including the District of Columbia for example), Puerto Rico was explicitly prohibited from exercising bankruptcy privileges. In 2014, the U.S. Supreme Court confirmed their interpretation of the law that bars Puerto Rico from permitting its public utilities to declare bankruptcy in *Puerto Rico vs. Franklin Cal. Tax-Free Trust*, in which creditors of PREPA holding almost \$2 billion in bonds sued to block the passage of the Recovery Act, which would potentially allow PREPA and other agencies to modify their debt in a process similar to bankruptcy, perhaps to the disadvantage of creditors.³⁸ Reminiscent of the laws and judicial opinions that first defined Puerto Rico's place in the nation, *Puerto Rico vs. Franklin Cal. Tax-Free Trust* is one in a long line of policies and rulings that only define Puerto Rico as a part of

³⁷ Ibid, 25.

³⁸ *Puerto Rico v. Franklin California Tax-Free Trust*, 579 U.S. __ (2016)

the union to the benefit of the federal government and U.S. industry. Profoundly neocolonial, this decision had enormous ramifications on the attention that the federal government paid to the Puerto Rican financial crisis and the power that Puerto Ricans were denied to have a say in the crisis's resolution. After *Puerto Rico vs. Franklin Cal. Tax-Free Trust*, Puerto Rico and its ailing agencies remained in dire need of a fiscal policy change yet simultaneously unable to effect that change itself unlike mainland municipalities, like Detroit, that declared bankruptcy. Because they could not declare bankruptcy themselves, Puerto Rico's government authorities, including PREPA, were left on life-support. The judicial ruling on bankruptcy prompted the failure of the restructuring agreement, which itself promoted the idea of privatization. If public agents were not going to solve PREPA's problems, then maybe private agents would.

In 2016, President Obama took notice of Puerto Rico's paralyzing economic situation and responded by signing PROMESA (Puerto Rico Oversight, Management, and Economic Stability Act), which created the Financial Oversight Management Board (FOMB), an unelected financial control board in charge of navigating the bankruptcy process of the island. With vast power to approve budgets, sell assets, and layoff public employees, the FOMB, colloquially referred to as "La Junta" on the island, is comprised of seven bipartisan members selected by the President at the suggestion of Congress and one ex-officio member selected by the governor of Puerto Rico.³⁹ Here, the pattern of supplanting of Puerto Rican local government first established by the presidentially appointed leadership in the Foraker Act repeats. Although there is little public information available yet explaining who exactly within the Obama administration made the FOMB appointments and how, the creation of a separate oversight board not comprised of elected legislators shows how in some ways the federal attitude toward Puerto Rico has not changed. Puerto Rico simply is not a priority for the president, who instead chose to focus his time and energy in the Caribbean on U.S. relations with Cuba.

³⁹ DeBonis, "House Passes Puerto Rico Fiscal Rescue Bill Ahead of July Cliff."

Owing to its responsibility to the federal government, the FOMB also supersedes local government. The creation of PROMESA meant that unelected public agents, some with conflicts of interest, would be the ones coming to solve PREPA's problems, but the FOMB's approach was not direct – the Board instead would be the ones to decide which private agents would do the actual work and lay the foundation for privatization.

Of the eight individuals on “La Junta”, many already have ties to previous administrations or agencies on Puerto Rico, and these histories are important considering the policy decisions that the FOMB makes and their grand unaccountability to the Puerto Rican constituents that they have been appointed to serve. Perhaps because of drastic austerity measures, including public employee furloughs and the elimination of Christmas bonuses to further cut down on government spending and better balance budgets, La Junta has clashed with Puerto Rico's legislation.⁴⁰ The Puerto Rican public has also protested the Board, noting that its members have more of a background in esoteric finance than in infrastructural or economic development. The austerity measures that threw Puerto Rican territory legislators and their constituents into an uproar make La Junta even less popular with Puerto Rican citizens who already voiced their concern over the \$625,000 salary earned by the Natalie Jaresko, La Junta's executive director. Jaresko served as the former finance minister of Ukraine during the country's severe recession in 2014.⁴¹

Other notable members of La Junta appropriately have ties to the fulcrum upon which Puerto Rico's public agencies rest and the organization responsible for much debt – the GDB. The aforementioned Carlos M. García, who headed the GDB between 2009 and 2011 and promoted privatization and other austerity measures by draining the Corpus Account of its worth and pinning the GDB down with debt, is on the Board. José R. González also serves on the FOMB and, like García, has both served as president of the GDB in the past and has ties to

⁴⁰ “Puerto Rico Fiscal Board Willing to Go to Court over Furlough.”

⁴¹ “Ukraine Ex-Finance Minister to Oversee Puerto Rico Crisis.”

Banco Santander, particularly the private Santander Securities Corporation.⁴² The current ex-officio member appointed to represent the government is Christian Sobrino Vega. He became president of the GDB in February of 2017.

Another board member is José Carrión, who has voiced support for pro-statehood politics on the island and also happens to be the brother-in-law of Pedro Pierluisi, Puerto Rico's current nonvoting representative in Congress. Carrión, who has a background in insurance, was the President of Aon Risk Services of Puerto Rico. Coincidentally, AON is PRASA's Puerto Rico Aqueduct and Sewer Authority) Broker of Record, designated by the agency to manage its insurance policy.⁴³ José Carrión hails from one of Puerto Rico's most prominent families. His father used to run Banco Popular de Puerto Rico, another large financial institution on the island, before handing off management to José Carrión's cousin, Richard Carrión, who is currently in charge.

For better or for worse, at least half of the members of the FOMB members have strong political ties to the Government Development Bank and powerful financial institutions on the island, some of which facilitated the sale of so much debt. Whether or not these board member's histories in the private sector influence their current attitudes will be revealed by their actions. For now, however, cronyism prevails. Since José Carrión's appointment, PREPA coincidentally signed a contract with Aon for actuarial consulting services.⁴⁴

Though the talent pool of individuals qualified to serve on the FOMB is not exactly overflowing, there are more finance-associated individuals than Puerto Rican members of the judiciary, academics, industry leaders, or labor advocates, who were all passed over by President Obama. Conservative political ideology is often thought of as being sympathetic to neoliberal

⁴² "¿Quiénes Son Los Miembros de La Junta de Control Fiscal? – CB En Español."

⁴³ "Fiscal Year 2015 Consulting Engineer's Report for the Puerto Rico Aqueduct and Sewer Authority."

⁴⁴ Puerto Rico Fiscal Agency and Financial Advisory Board and Puerto Rico Electric Power Authority, "Memorandum of Understanding between the Puerto Rico Fiscal Agency and Financial Advisory Board and the Puerto Rico Electric Power Authority."

doctrines, but when it comes to neocolonialism, the business of exploitation is both historically and currently bipartisan just like the FOMB itself.

Nowhere are the potential conflicts of interest between the FOMB and the organization it rules over more visible than in the management of PREPA and its debt. Because the PREPA problem occupies such a large portion of the island's debt, finding a solution was of chief importance to the FOMB. Before the FOMB's reign, PREPA and Governor Roselló were already negotiating restructuring talks with PREPA bondholders on their own. Despite the fact that Roselló campaigned on the need to compromise and reach a deal with debt holders, he rejected a plan in early January in favor of different terms that did not have such large added charges on invoices that would hurt consumers.⁴⁵ As a result, those talks led by Governor Roselló fell through, and the FOMB began to assert their influence as a liaison between creditors and PREPA. A quick resolution of the PREPA issue would have shown the FOMB's authority and set the tone for further debt reorganizations in the future. But PREPA is a complicated entity that contains multitudes and often contradicts itself. Attempting to get PREPA back on its feet by way of privatization brought the advisory board in direct conflict with PREPA's government-influenced management, the Puerto Rican government itself, and private-sector pressures – all before a category-four hurricane ravage the island. Before contextualizing the FOMB's stance on PREPA within the greater trend of disaster capitalism (see Part III below), I will examine PREPA's current state of operations, financial distress, and governance in greater detail.

⁴⁵ “Puerto Rico Governor, Bondholders Divided on PREPA Deal.”

Part II: PREPA Today

In this section, I will discuss in detail PREPA's capacity and performance as well its financial situation, which will highlight key power generation sites, projects, figures in charge, and questionable decisions that may have caused more harm than good. A comparison to Austin Energy, another public utility, will also underscore which of PREPA's problems, if any, are attributable to all public electric authorities across the board. Examining certain key differences between these two organizations gives important context for the extent of PREPA's failure.

PREPA's State of Operations

As of 2015, Puerto Rico's peak energy demand hovered around 4,000 MW (megawatts), but whether that amount will change in the next decade is unclear.⁴⁶ Utilities base their calculations off of peak demand to ensure they can provide for ratepayers at the maximum possible demand, even if that only lasts for a few minutes per day. A Department of Energy Report from 2015 recognizes the potential impact of climate change on Puerto Rico's energy demand and structure, including increased demand for cooling with rising local temperatures and the fact that many power plants are vulnerable to rising sea-levels or increased flooding, shown recently by Hurricanes Irma and Maria.⁴⁷ Vulnerability to climate change must be included in any estimation of demand because climate change will directly impact the means of power production on the island. Coupled with the ongoing migration of citizens away from the island, however, the magnitude of increased demand may taper off. Especially in the wake of Hurricane Maria, migration has increased post-hurricane with a low estimate of 120,000 residents leaving the island for the mainland United States annually in the coming years.⁴⁸

⁴⁶ "Energy Snapshot: Puerto Rico."

⁴⁷ "Hawaii and Puerto Rico Climate Change and the U.S. Energy Sector: Regional Vulnerabilities and Resilience Solutions."

⁴⁸ Edwin Meléndez and Jennifer Hinojosa, "Estimates of Post-Hurricane Maria Exodus from Puerto Rico."

Taking both climate change and migration into account, an estimate of 4,000 MW is a good baseline number for Puerto Rico's energy demand.

On a technical note, demand is different from consumption and is, thus, measured differently. For example, a 2 MW light bulb will always demand 2 MW from the grid when it is turned on. Unlike demand, the light bulb's consumption depends on the amount of time it is turned on and is measured in Mwh. If left on for five hours, the light bulb will *consume* 10 Mwh.

Recently, PREPA has been unable to meet total consumption, which hovers around 111 TWh (terawatt hours) and is about 27,750 times its demand, and rolling blackouts have become the norm on Puerto Rico, each one costing PREPA more than the last.⁴⁹ An independent audit from November 2016 (almost a year before Hurricanes Irma and Maria) commissioned by the Puerto Rico Energy Commission (PREC) and written by Synapse Energy, a research and energy firm that specializes in energy, economic, and environmental cases, confirmed PREPA's serious financial issues and diagnosed their operational and capital budgeting symptoms. The in-depth audit of PREPA found that it was "forgoing more than two million Mwh (megawatt-hours) each quarter" across its fleet.⁵⁰ To put this number into perspective a little better, two million Mwh is equal to two TWh, which itself is roughly two percent of Puerto Rico's established total energy consumption. At least two percent of Puerto Rico's total consumption is lost four times a year owing to forced outages. During these times, when PREPA's generators fail, the utility is forced to rely on expensive backup generators, draining the agency's resources even more (See Appendix E).

The underlying reason behind the blackouts is the fact that the Authority has habitually scrimped on maintenance and repairs expenses as well as salaries in order to save cash. Old power plants already in poor condition are overcompensating to maintain electric stability in smaller communities, particularly in the south, with bad infrastructure. Between 2014 and 2016,

⁴⁹ See note 17.

⁵⁰ Jeremy I. Fisher and Ariel I. Horowitz, "Expert Report: State of PREPA's System, Load Forecast, Capital Budget, Fuel Budget, Purchased Power Budget, and Operating Expense Budget," 27.

PREPA lost twenty percent of its workforce.⁵¹ Its remaining employees simply could not appropriately respond to maintenance issues in the short term, let alone maintain the equipment, facilities, and power lines with the future in mind. PREPA's own reports show that the forced outages can be traced to "exceeding OEM [original equipment manufacturer] recommended equipment overhauls schedule."⁵² PREPA's 2013 annual report, written by its auditors and consultants URS, shows that the Authority even avoided necessary overtime for scheduled outages in order to reduce the costs it incurred. This policy drastically extended the duration of these outages and made PREPA's generation units even more unavailable.⁵³ In addition, PREPA attributed thirty five to forty percent of interruptions in one year to transmission complications resulting from tree trimming conditions. The consequence of a significantly downsized workforce meant that downed trees almost certainly took power lines with them when they fell, and Puerto Rico is an island that regularly sees hurricane strength winds that are strong enough to take down entire buildings, let alone trees.

The rolling blackouts can also be attributed to private sector influence and its impact on the availability of both human and financial capital. As it cuts down on staff and makes decisions like refusing to schedule overtime projects and, thus, pay its workers overtime, PREPA has suffered from a departure of skilled labor. Exacerbating the negative effects of operational roles being filled by new employees lacking "required expertise and knowledge," PREPA's contractors are not always familiar with the technology PREPA uses or historical issues, including "stator windings at Aguirre, turbine controls issue at Costa Sur and vibrations problems at San Juan."⁵⁴ PREPA has many private contractors on many different jobs all at the same time, requiring a level of communication with one another and a competency with an outdated system that may not always be present. Incorporated into this private sector issue is the ongoing Aguirre Offshore Gas Port (AOGP) project, which is subcontracted out to a private company entirely (see

⁵¹ Alvarado León, "PREPA loses part of its skilled talent."

⁵² *Ibid.*, 29.

⁵³ "Fortieth Annual Report on the Electric Property of the Puerto Rico Electric Power Authority."

⁵⁴ See note 51 above, 31.

below). According to Sonia Miranda, who served as Director of Planning and Environmental Protection of PREPA and was a twenty-five year employee of the company, the utility was waiting for gas conversion at the still unfinished Aguirre plant before investing in major repairs.⁵⁵ PREPA waited and waited for benefits from contracted work that never came, leaving current operations on hold.

According to PREPA's own reports, blackouts come out to around sixteen hours per year without power, far higher than the authority's goal, which was less than ten. PREPA's probability that a ratepayer will experience an outage of any kind during a certain period, known as its SAIFI (System Average Interruption Frequency Index), approaches almost 50 percent *monthly* during the worst weather months of the year in early fall, coinciding with Hurricane season. The utility's goal is 33 percent *monthly* which itself exceeds usual industry values for this measurement, normally measured yearly. Notably, this information reported by PREPA neglected to include an outage at the Aguirre plant that lasted more than two days with no justification for the exclusion. Here is an example of a lacuna, in which information is not being collected or, if collected, is not being released to the detriment of any outside observer trying to grasp the situation of the utility. Since 2013, outages are longer when they do occur, lasting an average of more than two hours, and the number of outages that a Puerto Rican experiences is at least four times that of the average U.S. customer.⁵⁶ To be clear, nothing about PREPA's situation is normal. Any electric utility, public or private, should have a better track record. Further investigation of specific PREPA sites shows why it does not.

Comparison to Austin Energy

Many of the operational and financial issues that plague PREPA originate in the company's status as a public utility that is funded and run by the government, which begs the question of whether or not being a public authority is a prerequisite for failure. In this section, a

⁵⁵ Ibid., 29.

⁵⁶ Ibid., 35.

brief comparison to another public utility (cabotage laws aside) will show that these issues are indeed inherent to PREPA itself and not common symptoms found in all public utilities and that PREPA's operations and decisions are abnormal.

Austin Energy, a municipal public utility, serves more than 440,000 individual customers, of which over 400,000 are residential, and ultimately provides power to more than a million people in the Austin area (as of 2015).⁵⁷ The company provided a fuel cost of 3.314 cents per kWh, while PREPA has two differing rates: 20.47 cents per kWh for residential customers and 22.39 cents per kWh for commercial customers.⁵⁸ The affects of relying on imported oil for power generation and relying on ratepayers to be the sole funders of the utility make power on Puerto Rico extremely expensive, especially compared to mainland public utilities.⁵⁹ Despite charging so much for electricity, PREPA recently only manages to recover 5.3 cents per kWh and 6.75 cents per kWh in revenue, respectively, owing to its high cost of power generation and transmission.⁶⁰

From 2011 to 2015, Austin Energy's bond ratings received consistently high ratings, never once dropping into "B" range, and Austin Energy has high Equivalent Availability Factor ratings, which measure the number of hours is generating unit is available at full capacity annually. Compared to PREPA's yearly SAIFI (the average number of times a customer's service is interrupted) of 11.61, which is twelve times higher than the average U.S. customer, Austin Energy's yearly SAIFI is only 0.7, even better than the average U.S. customer's service. Perhaps because Austin Energy reportedly invests \$11 million annually in line clearance and trimming services, it is better able to prune trees and maintain its lines.⁶¹ Austin Energy, of course, is not responsible for serving such a large population spread out over a large geographic area as PREPA, which also serves the concentrated urban centers of San Juan, Ponce, and Mayagüez in

⁵⁷ "Number of Austin Energy Customers 2015 | Open Data | City of Austin Texas."

⁵⁸ "Austin Energy Annual Performance Report," 4.

⁵⁹ See note 11.

⁶⁰ "Amended & Restated Fiscal Plan," 31.

⁶¹ See note 58, 34.

addition to remote towns in the midst of mountainous terrain, and the island of Vieques, almost ten miles off the coast of the main island.

One key component of its success is Austin Energy's investment in renewable technology and diversification of its power sources. As of 2016, the utility generated 31.8 percent of power from renewables, 17.5 percent from natural gas, 26.2 percent from nuclear sources, and 24.5 percent from coal sources, and no power generated from oil.⁶² In contrast, PREPA's stats show that it generated 55.3 percent of power from oil, 27.6 percent from natural gas, 16 percent from coal sources, and only 1.1 percent from renewable sources, with no nuclear affiliation reported. (See Appendix F). Across the board, PREPA tends way more toward fossil fuels, especially oil. Access to capital and freedom from the debt that cripples Puerto Rican agencies enabled Austin Energy to proactively invest in modern, more efficient renewable technology as well as appropriately maintain its previous fossil fuel holdings. While PREPA does obtain some of the megawatts it supplies from solar sources and has existing power purchase agreements expiring in 2027 and later, the Authority neither owns nor operates its own solar plants.

Neither does PREPA have the financial control of over its operations that Austin Energy has. PREPA's most recent fiscal plan states that over 62 percent of PREPA's costs are controlled by external factors, a number that is not surprising considering that the utility relies on purchased oil and imported natural gas to generate more than 80 percent of its power. Financially, PREPA has much less cash on hand. Notably, it has a bad debt expense of 4 percent of revenue, whereas Austin Energy's bad debt expense is around 0.63 percent. Not only is PREPA highly leveraged, but it also consistently loses more money from the amount of uncollectible accounts receivable. As rates increase, ratepayers are more and more delinquent in their payments, eating into the utility's revenues. PREPA's problems are a consequence of the agency's unique task and political reality: to serve Puerto Ricans in spite of the topological, demographic, financial, private-sector, governmental, or supra-governmental challenges

⁶² "Fourth Quarter Report Fiscal Year 2016," 3.

(themselves representative of the skewed relationship between the United States and Puerto Rico) that are thrown its way. Austin Energy has its fair share of operational difficulties, but does not face anywhere near the number of external pressures that PREPA does. For that reason, it is reliable and comparably inexpensive.

PREPA's Financial Distress

One big reason for PREPA's its failure to provide for its ratepayers, appropriately maintain its facilities, or incorporate of renewable energy is that PREPA is effectively broke. The utility can barely manage its current daily obligations. Adding to PREPA's woes is its lack of access to low-cost capital markets to fund any projects and the ensuing questionable management practices. Capital in this sense refers to the money needed for new investments or to prolong the life of existing resources, not the money needed to sustain day-to-day activities. Long before Hurricane Maria in 2015, PREPA's bonds were downgraded from "CCC-" to "CC," the lowest possible junk level before default.⁶³ With this rating, no new investor would even consider throwing any money at either PREPA or Puerto Rico itself as a financial entity. Already having lost one lifeline when the government of Puerto Rico's bonds were downgraded and the GDB took out more and more loans, PREPA relied almost solely on its junk-level bonds for capital. Soon enough, PREPA had no access to capital markets to fund any projects, much less expensive renewable ones.

The Synapse Energy independent audit from November 2016 confirmed these serious financial issues and diagnosed their operational and capital budgeting symptoms. Because it cannot rely on investors for capital, "PREPA is left in the unenviable position of funding capital projects with no lender but ratepayers."⁶⁴ PREPA's customers themselves – the "ratepayers" – are the only ones financing almost all of PREPA's capital expenditures as they are *incurred*,

⁶³ Jeffrey M Panger and Peter V Murphy, "Puerto Rico Electric Power Authority Ratings Lowered To 'CC', Remain On Watch Neg."

⁶⁴ See note 51 above, 66.

which “exposes PREPA’s customers to the utility’s decisions with little or no buffer.”⁶⁵ This is another reason why electricity on Puerto Rico is so expensive and is one of the chief reasons behind the lack of investment in renewable technology or repairs.

In addition, budgeting processes could be to blame for the lack of money available to maintain PREPA’s needs and invest in a better future. The Synapse report examined the process for determining budget caps and discovered that “in stark contrast” to the normal budgeting process at other utilities, “revenue requirements are driven by needs, tempered by political realities” (i.e. the avoidance of rate shock). In PREPA’s case, the political reality of avoiding cost increases appears to lead, with system requirements taking a back seat.”⁶⁶ Puerto Rico’s debt strangles PREPA’s budget and impedes it from prioritizing correctly. Here is an example of managerial incompetency and poor organizational practices. Cutting maintenance, possibly extending outages, and other subversive practices are the result of the incentives created when revenue becomes more important than the “systematic requirements” of the grid that is supposed to create the revenue in the first place. At first, these actions seem almost unjustifiable and corrosive to the overall health of PREPA, but they begin to make a little more sense when understood in the context of an agency that is so desperately strapped for cash. That being said, these were costly mistakes:

PREPA has “deferred” maintenance so often and for so long that required maintenance has become required repairs, and required repairs have become required replacements—all with a bigger price tag than the maintenance PREPA pushed off for the sake of constraining its spending. We recognize that the ratepayers of Puerto Rico can ill abide increases in already high costs for electricity. However, we emphasize that there is simply no way for PREPA to achieve a safe and reliable electricity system without a significant outlay of funds.⁶⁷

⁶⁵ Ibid., 67.

⁶⁶ Ibid., 16.

⁶⁷ Ibid., 18

Unfortunately, these damaging actions have contributed even more to PREPA's death spiral. PREPA has dug itself into a hole of disrepair and will require wheelbarrows full of cash to find its way out. Scrutinizing this systematic neglect and abandonment of PREPA's required repairs calls into question the quality of oversight by URS, the engineering-focused corporation responsible for not only auditing but offering consulting services to PREPA, and others. Hurricane Maria simply laid bare significant structural issues of Puerto Rico's energy grid, which had been in decline for years before the storm.

Not only is budgeting not being effectively handled, but PREPA's lack of financial transparency has also contributed to its crisis: "the [Puerto Rico Energy] Commission and public have little knowledge of PREPA's spending and prioritization, and remarkably little information about PREPA's generators, transmission system, or reliability."⁶⁸ How can an organization be remedied if the alarm bells are not rung and a problem is left to worsen for decades? Because of its inability to communicate its issues, "it is not clear...that PREPA's top management understands the level of crisis or how to strategically invest, and there are indications that competency is mixed at the plant management level."⁶⁹ PREPA is short on both financial capital and human capital. To safely and appropriately meet demand, both more hands to repair a grid that needed to be replaced *before* a catastrophic hurricane season and more minds working to repair the systematic shortcomings ingrained in PREPA's operations are needed.

Financial distress and the ensuing managerial imprudence have crippled PREPA, preventing it from properly investing in the renewable solar energy infrastructure that it so desperately needs in favor of attempting to maintain the current state of sub-par operations. Despite the fact that these costly outages could be avoided with the addition of solar energy to PREPA's steam fleet to literally take a load off of these power plants (see below), the focus in a crisis situation is on the immediate and not the long-term.

⁶⁸ Ibid., 9

⁶⁹ Ibid., 28.

A. Palo Seco

The Palo Seco Power Plant's red and white striped stacks loom tall just a few miles across the bay from downtown San Juan. One of PREPA's most problematic holdings, Palo Seco was in bad shape even before Hurricane Maria, though it is the utility's fourth-largest plant and makes up around ten percent of PREPA's capacity. It is also a perfect example of PREPA's systematic disrepair. In mid-August of 2017, Puerto Rico experienced a 4.8 magnitude earthquake north of San Juan, and an ensuing emergency inspection of the Power Plant summarized by Island Structures Engineering, PC, a company that had previously inspected and reported on Palo Seco many times between 2011 and 2015, revealed several "critical" areas regarding the structural health of the plant, notifying PREPA well ahead of the 2016 report of needed repairs. These areas "pose the threat of imminent collapse or failure and pose a significant threat to both personnel and to the equipment supported thereon."⁷⁰ Two units, specifically, remained dangerously compromised after the minor earthquake to the point where they only performed to at most 25 percent of their strength and posed a hazard to workers if "wind loads are expected to exceed 50 mph."⁷¹ Category one hurricanes by definition bring winds that exceed fifty miles per hour. Category-five hurricanes, like Maria at its peak, exceed 156 miles per hour, three times stronger than an estimate of wind loads that could seriously damage an already weakened power plant.

The report also determined that managerial myopia and significant corrosion caused by neglect contributed to these structural threats. Because PREPA had not installed barriers to restrict access to dangerous area needing attention, underlying structural problems were not properly addressed and became "more critical." At Palo Seco, the influence of contractors and sub-contractors is also evident. The report is written under the assumption that contractors or even "a sub-consultant to the Contractor", independent of PREPA itself, are the entities

⁷⁰ "Puerto Rico Electric Power Authority Palo Seco Steam Plants Units 1,2,3 & 4 Emergency Structural Steel Assessment Report" 8.

⁷¹ Ibid., 10.

conducting the repairs since, historically, the staff of the inspectors had partnered with contractors. In its conclusion, the report stresses that the contractor conducting repairs ought to identify to Island Structures Engineering, PC any areas of corrosion that were not accommodated by specified repairs and any other locations requiring attention. With inspection and repair both conducted by third-party agencies on PREPA's payroll, fewer public employees of the Authority itself are involved or familiar with the processes of this power plant. After the destruction that Hurricane Maria added to this confusion, the Authority's hesitation to bring Palo Seco back online led some journalists and union representatives to speculate that the Authority had no intentions of solving Palo Seco's issues in the first place.

UTIER

Another big difference between the two utilities that mired FOMB activity managing PREPA and has challenged the utility's operations is the fact that Austin Energy employees are not unionized, whereas UTIER, the Union of Workers in the Electricity and Irrigation Industry, represents at least 4,800 PREPA workers.⁷² Led by Ángel Figueroa Jaramillo, UTIER is vocal in its criticisms of and demands from PREPA and is responsible for divulging information on PREPA's contractors and their activities that otherwise may not reach public awareness. The union conducts strikes and walkouts often, demanding stronger safety standards and better pay and pension. Austin Energy has less trouble finding and then managing linemen and other loyal workers because wages and work conditions are far better. Knowing that cutbacks will diminish its debt accumulation, PREPA is unable to mitigate labor strife and has collaborated less and less with UTIER, which draws more and more on Puerto Rico's rich history of workers championing their own rights. In the absence of other options when PREPA will not collaborate, UTIER has gone on strike after strike, resorting to drastic exhibitions of the limited power the organization does have.

⁷² "Prensa No Podrá Estar En Las Negociaciones de La AEE y UTIER."

Most recently, UTIER is demonstrating their disapproval of PREPA's management, the increased presence of contractors, and the proposed privatization of the utility, supported by the FOMB. In February 2018, when roughly 30 percent of the island still lacked consistent access to electricity, PREPA limited the working time of its street brigades even further, citing safety as the main reason for the decision. UTIER strongly criticized the decision, which stipulated that workers do not work to restore power on weekends. UTIER also continues voicing their opposition to downsizing of the workforce in general.⁷³ Historically, the union has wielded significant influence over the actions of PREPA management, demonstrating against increased contractor presence and the loss of benefits and winning small victories along the way.

The fact that a union affiliated with PREPA exists and the subjects of UTIER's demands tell enough about the conditions of the utility. In the face of managerial incompetency, leadership and policymaking falls to the employees who suffer increased workplace hazards or face consequences of other dangerous cutbacks. Without safeguards for employees provided by a well-funded firm or transparency and communication across all levels of an organization, it is more important for the Puerto Rican power workers to unionize and have a voice in the policymaking that determines the quality of their day-to-day lives than Austin Energy workers who can rely on the information given to them and know that they do not have to fight to ensure that money is put aside for their paycheck and, later, their pension.

One of UTIER's biggest demands is the reopening of the Palo Seco power plant after Hurricane Maria. According to PREPA, January 30th, 2018 was the estimated date that at least two of the islands four units would be back up and running. Considering the sorry state of the power plant before the hurricane, it is not surprising that the complex was in need of serious attention after the storm, but January 30th is almost a full four months after the storm landfall on September 20th. The dispute lies in the fact that the Island Structures Engineering, PC report on the status of the plant after a minor earthquake offshore says nothing about halting

⁷³ "Recortan el tiempo de trabajo de empleados AEE."

operations entirely at Palo Seco. This fact is highlighted by a delegation of the Puerto Rico Professional College of Engineers and Land Surveyors (CIAPR) that visited the plant after the storm and reported that the repairs could be completed in 21 days. Citing both the geographic importance of Palo Seco, which feeds most of greater San Juan and is located just across the bay, as well as the fact that it guarantees the reliability of the whole system, UTIER joined the CIAPR, pointing out that the neither PREPA nor the government had provided any findings to contradict the delegation of engineer's report. In a hearing held by the Committee for the Public Private Alliances of the Legislative Committee, Figueroa Jaramillo, President of UTIER, called out the neglect of Palo Seco and questioned who would take responsibility for not adopting remediation measures over the course of five years since "critical" areas were first described by Island Structures Engineering, PC. He further criticized management for not taking UTIER members (and PREPA employees) seriously on the grounds that they were not engineers.

The interim director of PREPA at the time did not attend the hearing, but he did leave a paper stating that of the four generators, four would be up and running by the end of January, one more would be in service by mid-May, and the last is completely out of service on account of a major repair to the generator, for which PREPA did not provide specific dates. The report culminates with a brief statement revealing that PREPA is currently "evaluating" alternatives for new systems of generation at Palo Seco and hopes to have findings by March 2018 – vague language that implies these new systems would also be the result of public private partnerships, which PREPA is fond of (see below) and could limit efficiency.⁷⁴

This reliance on contractors and indifference to the voices of third-party engineers and UTIER members all begs the question: why is it taking so long for Palo Seco to get up and running again? An exploration into PREPA's ongoing investments and recovery projects reveals the answer: increased reliance on contractors and public-private partnerships.

⁷⁴ Gerardo E. Alvarado León, "Reclaman Que Palo Seco Entre En Operaciones | El Nuevo Día."

MATS Compliance

Currently, PREPA spends hundreds of millions of dollars a year on the Aguirre Offshore Gasport (AOGP) project, originally intended to bring PREPA into full compliance with the Environmental Protection Agency (EPA) and its 2011 Mercury and Toxic Air Standards (MATS) clean-air requirements for power plants, which are directly responsible for the majority of United States mercury emissions. While some modern power plants are equipped with the ability to limit the amount of hazardous air pollutants released, almost half of all coal- and oil-fired electricity generating units in the United States do not have advanced pollution controls, including the ones that supply Puerto Rico with power.⁷⁵ In fact, fourteen of PREPA's units, comprising around 2,900 MW, which is more than half of PREPA's total capacity, the maximum electricity output of a generator under ideal conditions, are subject to MATS provisions. The rule set in place by the EPA requires the installation of new units or retrofitting of uncontrolled or inadequately controlled power plants by April 2015, with some exemptions.⁷⁶

To take advantage of compliance extensions, PREPA demonstrates its full understanding of the EPA rules and its ability to sidestep those rules to its own advantage. First, PREPA designated eight of its units as "limited use," meaning that in the eyes of the EPA those units would not contribute to substantial pollution by nature of being backup generators. But due to large system outages, PREPA is already unable to meet the true limited use description of those "limited use" units because they are used anyway. PREPA also relies on outdated technology to evade compliance. The EPA also does not consider combined cycle (CC) turbines as electricity generating units, and because PREPA operates some of the few CC units left in the country, it is able to sidestep having to update these plants (including Palo Seco) with pollution controlling functions. Interestingly enough, there is no evidence to suggest that PREPA was granted compliance extensions based off of these two exemptions, so it is appropriate to consider Spring

⁷⁵ US EPA, "Cleaner Power Plants."

⁷⁶ See note 50, 38.

2016 as the target date for PREPA's compliance with this regulation.⁷⁷ There are several possible solutions to the pollution issue, and PREPA not only failed to comply by the target date, but it still is not in compliance with MATS to this day.

PREPA could have either stopped using noncomplying units entirely or retrofitted those units with pollution controls, but instead, PREPA chose the most costly option: transition to natural gas as a fuel source by building an offshore gasport to service the Aguirre Steam Plant, one of PREPA's oldest and highest capacity units. The Aguirre Steam Plant is PREPA's largest plant and is located on the southeastern part of the island near the town of Salinas. The proposed gasport is a floating plant that converts natural gas from liquid form after it is imported to usable gaseous form (remember, there is no natural gas on Puerto Rico, so it is all imported expensively under Jones Act rules in liquefied form). The costs of this process are likely to be passed on to ratepayers, who already pay too much for their electricity as is.

Converting the plant to run off of natural gas requires technical expertise, a large capital investment, and lots of time. PREPA, unfortunately, had no surplus of any of those essentials. Starting in 2011, PREPA partnered with Excelerate Energy, a Texas-based company that operates offshore regasification platforms. A contract with Excelerate Energy provided PREPA with the technical know-how that it lacked in-house. In order to pursue the Aguirre Offshore Gasport project (AOGP), PREPA made enormous capital investments, tying up more and more funds that could have gone to any number of other cash-stricken projects or other pollution mitigating initiatives. The original target date for completion of a fully operating AOGP was 2014, but after complications inevitably arose, that date was pushed to 2018, which would have pushed overall compliance with MATS back to 2022, potentially. After Hurricane Maria, all bets for project completion and MATS compliance are off.

The current state of the Aguirre complex indicates that pursuing the Aguirre Offshore GasPort at the cost of other options may not have been optimal: evidence of increased outages

⁷⁷ Ibid.

suggests that while the Aguirre Offshore GasPort program was delayed, the Aguirre Steam Units themselves began to fail.⁷⁸ In other words, PREPA sunk so much money into the AOGP, that other cheaper solutions and even the necessary day-to-day functioning of the Aguirre Plant, though feasible at an earlier date, became unattainable. When PREPA delayed its compliance with MATS, it also accepted that its ability to function at peak capacity and properly service other languishing units in need of repairs, like Palo Seco, would be seriously impaired.⁷⁹

PREPA's financial decisions reflect its managerial paralysis, at once unwilling to invest more money into smaller power plant repairs or pollution-accommodating modernization but also unable to control the development of the in-progress, external, too-big-to-fail solution on which it now relies. As of Fall 2016, the AOGP was in the final stages of obtaining permits and engineering, but it was so far behind schedule that construction had yet to begin, though that did not stop PREPA for committing cash to the project. In July 2017, after authorization delays from the Federal Energy Regulatory Commission (FERC) and the National Environmental Policy Act (NEPA), Excelerate Energy cancelled the original contract.⁸⁰ Currently, the future of the AOGP is anything but certain.

One decision that has come back to hurt PREPA was committing money to the conversion of the Aguirre Plant to burn natural gas and be compatible with the offshore gasport facility itself. This overhaul required limiting the capacity of the Aguirre Plant, PREPA's largest, when work was underway. Once the upgrade is complete, converted units require natural gas, but PREPA began overhauling its existing units significantly *before* spending money to bring the AOGP itself online to regasify liquid natural gas to feed the newly improved units. This means that PREPA's system could no longer rely on those Aguirre units to burn petroleum fuel as usual, and that those units were neither burning petroleum nor natural gas and instead remained idle, limiting PREPA's overall capacity. In its entirety, the AOGP is comprised of

⁷⁸ See note 50, 91.

⁷⁹ *Ibid.*

⁸⁰ Lloréns Vélez, "Excelerate Renegotiating Aguirre Offshore GasPort Deal with Prepa."

several projects, both onshore and offshore, that include building a new pipeline in Jobos bay, the platform itself, and the conversion of two Aguirre CC units. This massive project was estimated to sum to a capital cost of at least \$552 million, including the cost of financing. Of this \$552 million, around \$339 million (just over 60 percent), went toward the construction of the floating platform itself, with the rest split between onshore steam and CC unit conversions and “back office components.”⁸¹ Notably this \$552 million did not include the required use of a floating storage and regasification unit vessel from Excelerate for fifteen years at present value of \$422 million, tying functionality of the project to Excelerate even more. With almost one billion dollars on the line, one would expect PREPA’s budget for this project to be nothing less than ironclad or, at the very least, accurate. Due to the number of contractors involved, however PREPA’s budget is unclear and representative of a rough estimate at best.

To actually realize this massive project requiring outside expertise and resources, PREPA has turned to different contractors. The aforementioned Excelerate Energy was contracted to build the actual offshore platform, while unit conversion to run off of liquefied natural gas was contracted out to Alstom Caribe, now merged with GE. At the time of this \$552 million estimate, PREPA relied on contract estimates it received from GE, since no official papers had been signed. The nature of GE’s involvement in the AOGP is unclear. According to PREPA in late 2016, there was no contract with GE for unit conversion, yet the multinational gave PREPA a \$41 million proposal for those services. The Synapse Energy Audit is straightforward when it considers the startling lack of information that PREPA provided regarding its contracts for the AOGP, documenting six “problematic” instances in the AOGP contracting process, noting that “PREPA failed to provide many of its contracts, and in some significant cases could provide little evidence that a formal bid or contracting process had been executed. PREPA’s timelines for contract costs and projects often could not be squared against the documentation provided.”⁸²

⁸¹ See note 51 above, 116.

⁸² *Ibid.*, 120.

PREPA's failure to provide documentation for a formal bid and specific timelines and costs of projects is hugely irresponsible and appears to be habitual, adding to the long list of files that could fill important lacunae in this investigation.

Adding to poor budgeting practices and inconsistency, when PREPA saw a \$20 million increase in the estimated cost of the offshore platform, it reduced its contingency holdback by \$2 million.⁸³ As budgets increase, contingency logically ought to increase in kind or at least not decrease. Cutting corners this way is intentional. One possible explanation behind decreasing contingency in this way is to reduce the final estimated cost as much as possible, resulting in an easier path to financing from capital markets. This is not the first time PREPA used reporting as an opportunity to change numbers around so that the final sum better fits its goals. Earlier, PREPA overstated the number of anticipated ratepayers and the potential revenues it would receive in order to issue the Power Revenue Bonds, Series 2013A (see above). These are examples of PREPA using reporting to its advantage to mislead potential financiers, a symptom of the company's lack of ability to fund its own projects or receive a loan from the government or another investor given its already enormous debt.

To finance the AOGP, PREPA has requested a loan guarantee from the Department of Energy on 80 percent of the total project costs, provided by a third party bank, which would significantly add to its debt.⁸⁴ PREPA finds itself in again in a vicious cycle: the utility needs loans to operate and sustain itself, but at the debt it has racked up from its loans prevents it from properly supporting itself financially and operationally. Not only is the AOGP a costly project in itself, but it would add even more debt to PREPA's already strained balance sheet, begging the question of why PREPA's management chose such an expensive solution when investments in other areas, particularly relatively cheaper renewable solar power, could have increased capacity and efficiency sooner, jumpstarting PREPA on a long-term transition to

⁸³ Ibid., 117.

⁸⁴ Ibid., 123.

energy independence and fully complying with MATS. Is the adherence to the AOGP simply an example of the sunk-cost fallacy, or is another variable contributing to PREPA's allegiance to this costly project?

PREPA has not clarified the circumstances of formal bidding on many of its projects, which implies that informal processes instead led to the resulting contract, suggesting that contractors were chosen reasons other than their individual ability, reputation, or the strength of their proposals. Neglecting to clarify specific timelines and costs of projects implies that PREPA itself is unfamiliar with the work of its contractors, a dangerous position to be in for any company let alone a public utility providing electricity to more than three million people. Later on, I will discuss PREPA's now infamous contract with Whitefish Energy following Hurricane Maria as well as the role of contracts in the gradual privatization of public utilities.

A Solar Solution

Recognizing the path that PREPA could have gone down underscores the tragedy of its present situation. PREPA investments and operations aside, incorporation of renewable technology is one possible grid solution to costly fossil-fuel based energy dependence. Photovoltaic energy sources, once thought to be too expensive due to the cost of their metal components, have dropped in price. In 2015, the technology approached significant grid parity across the world, which occurs when a new energy source can generate power at a "levelized cost of electricity" less than or equal to the price of power available from an existing energy grid.⁸⁵ This means that solar power is an acceptable substitute financially as far as power generation goes. Owing to geographic and climate limitations as well as existing infrastructure, the costs of installing photovoltaic systems vary by location and economy but have wholly decreased worldwide. Even in notoriously cloudy parts of the world like the United Kingdom, photovoltaic systems approach parity, a reflection of improvements in solar technology as well as reduction

⁸⁵ Meneguzzo et al., "The Great Solar Boom," 500.

in cost. As the solar industry grows, complementary innovations emerge yearly. The cost of lithium-ion batteries has fallen eight percent annually from 2007 to 2014 and keeps falling further, disrupting the utility industry in addition to the automotive industry.⁸⁶ These batteries are crucial for solar technology in particular because they are needed to fill the gaps in energy generation at night and during cloudy weather, another limitation of solar technology that has previously served as a barrier for commercial adoption.

This current innovation in solar and battery technology has some benefits for low-income, rural areas (especially tropical ones). First, off-the-grid solar options are becoming cheaper than clunky, unreliable diesel generators that are the usual backups during blackouts. Especially after Hurricane Maria, Puerto Ricans resorted to powering their homes, restaurants, hospitals, and department stores with expensive generators, a temporary solution that unfortunately became long-term. These generators also contributed to a fuel shortage on the island when Puerto Ricans bought gallons of gasoline especially for generators.⁸⁷

As far as off-the-grid solar and battery based power generation goes, “the biggest success comes from a combination of ‘pico-solar’ solutions up to ten watt, super-efficient appliances, and pay-as-you-go mobile money finance.”⁸⁸ The prospect of cheap and widely available home appliances with small but adequate energy production like rooftop water heaters could be the solution to the problem of rural electrification, especially when made financially accessible. In the case of an extreme natural disaster like Hurricane Maria, these appliances increase energy independence at a residential level and are more reliable than fossil-fuel powered backup generators. When a utility is not reliable, having these solar dependent appliances and an accompanying battery is an efficient and effective alternative that solves an issue for some of the poorest of the poor that struggle to electrify their homes regularly. Tesla already sells 14 kWh Powerwall battery packages for household energy storage as well as 200 kWh battery packages

⁸⁶ Ibid., 506

⁸⁷ Fausset, Robles, and Acosta, “Minus Electrical Grid, Puerto Rico Becomes Generator Island.”

⁸⁸ Koppelaar and Middelkoop, “The Tesla Revolution,” 83.

for commercial clients.⁸⁹ Recent advances in battery technology will only bolster the capabilities of these appliances and can increase the functionality of grid-reliant consumers as well. Unlike renewable wind power, solar energy is easily and more cheaply installed at a household level, which means that Puerto Ricans can help their island become energy independent by themselves becoming independent from PREPA's grid when they install solar panels. The development of lithium-ion technology created a successful off-the-grid solution, but while these low-cost, high-tech appliances and batteries have the potential to make a positive impact in rural locations on a household scale and have enabled some community centers to provide power, they are not the best long-term solution for Puerto Rico. These pico-solar appliances are band-aids on a much bigger problem that merits a much bigger, systemic solution. Puerto Rico needs grid transformation after decades of malpractice and the destruction of Hurricane Maria.

One ideal solar power solution for Puerto Rico would be photovoltaic panels on roofs and connected to the existing grid, especially given Puerto Rico's population density in its urban centers. A report published by The University of Puerto Rico at Mayaguez in 2008 determined that "approximately 65 percent of residential roofs can provide the total electrical energy, not power, that is generated in Puerto Rico." Knowing that 65 percent of residential roofs can provide the total electrical energy generated on Puerto Rico only serves to demonstrate the principle that, theoretically, photovoltaic systems could generate energy for the entire island alone. Puerto Rico is so well positioned for solar power that if the Puerto Rican government were to incentivize non-residential buildings to use photovoltaic panels, including government buildings, then the number of residential homes that would need to adopt solar paneling on roofs would decrease. When solar farms and wind, biomass, and oceanic sources of energy are also included, that figure will only decrease more. The report continues on to specify that "the energy generation potential is so significant that even ten percent of the households can provide

⁸⁹ Ibid., 40.

close to 20 percent of the overall energy demand” of 4,000 MW.⁹⁰ The U.S. Census reported that Puerto Rico has 1.2 million households, meaning that a target number of around 120,000 households with photovoltaic panels on the roof are necessary to efficiently generate about 20 percent of total energy demand from clean, renewable solar power.⁹¹

Because of its geographic location and climate, Puerto Rico needs a relatively small number of households to have “significant energy generation potential,” unlike other places in the United States. In comparison, Connecticut, which also has a population of 3.5 million people like Puerto Rico, has a total energy demand of about ten times as much as Puerto Rico with access to far less sunlight year-round.⁹² Connecticut has such a large energy consumption because of its colder climate and the resulting need for heating, which almost unnecessary in Puerto Rico. As far as energy generation potential goes, solar is a truly exceptional alternative. That Puerto Rico can accommodate such a high percentage of its own energy demand with solar energy is a positive consequence of its geographic location and demographics that should not be ignored. According to the U.S. Census Bureau, there are approximately 147,316 households in San Juan that alone could feasibly provide almost a quarter of the island’s entire energy demand.⁹³ That is a huge potential for significant solar contribution that other parts of the United States cannot hope to achieve.

While solar energy appears like a promising solution to Puerto Rico’s energy needs, if photovoltaic panels and the structures that support them are just as vulnerable to a hurricane as the existing grid, then they cannot adequately serve as an energy alternative. The good news is that a recent report from the National Renewable Energy Laboratory (NREL) compares hardware issues across 50,000 photovoltaic systems in the United States and indicates that photovoltaic systems are incredibly resilient in inclement weather and perhaps even more so

⁹⁰ Dr. Agustín A. Irizarry-Rivera, Dr. José A. Colucci-Ríos, and Dr. Efraín O’Neill-Carrillo, “Achievable Renewable Energy Targets For Puerto Rico’s Renewable Energy Portfolio Standard.”

⁹¹ “QuickFacts Puerto Rico.”

⁹² “Connecticut Profile: State Profile and Energy Estimates.”

⁹³ See note 81.

than traditional electrical generation alternatives like power plants. The NREL found that “the probability of PV system damage because of hail is below 0.05%.”⁹⁴ After a severe hailstorm that damaged car windows and local homes passed over the NREL’s main campus, only one panel was discovered damaged by micro-cracks in the glass.⁹⁵ These photovoltaic modules are clearly durable in the face of hail and other potential debris thrown at them during a hurricane. As for hurricane-strength winds, the solar panels on top of the Caribbean Veterans Affairs Hospital in San Juan were buffeted by 190 mile-per-hour winds from Hurricanes Irma and Maria and survived with minimal damage, allowing the hospital to care for its patients when its backup generator had failed and the rest of the city was without power.⁹⁶ When installed properly with flexible but strong anchors, a photovoltaic system is disaster resilient. In contrast, periodicals cite that as much as 85 percent of Puerto Rico’s entire energy grid was destroyed in Hurricane Maria with most of that destruction taking the form of downed power lines and towers – all infrastructure that solar panels do not need.⁹⁷ Considering the tenuous repair status of Palo Seco that specified vulnerability if winds surpassed 50 miles per hour, it is easy to see how Hurricane Maria was able to wipe out so much of PREPA’s power generating units. Not only have photovoltaic systems reached grid parity and, thus, become economically feasible, they are also better equipped to weather damaging storms that Puerto Rico will surely face again at some point in its future when they are installed properly.

Unfortunately, photovoltaic panels are only as good as the roofs that they are hitched to. Just as there are building codes for Earthquake prone cities on the Pacific coast, other codes are designed to protect structures from Hurricane strength winds, rain, and debris. The sad reality of Puerto Rico is that the majority of homes and other standalone buildings on the island were built before 2011 when the island adopted the International Building Code requiring residences

⁹⁴ D. C. Jordan and S. R. Kurtz, “Reliability and Geographic Trends of 50,000 Photovoltaic Systems in the USA.”

⁹⁵ “Hail No! National Lab’s Solar Panels Survive Severe Storm.”

⁹⁶ “Solar Array Mounted with FastRack 510 on VA Caribbean Medical Center in Puerto Rico Survives Hurricane Irma and Hurricane Maria.”

⁹⁷ Campo-Flores, “Puerto Rico’s Power Restoration Slowed by Miles of Downed Lines.”

withstand winds up to 140 miles per hour. In addition to rural residences that may have escaped scrupulous regulation, older homes were only built with 125 mile-per-hour winds or even less stringent standards in mind.⁹⁸ This lack of resistance to hurricane-strength winds could prove to be one of the biggest barriers of solar adoption residentially. Though cheaper than ever before, the installation of a photovoltaic system as opposed to simply tapping into an existing grid is still an investment, and that investment is useless if it is washed away in a storm. Puerto Rico needs to better adhere to disaster-resistant building codes in order to successfully incorporate solar power generation on government buildings. Though challenging, this barrier can be effectively lowered, especially with help from the government. As Puerto Ricans rebuild their homes, schools, apartment buildings, and post offices and other government buildings, they have the chance to ensure code-compliant construction that support photovoltaic systems and can tolerate storms.

In 2014, Siemens Power Technologies International (PTI) conducted a study to determine the possible amount of renewable generation that could be incorporated in PREPA's system given its conditions in 2015. This study arose in response to 2010 legislation that postulated a goal of 12 percent of Puerto Rican power generation from sustainable and alternative energy by 2015. Although Siemens (PTI) determined that PREPA would fall short of the 12 percent milestone by 2015, the report does reveal that PREPA had already evaluated up to 34 renewable projects (5 wind and 29 photovoltaic) to potentially meet its renewable generation goal. These projects are in addition to the Pattern and Punta Lima wind projects and the AEA Ilumina photovoltaic plant. Of the entire report, which stipulates assumptions of compatibility, efficiency, and a peak daytime load of 3,169 megawatts, the biggest takeaway is not just the fact that significant generation from renewable sources was possible for PREPA, but rather the fact that PREPA was aware of this possible solution.

⁹⁸ ABC News, "Buildings on Puerto Rico Unable to Withstand Category 5 Storms."

At the time this document was written, the authority would have had almost a full two years to enact changes in favor of reaching that 12 percent goal on time. Granted, two years is a short amount of time for the extent of work that renewable integration required and, unfortunately, there is little evidence to support the possibility that PREPA even started to enact change.⁹⁹ Still, PREPA could have invested in renewable technology, particularly photovoltaic panels, to generate power and ease the load bearing of its current system. The question of why PREPA chose such a costly and strategically poor solution to its MATS problem like the Aguirre Offshore Gasport rather than a renewable project can be answered by taking a closer look at PREPA's management, introducing more stakeholders that offer insight into some of PREPA's stranger and more irrational decisions.

Governance of PREPA

The Governing Board of Authority that presides over PREPA consists of nine members, six of whom are appointed by the island's governor. Because the Governor of Puerto Rico determines many of the members of the board, a change in governmental leadership even within a party often means a change of the board and the policies that the board pursues. This Governing Board has the power to elect a Chairman and Executive Director (the Chief Executive Officer) of the company, so big political changes lead to managerial changes throughout all levels of decision making at the utility but especially at the top.¹⁰⁰ In 2016 as the debt crisis reached its height, Ricardo Roselló of the New Progressive Party was elected governor of Puerto Rico. When choosing PREPA's Governing Board, Governor Roselló knew to select a group of individuals sympathetic to his policies. In an interview with *El Nuevo Día*, Puerto Rico's leading periodical, Roselló comments that "the Governor and the Executive branch should feel confident that the Board and the executive directors will in fact execute our administration's strategies and

⁹⁹ "PREPA Renewable Generation Integration Study."

¹⁰⁰ "By-Laws of the Puerto Rico Electric Power Authority."

public policies” when asked if he trusted the board.¹⁰¹ At the time the Roselló administration came to power, PREPA was negotiating a restructure agreement with its bondholders, and Roselló allegedly saw the current board as too sympathetic to the needs of creditors, rather than the utility and his administration. After his increased participation in the deal, the restructure agreement fell through. Knowing that the policy wishes of the Governor are behind leadership appointments and the resulting officers’ decisions reveals some of the motivations behind PREPA’s actions and current sources of conflict with the Federal Oversight Management Board.

After his election, Governor Roselló quickly appointed a Governing Board of PREPA that fell in line with his platform of keeping rates low and a path to compromise with PREPA bondholders. Governor Roselló suggested Ricardo Ramos to serve as Executive Director of PREPA, and the PREPA Board confirmed Ramos in March 2017. Ramos later described receiving PREPA as inheriting “a junker” because the agency had run out of cash nearly two years earlier.¹⁰² Given his long history working as an engineer in the private sector and a six-year stint at PREPA in the 1990s specifically conducting system planning and research that involved managing power purchase and operating agreements and the Sabana Llana Battery Energy Storage System (BESS), Ramos knew well what he was “inheriting.”¹⁰³ Designed to reduce load-shedding, which occurs when electricity supply is limited to reduce the strain on generating units, the Sabana Llana BESS increased the availability of other PREPA units and provided energy storage for immediate response within PREPA’s network. Any work on this project, especially leading up to its inauguration and beginning of operations in late 1997 would require detailed knowledge of PREPA’s load forecasting, power flow, and overall stability. Previous experience working at the utility, however, may not have been the only reason Ramos was chosen as PREPA’s chief executive.

Since working at PREPA in the 1990s, Ramos spent time at a number of different

¹⁰¹ Caro González, “Roselló Wants Trustworthy PREPA Board Members.”

¹⁰² “Puerto Rico’s Storm of Misery.”

¹⁰³ “Ricardo Ramos | LinkedIn.”

engineering firms PREPA contracted work with, most recently serving as CEO and Managing Partner of Earthshine Corp. before becoming CEO of PREPA. According to its website, Earthshine appears to be a Bechtel or a Fluor or a Blackwater in the making that specializes in “products and services for the energy, electric power, water, transportation, and other infrastructure sectors” by being a “total solutions” provider: everything from initial consulting and planning to project management and operations services will be conducted by Earthshine.¹⁰⁴ Being a total solutions provider makes Earthshine attractive from a contracting point of view since it would allow the contractor to worry about pay and little else, since Earthshine would take care of all other aspects in house, though these services of course increase the bill.

While at Earthshine, Ramos once presented at a conference sponsored by the think tank Asociación de Productores de Energía Renovable (Association of Producers of Renewable Energy, APER) on the feasibility of renewable energy on Puerto Rico, highlighting how “Puerto Rico has the basic fundamentals to make renewable energy a reality,” including, no native fossil-fuel energy sources, a need for economic development and job creation, and a highly trainable technical workforce.¹⁰⁵ Perhaps the most interesting set of slides is one that compares production cost over time in two scenarios: the first with natural gas “from USA” and the second without. In both cases, a renewable portfolio results in the lowest cost for PREPA in cents/kWh, though the most striking difference between the two is how much cheaper production cost is with gas from the United States (See Appendix G). The presentation is dated only six days after the release of the Siemens PTI report in early 2014, and cites the same legislation and target goal of 12 percent renewable generation by 2015. Slides later, Ramos continues to sing the praises of renewable energy, claiming cumulative savings of \$17.6 billion and even noting a dip in PREPA savings in connection with natural gas imports from the United States for certain years. The

¹⁰⁴ “Earthshine Corp.”

¹⁰⁵ Ricardo L. Ramos, “Renewable Energy: Myth or Reality.”

presentation even mentions the need for MATS compliance.

By attaching his name to this presentation, Ramos proves he is aware of the benefits and challenges of renewable energy, comparing Puerto Rico's variable photovoltaic output to Hawaii's and illustrating how cloud coverage can prevent solar power generation in the short-term by way of PowerPoint graphics. Ramos then details PREPA's specific system variability challenges and even proposes a few solutions (including Battery Energy Storage Systems, which he is intimately familiar with). In the final slides, Ramos discusses PREPA's barriers to financing renewable energy projects and emphasizes that long-term financing is no longer a viable option for PREPA, but highlighting that the rate of returns on utility scale solar projects in Puerto Rico hover between 8 to 12 percent.

It would appear that not only does Earthshine encourage the adoption of solar power on Puerto Rico, but that Ricardo Ramos, who would later head up PREPA himself, without a doubt knew of Puerto Rico's renewable energy potential as well. This discovery further demonstrates just how ill fit the Aguirre Offshore Gasport is for the utility and begs the question of why PREPA pursued that project at a critical time when its infrastructure was failing rather than a cleaner, reliable, and more renewable solution. Was Ramos overruled by others? Was he and other PREPA executives hedging their bets? Was the AOGP PREPA's desperate attempt at window dressing that would create a Potemkin village convincing enough to fool other investors into taking the bait and sending PREPA money?

Cursory investigation of Earthshine reveals an alternative reason for the AGOP. The firm advertises its local knowledge in the Caribbean and contacts with PREPA and PRASA and markets products or services related to natural gas, and it is readily apparent that Earthshine, whose name now seems Orwellian to say the least, is responsible for facilitating PREPA's contract with Excelerate Energy, the company behind the Aguirre Offshore Gasport. Curiously enough, PREPA and Excelerate Energy are the only two companies listed on Earthshine's

outmoded website under “Who We Work With.”¹⁰⁶ That the company had a role in connecting PREPA and Excelerate Energy and that Ricardo Ramos was involved to his benefit is not coincidental, it is undeniable. That this experience contributed to Ramos’s appointment as CEO of PREPA during the same time period as the process to build the AOGP gained traction is likely. Also likely is that Ramos’s experience at Earthshine contributed to his attitudes favoring contractors and public-private partnerships to PREPA’s detriment, even fossil-fuel focused contractors like Excelerate Energy, which would come back to bite him after the Whitefish Scandal in the months following Hurricane Maria (see below).

Understanding the ramifications of privatization and public-private partnerships is the final lens necessary through which any observer can see that the Puerto Rican *pueblo*, specifically PREPA and its supporters, are victims of disaster capitalists enabled by the island’s neocolonial relationship with the United States and supported by a neoliberal narrative.

¹⁰⁶ “Who We Work With - Earthshine Corp.”

Part III: Privatization in Action

PPPs, Privatization and Disaster Capitalism

A contract with another company providing a service is a “public-private partnership” (PPP), which is the privatization of at least one function of a public agency, in which customers or a public authority provide a stable source of profits for private companies in exchange for financing, constructing, or operating one element of the authority under the guise of increased efficiency and better financing. To an extent, contracts are beneficial for a public authority since there are, objectively, some things that the private sector could do better, but an abundance of contracts and contractors who do not communicate with one another and drain a nationalized company of its cash and rack up debts is anything but beneficial. Though they might sound attractive, these public-private partnerships and the contracts that create them, like the one between Excelerate Energy and PREPA, for example, undermine the mission of a public authority to provide quality, unbiased service to all of its customers.

Being partnerships, the creation of PPPs in public agencies is partially attributed to civil servants with a past history of serving as private sector executives as much as the private sector executives themselves. After all, if time and money goes to an expensive project with a private firm, it only makes sense to put an already familiar individual in charge. This reality is evident in Ricardo Ramos’s stint as CEO of Earthshine before being named CEO of PREPA. Unfortunately, the revolving door between the public and private sectors often means that the best company may not get the contract while the best-connected company will in an unfair bidding process.

Because PPPs and their contracts are designed to benefit the private sector, cost and profit take precedence over completion. Nowhere is this better seen than in the aftermath of Hurricane Maria. At one point, between the Army Corps of Engineers and PREPA, an estimated 6,200 workers poured into the island to repair transmission and distribution lines. Itself a public authority, the Army Corps of Engineers gave major contracts to Fluor Corporation, a

Texas-based construction behemoth that has an established history of public sector partnerships, especially with the Department of Defense. By mid-February, however, Fluor's workers started to leave Puerto Rico at a point when more than a million Puerto Ricans still did not have power. Though there was much work still to be done, particularly in the mountainous central regions of the island, Fluor had already billed the maximum amount under its \$750 million contract, so the corporation instructed its workers and subcontractors to pack up and head home. Residents of still unpowered areas criticized Fluor for working slowly and squandering the money available in its contract, especially when inefficiently shuffling work out to more subcontractors.¹⁰⁷

Privatization is one step further than a PPP and means that an entire authority is sold off from the government to usually foreign hands, rather than just a core set of an authority's services. The rise of PPPs and privatization is also directly associated with the rise of neoliberal regimes and their fiscal rules. Neoliberalism preaches limited government spending but still requires investment in public services and encourages public services themselves to be profitable market opportunities. PPPs and privatization historically emerge in a neoliberal environment because they appear to be solutions to these limitations. Countries (or unincorporated commonwealth territories like Puerto Rico) need quick cash to pay off their debt, much of which might be held by a nationalized company that itself can no longer access the funding it needs since investors cannot confide in its ability to repay the debt it issues.¹⁰⁸

Before he was elected as Governor of Puerto Rico, Ricardo Roselló was a vocal defendant of neoliberal ideas and PPPs. In 2015, even before PROMESA, Roselló wrote as a guest contributor for *Forbes* magazine and explained his free market sympathies, outlining his criteria to rescue Puerto Rico from its debt and regain investor confidence. First, Roselló called for the dismantling of the "costly" and "ineffective" government apparatus, meaning the reassessment

¹⁰⁷ Robles, "Contractors Are Leaving Puerto Rico, Where Many Still Lack Power."

¹⁰⁸ Hall, "Why Public-Private Partnerships Don't Work: The Many Advantages of the Public Alternative."

of the 118 agencies under the executive branch “to determine if some of them can be consolidated, delegated to the private sector, and which ones are simply not necessary.” Doing so would also eliminate excess money spent on the government’s administrative structure and the debt that some of those agencies bring, a definitively neoliberal principle. In the article, Roselló strongly avers that public-private partnerships would improve quality and accessibility of infrastructure at a lower cost as well as long-term “repayment guarantees” to bondholders. This repayment guarantee would raise bond ratings and entice income from investors, but Roselló’s beliefs seem to have been predicated on an alternate reality in which PPPs are financially beneficial for public authorities, rather than insanely overpriced and debt-inducing. Nowhere is this clearer than in PREPA’s experience after Hurricane Maria. That being said, Roselló is acutely aware of the confusion of businesses coming to Puerto Rico expecting to do business in the United States and finding out that only certain rules apply.¹⁰⁹ Roselló’s actions throughout his term consistently fit this narrative. Having bought into the story that PPPs and privatization are what is best for Puerto Rico’s government, he took steps within his power to support those initiatives.

Especially faced with extreme damages from a natural disaster, Roselló would not miss the opportunity to push for the dismantling of the government and encouragement free-market reforms he believed will bring employment and prosperity to the island. When viewing the decline of PREPA from this perspective that takes into account neoliberal policy, it is apparent that the eventual dismantling and privatization of the electric authority was not accidental. Roselló and others in power seized the opportunity that Hurricane Maria gave to them and enacted a privatization plan.

In her seminal work on neoliberal economic ideology, *The Shock Doctrine*, Naomi Klein offers a comprehensive history of the rise of neoliberal economic shock policies around the world. Simultaneously, she describes stifling debt and national disasters, the resulting

¹⁰⁹ Roselló, “A New Path For Puerto Rico--Which Doesn’t Include A Washington Bailout.”

privatization, and the human cost of those policies and privatizations. In country after country around the world, she shows the impact of the economic movement that Milton Friedman of the University of Chicago launched in the second-half of the twentieth century and its tenets of privatization. According to Klein, “under Chicago School economics, the state acts as the colonial frontier, which corporate conquistadors pillage with the same ruthless determination and energy as their predecessors showed when they hauled home the gold and silver of the Andes.”¹¹⁰ The case of Puerto Rico and its disadvantaged and mismanaged public utilities aptly matches the examples of neoliberal privatization described. While the financial crisis acted as enough of a disaster to push public authorities into private hands, no opportunity ever left Puerto Rico more ripe for privatization than Hurricane Maria. Both the debt crisis and the hurricane attracted disaster capitalists.

Disaster capitalism is the prospect that multi-national companies seek out the aftermath of disasters as new profit frontiers. Klein proposes, through case studies from South Africa in the throes of apartheid to the emergence of Russia after the fall of the U.S.S.R. to a deluged New Orleans after Hurricane Katrina, that the chaos and human displacement following these disasters, either natural or economic in nature, is enough to both encourage already debt-riddled nations to sell off valuable public authorities and to distract and suppress citizens from democratically voicing their discontent with privatizations. Puerto Rico and PREPA, its most at-risk nationally controlled authority, appears to be another case study in the making. Already, the island sold off its previously state-operated telephone communication services and, more recently, its airports.

Privatization on Puerto Rico

A crippling financial crisis was enough of a disaster to serve as impetus for more PPPs and privatization. The Puerto Rican government has often resorted to privatization. In 1999, the

¹¹⁰ Klein, *The Shock Doctrine*, 242.

government of Pedro Roselló, father of the current governor Ricardo Roselló, privatized the Puerto Rico telephone company, the nationalized communications service. A sale represented a quick way to pay off debt (and raise money for the GDB's infrastructure fund). The decision was met with a union-promoted strike and much popular dissent.¹¹¹ More recently, one of Ricardo Roselló's predecessors Luis Fortuño wrote a contract for the sale of the Luis Muñoz Marín International Airport in San Juan (LMM) to Aerostar Airport Holdings, owned in part by both Mexican and German entities. Situated in the island's capital of San Juan, the airport serves as a major link between Puerto Rico and the mainland United States. Those in favor of its privatization pointed to airport's pressing need for rehabilitation and modernization, especially regarding tourism. Those opposed were concerned with airport workers' job security, an increase in prices, and a decline in passengers and routes at smaller, regional airports. One passenger remarked that with "so many privatizations, the country stays in the foreigner's hands, although it governs people from here." Money from the sale went toward paying off the Port Authority's debt.¹¹²

When the Puerto Rican government and PREPA as an agency ran low on funds and then were prevented from borrowing money, they either completely privatized certain services or embarked on a number of PPPs as a way to maintain public infrastructure, like the many maintenance jobs for Palo Seco. With these PPPs, however, came long-term liabilities to fund projects that reached new heights both in scale and in price, like the Aguirre Offshore GasPort.

Though promoted by international financing institutions like the World Bank and the IMF, evidence from around the world suggests that fiscal problems worsen as a result of PPPs (as they did on Puerto Rico) primarily because the structure of the agreement hides massive public liabilities needed to pay companies for their services. In the short term, public authorities like PREPA see a drastic reduction in expenses and, thus, an increase in previously unavailable

¹¹¹ Navarro, "Plan to Sell Puerto Rico Phone Company Leads to Strike."

¹¹² "Preocupados Por La Privatización Del Aeropuerto Luis Muñoz Marín -Vídeo."

funds to fight either a long-term debt issue or bolster current operations. Though short-term gains are made, public authorities are forced to surreptitiously issue long-term debt in order to pay for absurdly expensive contracts. Even worse, these contracts often have vague or excessive terms like the Whitefish contract, in which the partnering company prioritizes their profit (see below). The result of this process for the public authority is increased debt, decreased access to funding, and, thus, more contracts and privatization.

The systematic gutting of the Corpus Account, the Puerto Rican Government Development Bank's infrastructure fund financed earlier by the sale of the telephone company, in order to issue more debt is an example of neoliberal policy favoring large, private multinationals in practice. The result was excessive funding limitations placed on PREPA *and* the increase of long-term debt obligations. Addressing sovereign debt became more of a priority than infrastructure. PREPA, in addition to Puerto Rico's other public authorities, suddenly was unable to rely on the Corpus Account for funding and was forced to increase the amount of PPPs to avoid being wholly privatized and sold off by the government, yet PPPs and their barely viable infrastructure projects simultaneously became a more expensive option since PREPA had to issue more and more debt. Caught in a relentless Catch-22, PREPA had no choice but to give out more contracts to stay on its feet. As noted earlier, the debt that strangled PREPA and forced the agency to dig itself deeper and deeper into a hole is a direct byproduct of Puerto Rico's neocolonial relationship with the United States. Removing the Corpus Account is one example of the Puerto Rican government favoring PPPs in the face of a financial crisis and placing more and more of Puerto Rico's public services into private hands.

Hurricane Maria and PREPA's Contractors

A disaster by all measures, Hurricane Maria is one of the most destructive hurricanes in memory. The storm slammed into the east coast of Puerto Rico on September 20th and poured over the island for an entire day, ripping off roofs, flooding rivers, and downing miles of power

lines. For weeks, food, water, and gasoline or diesel were not readily available, but for months, there has been no power. The state of PREPA's power generation, transmission, and distribution made the entire system extremely vulnerable to a storm of even lesser intensity than Maria. It only took a storm of Maria's caliber to reveal the true basis of this particular crisis and others on the island: the PREPA problem is more a symptom of neglect caused by neoliberal policy decisions designed to benefit corporations at the expense of the public. For example, *El Nuevo Día* reported in 2014 that Puerto Rico currently imports almost 90 percent of daily-consumed goods, and that the island is severely lacking the capacity to produce its own foodstuffs to satisfy its population.¹¹³ Because farmland on Puerto Rico historically went toward cash crops like sugarcane, corn, and coffee, other crops are not as economically valuable to producers, especially given the economies of scale that larger, non-Puerto Rican companies operate with. Given Jones Act stipulations, this need for imports increases the Puerto Rico's cost of living and dependency, where, in 2013, 57 percent of children lived in poverty, more than twice the rate for the entire United States.¹¹⁴ Although PREPA is the main focus of this paper, the electric power industry was not the only sector on the island to languish under decades of mainland political and economic influence that prevented self-sufficiency and favored profit-making, nor was it the only one on the island to fail in the aftermath of Hurricane Maria to great human cost.

Hurricane Maria was so destructive that in late January 2018, four months after Hurricane Maria, barely half of all of PREPA's customers had power, leaving more than 450,000 people in the dark. In the immediate aftermath of the Hurricane and for months afterward, much of the relief effort headed up by contractors concentrated on urban centers, neglecting poorer and more rural communities. Unfortunately, this contracted recovery work is the same caliber as the work that horribly mismanaged PREPA's daily operations before the hurricane.

¹¹³ "Expertos alertan sobre la inseguridad alimentaria en Puerto Rico."

¹¹⁴ "Kids Count 2015 Data Book: State Trends in Child Well-Being."

A. Whitefish Energy

The Whitefish Energy scandal is one of the most renowned contract fiascos on Puerto Rico. About a month after Hurricane Maria, tiny, Montana-based Whitefish Energy announced that they won a \$300 million contract with PREPA for recovery and reconstruction. Controversy and indignation immediately followed when media coverage following the Hurricane and relief efforts questioned how a two-year-old firm with few employees could have possibly landed or ever hoped to complete such a large project. Indeed, the circumstances behind the selection of Whitefish are murky at best, and Ricardo Ramos, then PREPA's CEO, offered little clarification. To different news outlets and in the hearings that followed, Ramos gave contradicting justifications for his selection of Whitefish.

To the *New York Times*, Ramos commented that he chose Whitefish because he expected the United States Army Corps of Engineers to pay the company, sparing PREPA from even more expenses. Later, Ramos told Congress that he chose Whitefish because he was unable to find housing for so many workers borrowed from mainland utilities as a part of mutual aid agreements, the usual route public utilities pursue in the aftermath of a disaster. Yet there is no evidence to suggest Ramos even considered mutual aid agreements. In fact, the American Power Association, which coordinates mutual aid for public utilities, reportedly never received a request for help from PREPA until the end of October, two weeks after the Whitefish contract was signed.¹¹⁵ Mutual aid agreements are designed to function at cost, sparing any utility recovering from damage (like those in Florida after Hurricanes Irma and Maria) exorbitant fees. Further, mutual aid agreements are a way for utilities to compare best practices, as workers facing different challenges across different geographies can offer their own solutions to common problems. Released e-mails later revealed that Whitefish was no more successful at finding housing than any public company theoretically would be, further calling into question Ramos's

¹¹⁵ "La APPA Dice que Hoy Fue que Recibió la Petición de Ayuda de La AEE."

justifications.¹¹⁶ At every turn, Ramos chose a contractor over a mutual-aid agreement.

One speculated reason behind the choice of Whitefish despite other conventional, cheaper, and arguably more effective options like mutual aid agreements is the connection between the company and the Trump's Secretary of the Interior, Ryan Zinke. Zinke not only hails from Whitefish, Montana but Zinke's son also previously worked for Whitefish on a project in Washington state. Given the political environment PREPA and Puerto Rico faces without representation, it is not surprising that a major utility would try to curry favor with powerful decision-makers, though that motivation, if true, is ethically dubious.

Andy Techmanski, CEO of Whitefish Energy Holdings, LLC, states that they company was awarded the contract because it was "the first to show up on the island" and because it did not ask for any payment in advance, unlike mutual aid agreements. Regardless of what rationale Ramos cited for choosing Whitefish, no formal process with background checks or bids took place. Ramos and Techmanski supposedly signed the problematic contract by the light of their cellphones.¹¹⁷

Many of the issues with the Whitefish contract mirror issues with all cases of privatization or public-private partnerships. For starters, the Whitefish contract charges high rates for its labor at \$240 an hour for a general foreman and even more expensive per diems. Employee flights to Puerto Rico are billed at \$1000 each way, well above the normal price. The highest rates came for what Whitefish, a small company, then charged its own subcontractors specifically for transmission system restoration. A mutual aid agreement could have provided the same services at a much cheaper cost without exorbitant subcontracting, in which a general contractor cost \$336 an hour.

Also written is that PREPA confirms FEMA has reviewed the contract by PREPA's signing on, and that the contract is an acceptable form to qualify for funding from FEMA or the

¹¹⁶ Robles, "C.E.O. of Puerto Rico Power Authority Resigns."

¹¹⁷ Acosta and Healy, "From Montana to Puerto Rico, a Small Firm Strikes a Powerful Deal."

federal government, yet FEMA claims that any language implicating the federal agency is wholly inaccurate. While FEMA did announce it would give at least \$215 million to PREPA alone for power restoration and in the months to come would grant homeowners and business owners their own funds for recovery, it did not commit to funding any of PREPA's work with Whitefish. FEMA also stipulates that any applicants for public funding that fail to follow its guidelines for procurement, including PREPA in this case, risk being not reimbursed.

Even more suspicious is a provision in the contract that restricts which parts of the agreement can be audited and which cannot: "in no event shall PREPA, the Commonwealth of Puerto Rico, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives have the right to audit or review the cost and profit elements of the labor rates specified herein."¹¹⁸ Determination of labor rates and the profit elements therein would be the priority for any auditors investigating both the contract and the relationship between the two parties, especially in a contract specifying a price for its own services that is almost \$100 higher per hour than for the subcontracting it arranges.

To further bind PREPA to the agreement, Article 29 of the Whitefish contract asserts that failure to procure funding does not release PREPA from payment. The contract also states that PREPA is bound to compensate Whitefish for any necessary demobilization expenses in the case of termination.¹¹⁹ Again and again, the contract protects Whitefish Energy and frequently does so at the literal expense of PREPA. The degree to which Whitefish has thoroughly covered its own hide makes the agreement even more suspicious, implying that the authors of the document knew such protections would be necessary given the high likelihood of the deal going sour, which it eventually did. Governor Roselló's office began an audit as soon as the deal came to light, and the FBI also began investigating. Ricardo Ramos resigned the position of PREPA C.E.O. effective November 11, 2017, just a month after the contract was initially signed.

¹¹⁸ "Emergency Contract for PREPA's Electrical Grid Reconstruction."

¹¹⁹ Laurel Wamsley, "Here's What's In That \$300 Million Whitefish Contract."

B. Cobra Acquisitions, LLC

Less covered by the media but far more expensive for PREPA and Puerto Rico is the contract with Cobra Acquisitions, LLC and a developing scandal implicating the United States Army Corps of Engineers (USACE). In early January 2018, the USACE allegedly stormed a PREPA's Toa Baja warehouse at Palo Seco and discovered materials that could have been used to repair Puerto Rico's ailing grid. PREPA, on the other hand, alleges that not only did the USACE already have to the warehouse and knowledge of its contents but also that the materials came from bonds issued for particular lines and for that reason could not be used to aid general recovery efforts.¹²⁰ UTIER denigrates both the USACE and PREPA and claims that the USACE "is accusing PREPA of doing something that they are doing on a larger scale." Fredyson Martinez, vice president of UTIER, tells reporters that concrete and metal poles as well as electrical wiring are stored at a warehouse in Ponce on the Southern end of the island controlled by the USACE. When asked about the photos UTIER had obtained of the warehouse and the materials at the site, the USACE responded that "with the increase of materials arriving to the island, we have increased storage capacity, and contractors are able request materials from one of our distribution points for upcoming work sites." Because the USACE relies so heavily on subcontractors, it hoards valuable, crisis-relieving supplies for those contractors' sole usage, while PREPA staff (and UTIER members) could be working with better resources themselves to get the job done, rather than having to reuse or repurpose old parts that create a complicated concrete and metal patchwork that must support an entire grid.¹²¹

Indeed, while security contractors on Puerto Rico had access to Palo Seco and its storage areas as early as late November, PREPA linemen and other non-officials, including Union members, had restricted access for weeks, preventing them from accessing the warehouse or its contents.

¹²⁰ "Governor Asks Justice to Probe USACE Claim of 'Missing' Puerto Rico Grid Materials."

¹²¹ Aronoff, "Puerto Rico Utility Workers Charge That Federal Government Is Hoarding Reconstruction Supplies."

It is possible that PREPA's contract with Cobra Acquisitions, LLC, a subsidiary of Oklahoma City-based Mammoth Energy Services is behind both PREPA's and the USACE's desire to hide these materials.¹²² At the end of February, PREPA more than tripled the size of Cobra's contract to \$945 million, a boon to the large construction company whose stock soared. Cobra reported that, instead of PREPA or the USACE, Cobra would be responsible for sourcing the materials and equipment for its restoration work, and that announcement is confirmed in their contract.¹²³ By providing its own equipment, Cobra can charge PREPA much more, and it did. But this contract point contradicts PREPA's claims that the materials lying in PREPA warehouses could not be used immediately for restoration purposes. These crucial recovery materials appear to be sidelined because Cobra is now supplying its own recovery materials.

This surge of PPPS after Hurricane Maria further contributed to PREPA's decline. The authority soon found itself embroiled in contracts and executing less and less of its own operations, leaving its own management, the government, and PROMESA overlords to question its worth as a public utility before the arrival of one of history's most destructive storms. After Hurricane Maria and the resignation of Ricardo Ramos, PREPA's fate was sealed.

UTIER and Privatization

No one group knows PREPA better than UTIER, and for that reason it is not a stranger to holding PREPA or anyone else intervening with PREPA accountable. In the months following failed recovery effort after failed recovery effort, UTIER's President, Ángel Figueroa Jaramillo, and many others connected the dots. Without mincing words, the labor leader called out Roselló's government for purposely delaying recovery in order to pursue a privatization agenda, claiming that there were "intentional acts, like the slowness in the recovery of the electric

¹²² The Puerto Rico Electric Power Authority (PREPA) and Cobra Acquisitions LLC, "Emergency Master Service Agreement for Electrical Grid Repairs - Hurricane Maria."

¹²³ "Cobra's Puerto Rico Contract Further Increased to Approximately \$945 Million."

system, a mechanism to provoke public discontent [with PREPA].”¹²⁴ Though this hypothesis is bold, it is not impossible. All of a sudden, several foolish contracts, the drawn-out closure of Palo Seco, a principal power plant supplying light to thousands, and the appointment of Noel Zamot as “Revitalization Coordinator” even before the resignation of PREPA’s CEO Ricardo Ramos make more sense. Figueroa Jaramillo continued his tirade exposing a government “strategy” by challenging the common declaration that cost for the average ratepayer decreases through privatization, asking for “just one case in which cost has reduced where privatizing.”¹²⁵ While UTIER would oppose privatization for the obstacles it places in front of union membership and activity, the status of recovery and electrification after Hurricane Maria as well as the attitudes of both Puerto Rico’s own government and the FOMB beforehand do not paint a portrait of these politicians as PREPA’s greatest cheerleaders whatsoever.

Lacking sound governmental checks and balances that could provide much needed oversight, UTIER has risen to fulfill an institutional void, challenging injustices in their workplace and exposing potential injustices against all Puerto Ricans in addition to tirelessly working to turn the lights back on.

An Example of Energy Privatization on Nicaragua

Puerto Rico is not the only place in Latin America where neoliberal policies supporting privatization strengthened in the wake of a disaster. Examining the privatization of Nicaraguan energy companies can point toward what PREPA’s future might look like. Second only to Haiti as the poorest American nation at the time, Nicaragua lacked strong public institutions and the regulatory oversight that those institutions provide. The country also carried billions of dollars in debt, forcing it to habitually cut public spending. In 1998, Hurricane Mitch slammed into Honduras, Nicaragua, and Guatemala, and today it is still, like Hurricane Maria, one of the strongest Atlantic storms every recorded. On top of tens of thousands of casualties,

¹²⁴ “Utier: Privatización AEE Fue Resultado de ‘Estrategia’ Del Gobierno.”

¹²⁵ Ibid.

infrastructure worsened and Nicaragua knew it had to rely on foreign aid to help its citizens. But the aid that Nicaragua desperately needed and the debt forgiveness came at a price.

The World Bank and the International Monetary Fund strongly supported privatization of Enitel, Nicaragua's indebted phone company, making it a condition for the release almost \$50 million in aid annually over three years and \$4.4 billion in debt relief. In other words, world institutions run by wealthy Western nations that are supposed to financially support poorer countries instead wield their debt forgiveness power as leverage, forcing impoverished countries to sell off valuable public authorities to private buyers, themselves from wealthy Western nations.¹²⁶ The country's energy companies were also privatized after Hurricane Mitch.

By October 2000, several private companies, including Union Fenosa of Spain and Enron of the United States dominated up to 90 percent of the Nicaraguan energy sector. There is abundance of information on the country and its power condition in the decade after market deregulation, which provides a direct comparison of the status Nicaragua before and after the contracts that placed its energy infrastructure in foreign hands. Privatization meant a surge in foreign direct investment, but that investment did not exactly come with the cheaper prices that open competition in the market were supposed to bring. One reason is instead of being sold separately, Nicaragua's distribution companies Disnorte and Dissur, were sold together to Union Fenosa. No institution in the country existed to challenge or prohibit the new private monopoly. Because Union Fenosa owned all distribution but much less generation, the company marked up energy prices by adding 61 percent to the generating price, and Nicaraguans were left without any alternative. Shortly after, Union Fenosa, a transmitter and distributor, itself owed Enron and its generators more than \$4 million. The Nicaraguan case proves that cheaper rates after privatization, a favorite opinion held by many politicians, both on and off Puerto Rico, is no guarantee.

Service also worsened. While outages occurred pre-privatization, they were never so long

¹²⁶ Druckerman, "In a World of Privatization, Nicaragua Is Falling Behind."

or so frequent as they were after. Before privatization, the state responded to energy shortages by investing money, much of it borrowed from the International Development Bank, yet the private sector proved itself less willing to spend money at all let alone in rural unelectrified areas, especially after oil prices soared. Like PREPA, Nicaragua's energy company ENEL derived much of its generation (71 percent) from oil.

Without strong accounting or auditing institutions, the transfer of generators to private corporations often took place with little oversight, and the state rarely financially benefited from any of the new contracts it entered into, losing millions. Lacking those auditing institutions also encouraged corruption. The fact that some of PREPA's contracts with private companies explicitly preclude auditing of business deals in their contracts means that those companies would favor a return to a scenario like Nicaragua's in which they cannot be effectively policed after a literal transfer of power.

Privatization provided less service at a lower quality and higher price for the impoverished nation, which is why many Nicaraguans, particularly lower-class populations that feel the negative externalities more, do not approve of privatization. In the case of Nicaragua, the touted benefits of privatization never materialized, in part because of country's lack of institutions, and it serves as a cautionary example of what debt-addled and disaster-stricken Puerto Rico would look like.¹²⁷

The Privatization of PREPA

Since the FOMB first started investigating PREPA's debt settlement with its creditors, PREPA was on thin ice. La Junta was upfront about their desire to privatize PREPA and the Board leapt to action from the beginning before Hurricane Maria, appointing Noel Zamot as Chief Transformation Officer of the utility. As early as August of 2017, José Carrión of the FOMB explained that the focus of Noel Zamot would explicitly be privatization, though the scope of the

¹²⁷ Ripley, "The Privatization of Nicaragua's Energy Sector: Market Imperfections and Popular Discontent."

new transformation officer's powers were unclear considering that PREPA had yet to suffer from a natural disaster and its leadership was still very much intact. Carrión voiced his opinion that Puerto Ricans “deserve” a different utility, which is true.¹²⁸ The high cost of energy overtly impedes economic development, especially for the poorest of the poor, but if that is the true motivation, then privatization may not be an ideal solution. Above all else, the FOMB's commitment to the privatization of PREPA shows the Board's utter lack of confidence in the public authority.

Later on in November 2017, an opinion article published in the *Wall Street Journal* written by four of the members of the FOMB calls for the privatization of PREPA. In the article, the four members of La Junta explain their reasoning behind rejecting the utility's debt restructuring agreement, previously negotiated but then later rejected by Governor Roselló. The authors argue that true reform of PREPA requires more than just debt restructuring and settlement, and that the credit restructuring plan would further pin the company to costly surcharges, making it appear less attractive to potential investors and more expensive for ratepayers. Thanks to the FOMB's rejection of the restructure agreement, hedge funds holding PREPA debt have way less power than they would have before, a move that has been regarded as protective of PREPA as an entity, making it easier for the entire entity to be privatized as a whole. In the editorial, members of the FOMB express their desire for modernization and affordability and criticize PREPA's management when mentioning “heavy administrative overhead” and a 12 percent loss of sales as a result of faulty billing. By superseding local government in this manner, the FOMB exerts their power as the true deciders of PREPA's fate. La Junta will work with the private sector to manage PREPA's debt. Though legal, this change is significant because it takes PREPA out of the control of publicly elected officials, especially after Hurricane Maria and the resignation of Ricardo Ramos. The hurricane facilitated an easier transition of power to Zamot. Suddenly, La Junta called the shots instead of PREPA's executives

¹²⁸ “Junta Busca Privatizar La AEE ‘Lo Antes Posible.’”

and Roselló's government, though, according to UTIER, all parties are in agreement on what to do about the PREPA problem.¹²⁹

The fact that Zamot, a retired air force colonel and the Board's top official of economic revitalization of Puerto Rico, stepped up about a month after the Hurricane and at the peak of the Whitefish scandal shows the FOMB's desire to wrest power away from PREPA and, thus, the government. The attention that the FOMB has paid to PREPA through Zamot also shows just how important high electricity cost and PREPA's debt are to the health of the entire island, a belief that La Junta has emphasized. When the Board foresaw the eventual resignation of Ricardo Ramos who struggled to manage an ailing enterprise, they knew they had a chance to enshrine a public official even more sympathetic to the private sector at PREPA internally, especially amid the chaos of the Hurricane.¹³⁰ Again, swift action and calculated maneuvering show that there was a privatization plan all along that was simply expedited by the disaster of Hurricane Maria.

Before becoming PREPA's Revitalization Coordinator, Zamot served the FOMB under PROMESA by overseeing the Critical Projects Process (CPP), which is an expedited permitting process that encourages commonwealth public authorities like PREPA to partner with private investors. Many of the infrastructure projects approved or pending approval already deal with energy generation, especially hydroelectric energy or solar energy. The CPP is supposedly oriented toward fueling job creation and long-term growth, but knowing the reality of predatory contracts and disaster capitalism, it is hard to imagine how the FOMB's furloughs in public agencies or the contracts for these infrastructure projects that the CPP signs with private agencies will do anything but further impoverish the island. In a presentation he created, Zamot explicitly uses the term "greenfield investment" to grow Puerto Rico's GNP.¹³¹ Greenfield Investment is a type of foreign direct investment in which companies start operations in a new

¹²⁹ Biggs et al., "Privatize Puerto Rico's Power."

¹³⁰ Scurria, "Emergency Manager to Be Installed at Puerto Rico Power Utility."

¹³¹ Zamot, "Title V Puerto Rico Infrastructure Revitalization Critical Projects Process Rollout."

country from the ground up, creating their own offices and drumming up local business. This is the type of investment that Puerto Rico once attracted through its tax benefits. As soon as those tax benefits were taken away, those large companies let go of their employees and shut down operations. What's to stop that cycle from repeating itself when the current single project enabled by the CPP is completed? For true long-term growth originating from the foreign, private sector, Puerto Rico needs these companies to stay, which means that it will promote entering into PPPs on detrimental terms, allowing private corporations to inflate the cost and drag out the completion time of any new public works. For these companies to stay, total privatization of almost every aspect of the road building, waste management, and energy generation, transmission, and distribution, is also needed, which in turn leaves Puerto Rico tethered to the foreign hands that now operate its infrastructure instead of its own government.

Zamot is not shy about his support for greenfield investment in Puerto Rico or his support for sustainable power, though he does not appear to have experience with public agencies or energy utilities at all; his background is in aerospace and cyber security. After Hurricane Maria, Elon Musk, CEO of SpaceX, Neuralink, and Tesla, which specializes in electric vehicles, batteries, and solar panels, took to Twitter expounding on Tesla's ability to rebuild Puerto Rico's energy system on solar terms. In response, Governor Roselló replied, "PR could be that flagship project."¹³² At the time, Tesla had already completed a few projects on the island following Hurricane Maria. The company used its solar panels and batteries to restore electricity to a children's hospital in San Juan in late October, letting the hospital become more self-sufficient.¹³³ Tesla also distributed battery packs to areas in need on the island.¹³⁴

Zamot expressed his approval of a potential partnership with Tesla, something Governor Roselló of course is supporting, and published an article on his LinkedIn praising the private company effusively. According to Zamot, "investors are correct in interpreting this as a signal

¹³² Rosello, "@elonMusk Let's Talk. Do You Want to Show the World the Power and Scalability of Your #TeslaTechnologies? PR Could Be That Flagship Project."

¹³³ Chappel, "Tesla Turns Power Back On At Children's Hospital In Puerto Rico."

¹³⁴ Malik and Eckhouse, "Solar Industry Wants to Build Puerto Rico's Grid of the Future."

that everything is on the table, and that those with truly innovative solutions (backed by smart capital) will be warmly considered by the government.” According to Zamot, Puerto Rico, specifically PREPA, is open for business. He also highlights the increase in awareness of Puerto Rico’s unique challenges that make it perfect for the implementation of renewable projects, and he writes in great length about the territory’s demanding and educated citizens who want clean, cheap power. In fact, Zamot consistently champions sustainable technology in his vision of Puerto Rico in ten years.¹³⁵

If there were ever a time for Puerto Rico to transition to energy independence through solar or other renewable sources of power, that time is now. Puerto Rico will not become independent as a nation anytime soon, and, given the current political situation both on the island and in Washington, D.C., it is unlikely Puerto Rico will become a state either. But energy independence has been shown again and again as both achievable and an astonishingly good solution for the island. It is not too late to start creating serious initiatives to support solar power generation in particular. For example, since privatization is the set course designed for PREPA, the Critical Projects Process run by Noel Zamot ought to seek out and accept contractors specializing in solar power generation. PREPA has passed its tipping point, and has the opportunity to rise from its ashes to lift the entire island, freeing it from costly reliance on generators and the costly diesel petroleum that feed those generators.

Yet Zamot’s passion and enthusiasm for sustainable power is noticeably at odds with PREPA’s contracts many problematic restoration contracts mentioned above and his history as head of the CPP, signing contracts for even more fossil-fuel promoting projects that use or seek to grow Puerto Rico’s existing infrastructure. Though they grasp just how well Puerto Rico could benefit from renewable energy, Zamot’s remarks are reminiscent of those made by Ricardo Ramos before at Earthshine before becoming PREPA’s chief executive. Ramos, too, was well

¹³⁵ Noel Zamot, “Puerto Rico: The Caribbean’s Once and Future Shining (Energy) Star | LinkedIn.”

aware of what solar power, in particular, could do for Puerto Rico. Though Zamot's words make him the poster child for PREPA's sustainable future, his actions confirm only the status quo: a reliance on expensive imported oil, a fragile grid managed by many different players, and possibly corrupt officials at the top that are heavily influenced by the companies they grant contracts to.

Conclusion

Although Puerto Rico's energy independent future is not guaranteed, one thing is for sure: with a man appointed by the FOMB who describes his commitment to Puerto Rico's long-term growth as "bullish" at the helm of PREPA, the question is not whether PREPA would be privatized, but when.

In the eyes of the FOMB, PREPA was deemed a system too broken by years of mismanagement in the context of an ongoing debt crisis, itself the result of more than a hundred years of legal rulings by the United States that kept the island at an arm's length from its owner – just close enough to exact profit and cheap labor but simultaneously far enough away to foster distrust in autonomy and let racial and economic injustice fester. Beginning with the Foraker Act that installed a presidentially appointed non-Puerto Rican board to manage the island's government, Puerto Rican autonomy was restricted. Unlike Hawaii, Puerto Rico never had a clear path to statehood, and from the cabotage laws of Merchant Marine Act of 1920 (the Jones Act) to the inability of Puerto Rico to declare bankruptcy recently, the United States and its many congressional, executive, and judicial leaders of the past century treated Puerto Rico like a colony, setting up a unique political and tax structures that funneled profit away from the island and into the hands of mostly U.S. businesses.

This neocolonial disregard for the well-being of Puerto Rico's more than three million residents and its environment racked up a burdensome debt thicker and more pervasive than the worst of tropical humidity. Thanks to special tax incentives for Puerto Rican bonds and the

cancellation of tax incentives for businesses setting up shop on the island, schools consolidated, hospitals closed, and, the lights turned off. In part because of its inability to first rely on the Government Development Bank's infrastructure fund, defunded by a neoliberal actor with an investment banking background who now works for a private equity fund that advises financial institutions, PREPA issued its own debt to fund the generation, transmission, and distribution of power. The projects undertaken by PREPA in the last decade during a period in which it issued more bonds tethered the utility to fossil-fuels imported at great cost only worsened both PREPA's financial and operational situation. Blackouts increased, the cost of electricity increased, and Puerto Rico became less and less energy independent. Finally, having lost investor confidence in its debt-ridden financial statements, PREPA's inability to rely on any more funding from capital markets following the downgrade of its bond led the utility to enter into abusive public private partnerships and contracts that siphoned off more and more essential services historically provided by a now struggling public authority.

The decline of PREPA was led by public officials with strong ties to the private sector, be it the banking or oil and gas industries, and then expedited by politicians with neoliberal agendas, both elected into office or appointed by the U.S. President. Puerto Rico's debt and the privatization of its public services are proof that neoliberal ideals know few political boundaries. Especially when it comes to neocolonialism and neoliberalism in the United States, the example of Puerto Rico illustrates that both liberals and conservatives support neoliberal ideas.

Because of the variety of issues that influenced PREPA's decline, causal ambiguity exists. Between neocolonialism that set up a crushing debt, the debt that then undermined organizational and operational competency, aging fossil-fuel reliant systems, or the untrustworthy leaders letting it all happen for either personal gain or political achievement in the neoliberal school, no one factor is to blame for Puerto Rico's current energy crisis. Each of these factors damaged PREPA in its own way and created a causal ambiguity that made PREPA's problems hard to diagnose, solve, and report on in the meantime. No one factor can be singled

out as more pernicious than the rest or contributing more to the catastrophe than another, but functioning together, these factors all wrote PREPA's death sentence. There was never a precariously set up row of dominoes spelling out the end of PREPA, but rather a simultaneous series of poor decisions that literally drained the public utility of its power over the course of many years.

What may have been a slow drip of deterioration turned into a steady stream after the whole island suffered Hurricane Maria.

Recovery support from both the resource-sapped Puerto Rican government and the federal government, which largely acts through the United States Army Corps of Engineers (USACE) and with approval from the Federal Emergency Management Agency (FEMA), has been so paltry and taken so long in some places that some Puerto Ricans have taken matters into their own hands, buying their own communities solar panels (an option that is sadly still unregulated by PREPA) or reaching out to other sources for power relief. Solar power, more than wind or other renewable sources of energy is such a great answer to the island's problems for this very reason. These small-scale solutions, bolstered by the strength of organizing, have led to energy independence on certain pockets of the island and uplifted entire communities.¹³⁶ With access to solar power, some areas of the island have seen a return to normalcy because they are off the grid. These inspiring stories of self-sufficiency, however, are few and far between.

During the crisis that followed Hurricane Maria, PREPA continued to race along its downward spiral, seemingly abandoning recovery efforts at the expense of an entire population without power for weeks that turned into months. This reality was aided by disaster capitalism. Just as much of New Orleans's public school system and much low-income housing across the city was quickly dismantled following Hurricane Katrina, profiteers have descended on Puerto

¹³⁶ Klein and Feeney, "Puerto Ricans and Ultrarich 'Puertopians' Are Locked in a Pitched Struggle Over How to Remake the Island."

Rico, targeting PREPA. The example of New Orleans after Katrina is especially pertinent, because unlike other examples of economic shock therapy or disaster capitalism that feature rich multinationals based in the United States or Europe preying on foreign countries with too much debt or instability to defend themselves, this is happening within the United States. Puerto Rico's significance is a disturbing reminder that neoliberalism has no geographic boundaries – where there is a disaster, this is the opportunity for private companies to profit. What is most disturbing about the examples of New Orleans and Puerto Rico, however is that it shows the selectivity of disaster capitalists.

The fact that New Orleans and Puerto Rico were not as prepared for a major storm to this day still have not recovered in some areas expose neoliberalism's racist, colonial roots. Both New Orleans and Puerto Rico are majority minority places. After Hurricane Harvey inflicted damage on the greater Houston area, there was no comparable response to break up public infrastructure and sell it off. New Orleans and Puerto Rico were both less well-prepared, though they share the geographic risk for a major hurricane or tropical storm as Houston. When we see such disparity amid natural disasters that have the same destructive impact across the board, we must question the racist and injustices that created and sustain those disparities.

By entering into expensive contracts with ineffective cleanup and recovery crews, PREPA left its leaders, the government, and the FOMB with no other choice than to abandon the utility in favor of privatization, a position that it appears all three bureaucratic units were already in favor of. Facing this hard truth and severe criticism in early 2018, Governor Roselló finally pulled the plug, announcing plans for the full privatization of PREPA.¹³⁷

¹³⁷ Levin, Rivera, and Kaske, "Puerto Rico to Start Privatizing Embattled Energy Company."

A Note from the Author:

When I first chose this topic in May of 2017, I had no idea the direction that it would take me. At the time, nobody foresaw such a calamitous hurricane season or the ensuing recovery disaster surrounding PREPA that would briefly dominate the news cycle. What started as a project interested in issues of federalism and the ability of a public authority and the ratepayers it serves to survive amidst debt and heavy influence from the private sector turned into an in-depth look at PREPA and Puerto Rico's place in the records of disaster capitalism. One of the most challenging aspects of this project for me was being able to organize PREPA's story chronologically. Knowing that my topic is at times a mile wide and an inch deep, it was not easy to determine which "inch" of information would be shared in this paper, though in the end this practice strengthened the final product.

The one question on this project that I am asked the most is whether or not the privatization of PREPA is a good thing.

Having studied Puerto Rico's history, PREPA's history, energy deregulation studies, and relevant cases of disaster capitalism, I had to make many value judgments in order to answer this question first for myself and then again when articulating the answer I arrived at for an audience. The best way to decide whether or not the privatization of PREPA was beneficial was to think through some characteristics of what an ideal solution to the crisis looks like and then to measure how privatization either brings reality closer to or further from those goals. But of all the competing factors, the one that influenced my vision of an ideal solution to the PREPA problem most was the welfare of the Puerto Rican people.

Especially after Hurricanes Irma and Maria, story after story of injustices and the struggle to do everyday things on the island reached U.S. periodicals and news channels. I read about 90-year-old *abuelas* forced to abandon the only home they ever knew for the United States because they needed a reliable source of power for their oxygen machines. I listened to stories about individuals caught in small accidents, like motorcycle wrecks, whose lives could

have easily been saved had a hospital with electricity been nearby. I watched videos of men and women risking their lives for their families daily traversing sometimes perilous terrain for miles to be able to pick up supplies of bottled water or fuel for their backup generator from the next village over. To say that the people of Puerto Rico deserve better is an understatement.

Here are a few of the characteristics of my ideal solution:

- An in-depth audit will find much of the \$70 billion debt Puerto Rico currently owes is odious, illegitimate, illegal, and, thus, not to be paid.
- Puerto Rico achieves equal legal standing and is no longer subject to specifically neocolonial legislation like the Jones Act cabotage laws, possible with or without achieving statehood.
- Tax incentives that add to Puerto Rico's debt and limit the amount of money the government can collect from businesses on the island are reformed.
- More than half of power on the island will be generated from renewable sources.
- Power will be reliably provided to all geographic areas of the island, regardless of population density or proximity to a distribution station.
- PREPA workers and members of UTIER, the longtime stewards of Puerto Rico's electric infrastructure, will have a say in the future of the utility.
- Regulation will ensure a balance between the companies taking PREPA's, either Puerto Rican or (more likely) foreign, and the contractors that the companies hire for projects as well as a fair bidding practices to award contracts.
- These new electric companies will operate at all levels of the electric power supply chain: generation, transmission, and distribution, to avoid any one company from controlling any one path.

Knowing what I know now, I am extremely skeptical that the privatization of PREPA will be conducted in a manner that will support any of these few points.

As the public agencies holding debt are sold off, the debt that is potentially illegal under international law will be resolved bit by bit, and it will be too late for debt forgiveness.

Private companies will have no incentive to eliminate cabotage laws that strangle the island, especially limiting its access to fuel. Rather, these companies will seek to do something PREPA never did: raise rates to compensate for the added cost of imported fuel in order to profit.

Lobbying units of new and powerful companies on the island will work hard to prevent their taxes from increasing. While these companies may incorporate renewable energy into their portfolios bit by bit, the existing behemoth of fossil fuel-reliant grid infrastructure on Puerto Rico is too costly for any one company to profitably modernize. For Puerto Rico to truly commit to renewable power, it needs government funding.

Again, driven by profits, private companies also have little incentive to provide power to rural areas on the island. Though it may have not have succeeded in this matter owing to external, situational factors, PREPA did strive to support all Puerto Ricans, regardless of where they live.

Once PREPA is privatized, the future employment of UTIER employees is uncertain, especially given the pattern of companies and contractors importing their own specialists and workers and ongoing government furloughs.

With the FOMB and Governor Roselló committed to free-market practices, increased regulation on these companies, including how they subcontract jobs with other construction giants, is unlikely to be written or enforced.

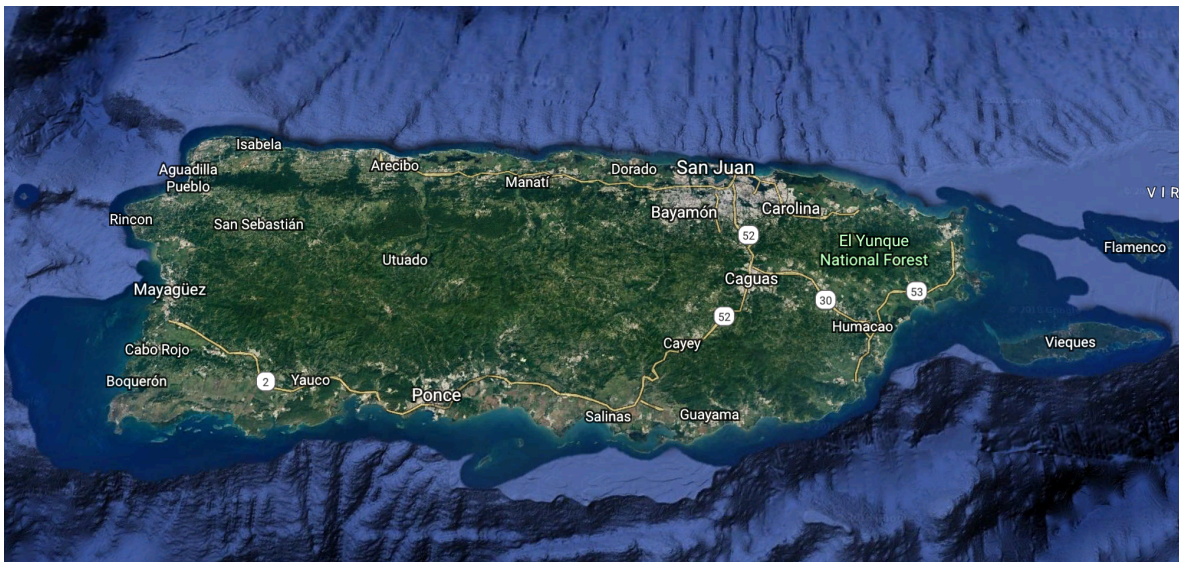
Lastly, as seen in the Nicaraguan example above, without government-backed institutional protections preventing a non-public monopoly, companies will not self-regulate. If there are no rules in place to curb their behavior, corporations dominating portions of the electric power supply will pass on added costs, rather than value, to the next operator all the way to the consumer.

It is hard for me to imagine a positive long-term solution to arising from the privatization of PREPA. That being said, considering the attitudes of the island's leaders seemingly intent on breaking PREPA down as much as possible, there is one outcome of privatization that I will support and that is, hopefully, the re-electrification of an island that has endured years of rolling blackouts and in some places months without power.

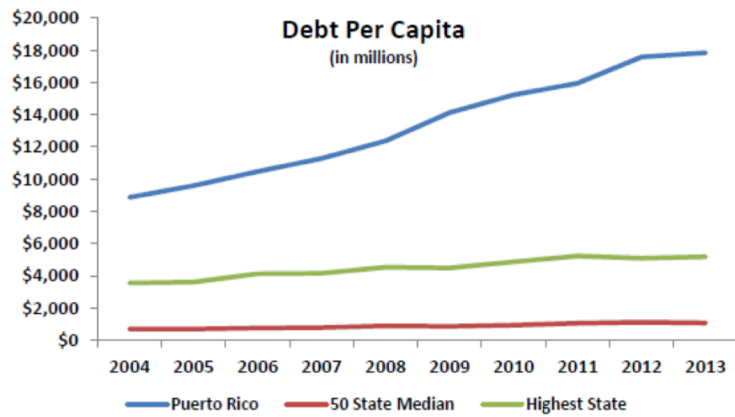
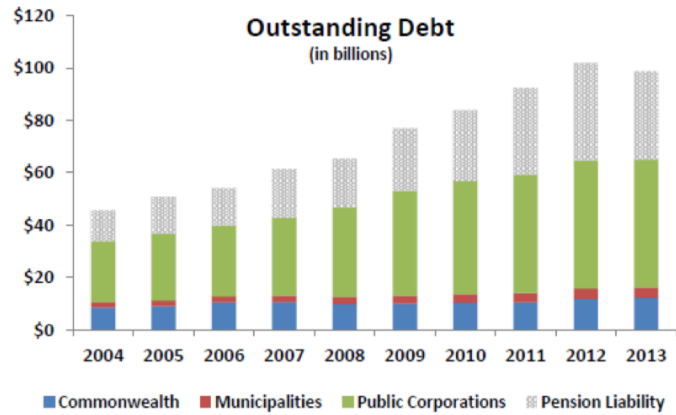
When the lights are eventually turned back on, I know that the vitality and willpower that has carried Puerto Ricans through a debt disaster, a natural disaster, and a recovery disaster will only be strengthened. With their newfound power, I know that the people of Puerto Rico will use every last resource at their disposal to effect positive change in their lives, holding their leaders at all levels of government accountable for their decisions.

Appendices

Appendix A: Geography of Puerto Rico



Appendix B: Breakdown of Puerto Rican Outstanding Public Debt and Debt Per Capita over Time¹³⁸:

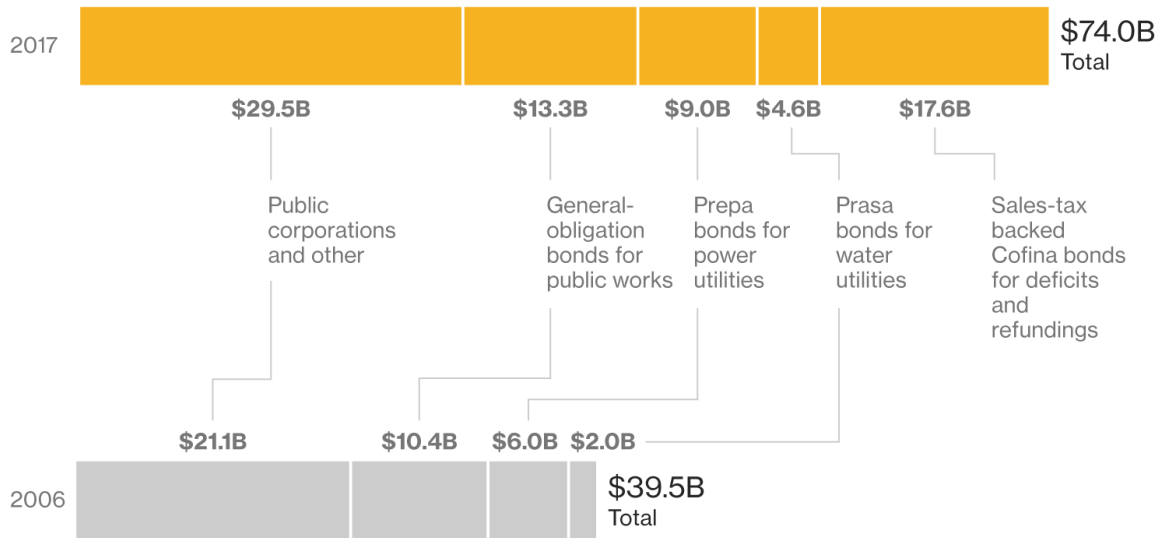


¹³⁸ See note 31.

Appendix C: Detailed Breakdown of Puerto Rican Debt from 2017¹³⁹

Puerto Rico Debt Binge

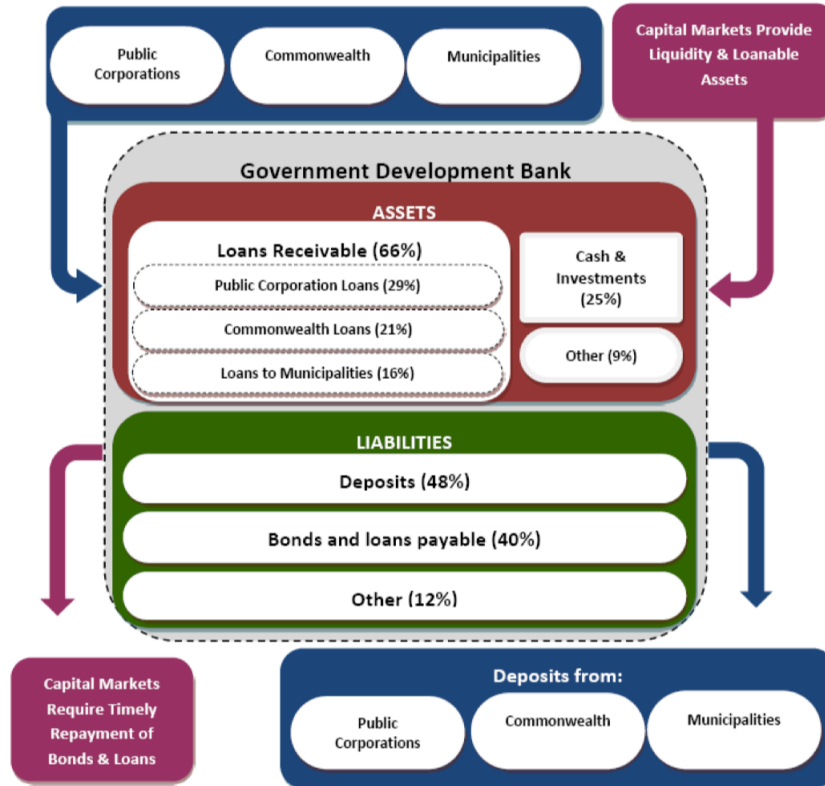
Island's debt almost doubled in 10 years



Source: Puerto Rico financial documents

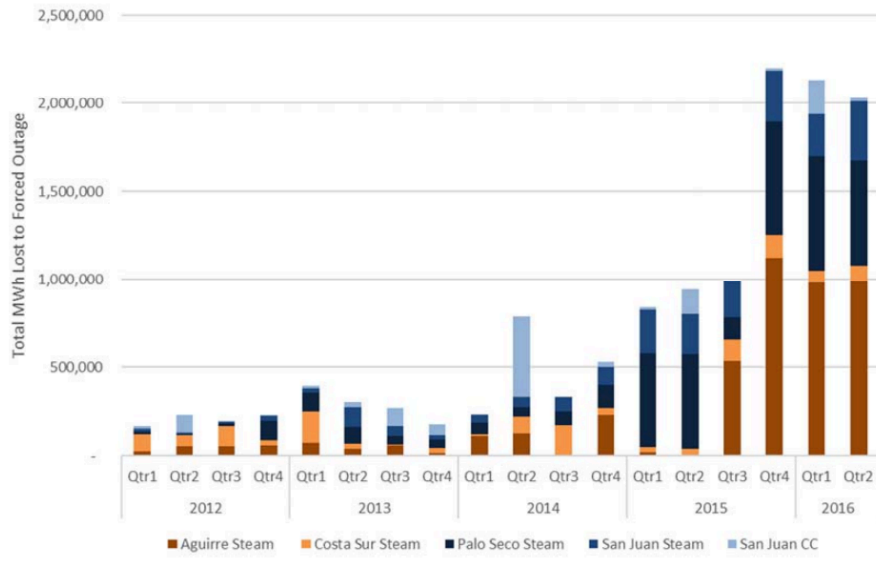
¹³⁹ See note 25.

Appendix D: The GDB is the key to the Puerto Rican Government’s Solvency¹⁴⁰



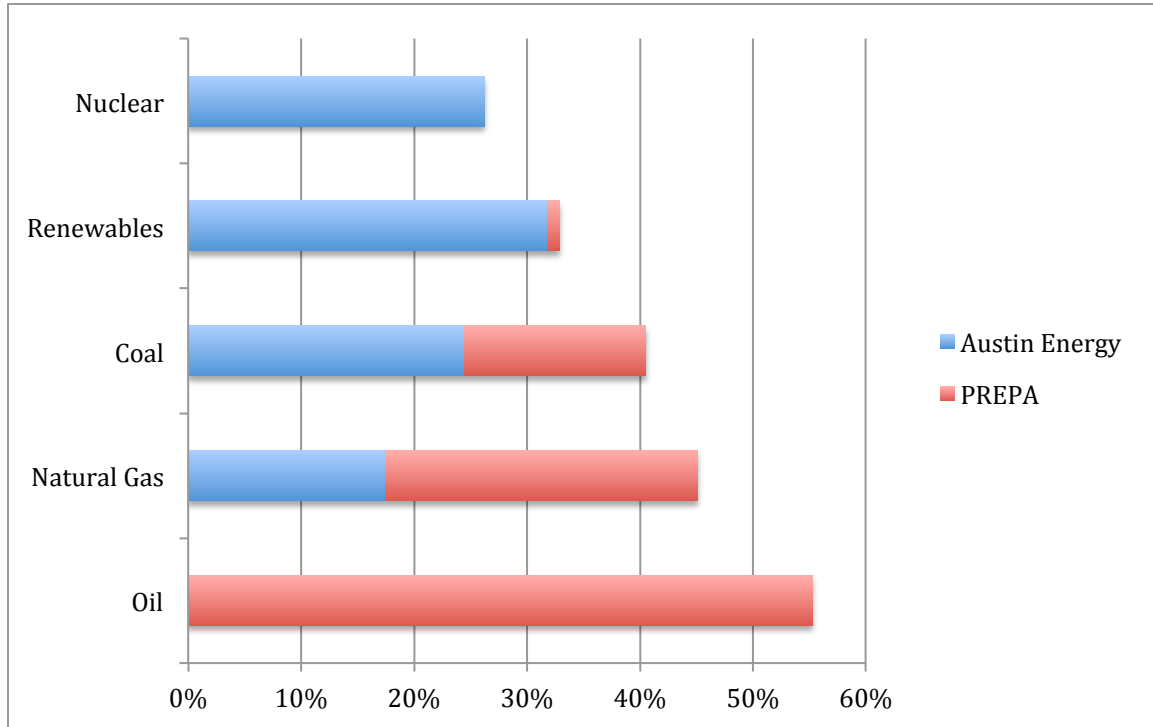
¹⁴⁰ See note 31.

Appendix E: Total energy (MWh) lost to forced outages by quarter, calendar year ¹⁴¹



¹⁴¹ See note 51.

Appendix F: Difference between PREPA percent generation by fuel type and Austin Energy percent generation by fuel type in 2016¹⁴²

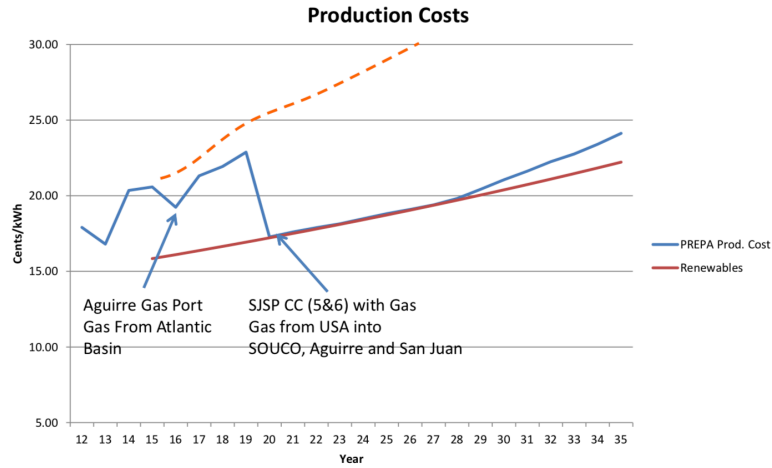


¹⁴² See note 72 above.

Appendix G: Comparison of PREPA production cost over with and without natural gas from the United States.¹⁴³

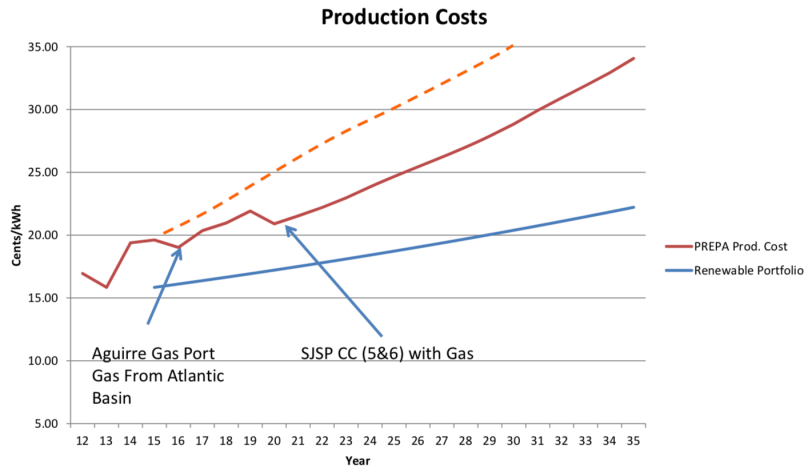
Cost Comparison

Gas From USA in 2019



Cost Comparison

No Gas from USA



¹⁴³ See note 106.

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Biography

Kobi Naseck was born in Austin, Texas, and is thankful to have lived far enough from the Gulf of Mexico to have never experienced a major Hurricane. He grew up in Dallas and later attended the University of Texas at Austin, where he pursued degrees from Plan II as well as the Business Honors Program. After eliminating any hope of pursuing another business major through process of elimination and lack of natural light in the McCombs School of Business, he settled on a certificate in Business Public Policy to complement his degrees. While in college, he studied abroad twice, spending a summer in Buenos Aires, Argentina and a semester in Bilbao, Spain. In Austin, he co-founded and cultivated BEEVO: UT Austin's Beekeeping Society, spending many happy weekend mornings tending to his hives. He will soon embark on a year of environmental organizing with Green Corps, and he hopes one day to use his knowledge of solar power implementation, climate change, and sustainable practices to create positive change.