

Policy Brief

Analysis of a Long-Term Agreement for the Operation and Management of Puerto Rico's Transmission and Distribution System

Sergio M. Marxuach, Policy Director

Center for a New Economy
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INTRODUCTION

For at least two decades now business owners, community leaders, NGOs, trade organizations, and consumers have been advocating for a thorough transformation of the Puerto Rico Electric Power Authority (“PREPA”). The service provided by Puerto Rico’s state-owned utility is unreliable, highly polluting, and expensive. Its generation fleet is old and disproportionately dependent on fossil fuels, mostly bunker fuel and diesel. The transmission and distribution grid, for its part, has been neglected for years and suffered widespread damage as a result of hurricanes Irma and Maria in 2017.

Furthermore, PREPA traditionally has been a source of private and public corruption in the island. Appointment to senior management positions depended more on partisan politics than on personal merit. Technical and managerial decisions, in turn, were subordinated to short-term political interests for years. PREPA survived largely by postponing capital expenditures, delaying payment to suppliers, using accounting gimmicks that muddled its true financial condition, and by borrowing billions at relatively low, tax-exempt rates in the U.S. municipal bond markets, even when it was on the brink of insolvency. That all these shenanigans eventually ended in a bankruptcy filing should not be surprising. Nonetheless, it is still difficult to think of other monopolies that have managed to bankrupt themselves, with the exception, perhaps, of the state-owned enterprises in the former Soviet Union.

Given all of the above, the inescapable conclusion is that PREPA simply cannot continue operating the way it has up until now. We concur with the government of Puerto Rico, as well as several other organizations, that the time has come to take drastic action with respect to PREPA, as it has proven incapable of reforming itself and been immune to the efforts of several administrations to modernize and improve its operations.

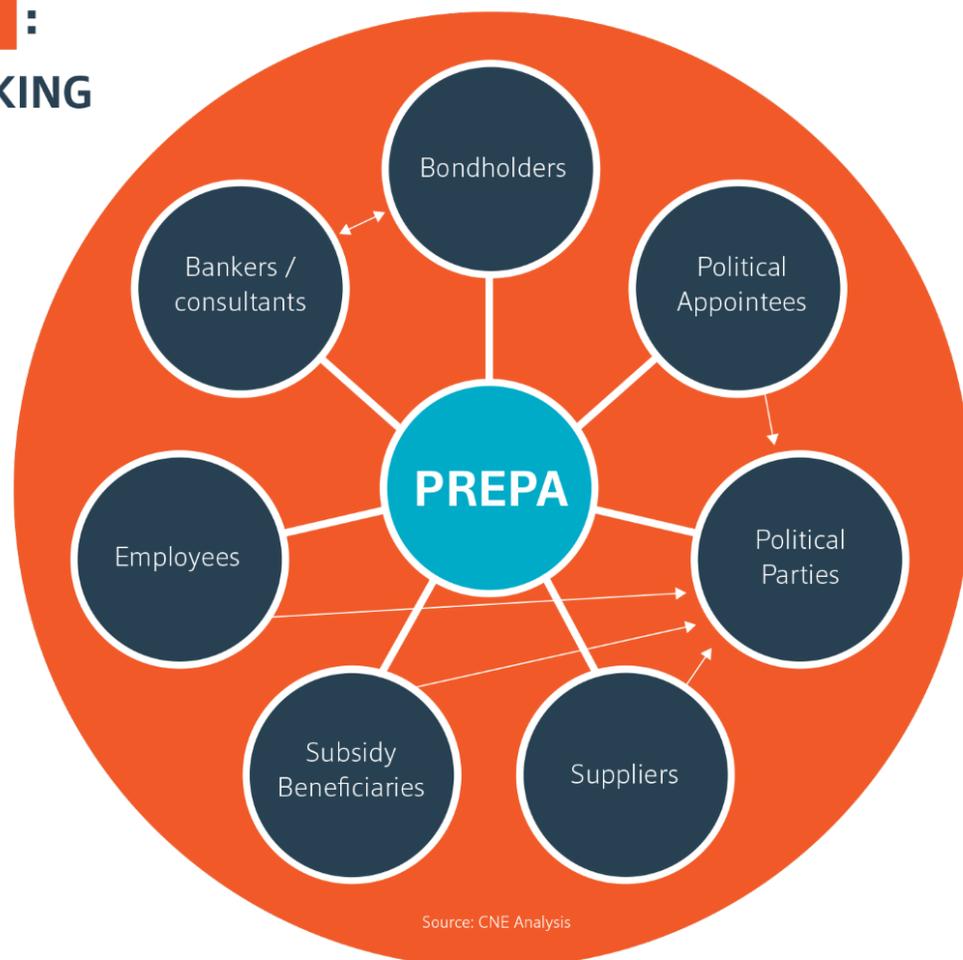
That said, however, we believe it is imperative to meticulously analyze the political and economic context in which PREPA has operated and carefully study the options proposed for transforming the Puerto Rico electric system.

It is important to understand that no one at PREPA exercises the legal powers that shareholders—in this case all the residents of Puerto Rico—would exercise in a private company. This situation has allowed diverse interest groups, such as suppliers, political parties, beneficiaries of subsidies, unions, bondholders, bankers and consultants, and the politically connected, to organize in order to extract undeserved benefits from PREPA at the expense of the rest of the population of Puerto Rico.

Economists call this behavior “rent-seeking”, which the International Monetary Fund defines as “the pursuit of uncompensated value from other economic agents, in contrast with profit-seeking, where entities seek to create value through mutually beneficial economic activity.”¹

¹ International Monetary Fund, “Building Institutions”, *World Economic Outlook 2005*, p. 126.

FIGURE 1:
RENT-SEEKING
AT PREPA



Paul Teske, a professor at the University of Colorado, offers further insight into this behavior:

Rent-seeking is a complex phenomenon, especially where multiple interest groups, each with different organization costs, interests, and power, interact with each other. The usual result is that, like vectors in a physics model, the interest group pressure will act on politicians from different directions and with differential force.²

In the case of PREPA, as shown in the figure above, we can see this dynamic at work in the concrete and specific actions of the following interest groups:

- **Bondholders** – Ever since PREPA’s first bond offering in the 1940s, the utility’s bondholders have enjoyed above-average, mostly tax-free returns on their investment, at the expense of

² Paul Teske, *Regulation in the States*, (Brookings Institution Press: Washington, DC, 2004), p. 38.

high electricity rates paid by Puerto Rican consumers, even when it was fairly clear that PREPA was close to insolvency. For example, PREPA was able to sell \$650,000,000 of Power Revenue Bonds (Series 2012A) and Power Revenue Refunding Bonds (Series 2012B) in April 2012, notwithstanding the fact it had reported operating losses for three consecutive years, it was facing severe liquidity constraints, and was insolvent from a balance sheet perspective as its liabilities exceeded its assets.³

- **Employees** – Many “career” employees at PREPA owe their positions to their political activism. These employees, in turn, are organized in two groups that raise funds and coordinate supporters for Puerto Rico’s two main political parties at PREPA.
- **Investment Bankers and Other Consultants** – Providers of professional services—bankers, lawyers, and management consultants, among others—in addition to charging millions of dollars in fees for their services, have also enabled the extraction of rents from PREPA by other special interest groups by providing their implicit seal of approval to otherwise questionable transactions. For example, the Official Statement for the April 2012 bond offering by PREPA included two different calculations of the Net Revenues to Principal and Interest Requirements Ratio—one that complied with generally accepted accounting principles, but fell short of the 120% required by the Trust Indenture of the Bonds, and another that did not comply with generally accepted accounting principles but showed PREPA in compliance with bond covenants.⁴
- **Political Appointees** – Persons with good connections to Puerto Rico’s two principal political parties have managed throughout the years to obtain nicely-paid plum jobs and other sinecures at PREPA, regardless of their own merits or qualifications.
- **Political Parties** – The two parties that have dominated Puerto Rican politics since 1968 have extracted a significant amount of rents from PREPA in several ways. First, they have traditionally used the company to provide employment and reward their loyal supporters. Second, these employees, in turn, have organized and raised funds for these political parties. Third, political parties also receive financial contributions from companies that go on to obtain sweet-heart deals with PREPA, in many cases without a bidding process. Finally, through their control of PREPA’s senior management and the legislature, they have managed to implement all sorts of subsidies that benefit political donors (specifically in the manufacturing and tourism sectors), as well as certain segments of the general population that reward political parties with their votes.
- **Subsidy Beneficiaries** – Throughout the years, the Puerto Rico Legislative Assembly, with the acquiescence of multiple governors, has enacted dozens of rate subsidies to benefit loyal voters as well as influential campaign donors. The cost of these subsidies is transferred to the bills of all the other customers of the utility, who end paying for them in the form of unreasonably high electricity rates.

³ See financial statements included in Puerto Rico Electric Power Authority, *Official Statement* for \$650,000,000 Power Revenue Bonds Series 2012 A and Power Revenue Refunding Bonds Series 2012B, April 12, 2012.

⁴ Puerto Rico Electric Power Authority, *Official Statement* for \$650,000,000 Power Revenue Bonds Series 2012A and Power Revenue Refunding Bonds Series 2012B, April 12, 2012, p. 5.

- **Suppliers** – PREPA’s suppliers, in many cases thanks to their political donations and influence, have benefited from contracts to provide goods and services to the public utility, sometimes at inflated, not to say borderline extortionate, prices. See, for example, the various investigations into PREPA’s fuel and equipment procurement processes.⁵

These rent-seeking groups created obstacles that hindered previous efforts to transform PREPA, since each of the groups that benefited from the status quo was well organized and had a strong interest in protecting its benefits, while consumers were disorganized and the costs of acting collectively exceeded the individual benefit each consumer would receive.

The logical implication of this analysis is that PREPA went bankrupt due to the slow but steady extraction of rents by these well-organized groups, which gradually sucked the lifeblood out of the government-owned corporation. This is why we find it difficult to understand how organizations and individuals who stand outside the *cercle sacré* of the beneficiaries of this legally-sanctioned, but nonetheless morally corrupt scheme, can possibly advocate *against* the thorough transformation of PREPA.

Rent-seeking also explains why PREPA went bankrupt in the way most other businesses do: “gradually, then suddenly”.⁶ For PREPA that moment arrived in July 2017 when the Financial Oversight and Management Board for Puerto Rico (“FOMB”), acting as agent for the government of Puerto Rico, “in the interest of ensuring PREPA’s future financial sustainability...filed a voluntary petition on behalf of PREPA for protection under Title III of PROMESA in the US District Court.”⁷

However, PREPA’s fundamental problem is not merely technological or financial, but as we have shown, it is also a problem of Puerto Rico’s political economy, and specifically of reducing the economic and political power of those special interests who unduly benefit from the existing system and increasing the power those who are adversely affected by it.

Any effort to transform Puerto Rico’s electric system needs to take into account the predatory behavior of PREPA’s internal and external interest groups that benefit from the current situation and provide mechanisms for limiting or eliminating that behavior. **If the currently-favored privatization process is limited simply to transferring the assets or operation of a corrupt company in the public sector to a group of investors in the private sector, without disrupting or dismantling the rent-seeking network we have described above, then we will have achieved absolutely nothing. In other words, privatization, in and by itself, will not solve Puerto Rico’s electricity problems, if all it does is substitute a group of rent-seekers for another.**

On the positive side, filing for bankruptcy-like protection unleashed a surge of interest and activity to transform PREPA’s management and operations, aimed at limiting the ability of bankers,

⁵See, for example, Beatriz de la Torre, “AEE pasa con fichas”, *El Vocero*, 21 de marzo de 2013; “Nebuloso financiamiento de ‘mareducto’”, *El Vocero*, 23 de mayo de 2013; and “Denuncian ‘chanchullo’ en AEE”, *El Vocero*, 22 de julio de 2013.

⁶ See Ernest Hemingway, *The Sun Also Rises*, (Charles Scribner’s Sons: New York, 1926).

⁷ *2020 Fiscal Plan for the Puerto Rico Electric Authority*, as certified by the Financial Management and Oversight Board for Puerto Rico on June 29, 2020, p. 72.

bondholders, suppliers, politicians and their flunkies from extracting rents from PREPA. On the success of these initiatives much depends.

As of the date of this policy brief, there are at least five ongoing processes that will affect PREPA's operations in the near future:

- First, the Puerto Rico Energy Bureau (“PREB”) is reviewing PREPA’s proposed Integrated Resource Plan (“IRP”) that, at least in theory, should guide the utility’s operations for the next twenty years.
- Second, the FOMB has already certified a new Fiscal Plan for PREPA, which should serve as the basis for a Plan of Adjustment (“POA”) to restructure all its obligations with its creditors.
- Third, the FOMB has negotiated a Restructuring Support Agreement with a subset of PREPA’s creditors, but that process has been put on hold at least in the short-term, due to the impact of the Covid-19 pandemic on Puerto Rico’s economy.
- Fourth, PREPA, with the assistance of the federal Department of Energy (“DOE”), has prepared a plan to modernize and decentralize the transmission and distribution grid in Puerto Rico, as part of a larger effort to rebuild the power system.
- Finally, PREPA and several other entities have executed an agreement for the operation and management of the transmission and distribution system during the next fifteen years.

We do not know if these initiatives will be successful in jumpstarting a true transformation of Puerto Rico’s sole electric utility, but it is a hopeful sign that the government and the FOMB are taking assertive action to address the island’s electricity problems and to open up closed processes that have traditionally benefitted rent-seeking groups. It is important to note, however, that the current process itself presents its own set of political economy issues, where rent-seekers are also on the prowl.

Furthermore, the government of Puerto Rico appears to be managing PREPA’s transformation in a haphazard way. In theory, all the processes outlined above should follow a logical sequence based on a long-term Integrated Resource Plan. Yet, PREPA has decided to go ahead with some “predetermined decisions” regarding new capital investments (for example, the gas terminal for San Juan units 5 and 6) outside the context of an approved IRP. This is cause for concern as it appears there is no coordination between the IRP process underway at the PREB and certain actions PREPA is taking on the ground. This situation is particularly worrisome given the government’s limited capacity for managing and executing complicated processes.

In this policy brief we will analyze important aspects of the agreement for the operation and management of PREPA’s transmission and distribution system; highlight some risks associated with the performance of that agreement; identify some serious concerns we have with the transaction; and offer some recommendations for its improvement. But we want to make it clear from the start that, in our opinion, executing a bad deal is worse than having no agreement at all.

ANALYSIS OF THE OPERATION AND MANAGEMENT AGREEMENT

On June 22, 2020 PREPA and the Puerto Rico Public-Private Partnerships Authority (the “P3A” or “Administrator”) entered into an [agreement for the Operation and Maintenance](#) (“O&M” Agreement”) of PREPA’s Transmission and Distribution System (“T&D System”) with LUMA Energy, LLC, (“ManagementCo”) and LUMA Energy Servco, LLC (“ServCo”, and together with ManagementCo, the “Operator”).⁸ The Operator, in turn, is a consortium formed by (1) ATCO Ltd., a Canadian operator of electric systems and (2) Quanta Services, Inc., a Texas-based provider of “infrastructure solutions” for the electric power industry. The basic corporate structure of the Operator is set forth in the chart below:⁹

FIGURE 2:

BASIC CORPORATE STRUCTURE OF THE OPERATOR



The O&M Agreement grants the Operator the right to operate and manage PREPA’s T&D System for fifteen years, while PREPA retains the ownership of the T&D System. In consideration for managing the T&D System in accordance with O&M Agreement, the Operator is entitled to receive a Service Fee consisting of (1) an annual Fixed Fee and (2) an Incentive Fee:

- The Fixed Fee starts at \$70 million on year 1 and increases to \$105 million for each of years 4 through 15.

⁸ To be clear, according to the P3 Committee Report: “Operator consists of both ServCo and ManagementCo. ManagementCo consists of the senior management personnel of Operator. ServCo is a subsidiary service company of ManagementCo. ManagementCo is not responsible for providing the O&M Services but is responsible solely for providing the Front End Transition Services. ServCo is responsible for providing the O&M Service, including employing the workforce that will provide the O&M Services, and is otherwise responsible for the T&D System.”

⁹ IEM is a company hired by LUMA to provide expertise with the federal procurement and grant management processes but it is not part of the ATCO/Quanta consortium.

- The Incentive Fee, which is payable upon the Operator achieving certain performance benchmarks set forth in Annex IX to the O&M Agreement and is calculated in accordance with the methodology set forth in Annex X to the O&M Agreement, starts at \$13 million on year 1 and increases up to \$20 million for each of years 4 through 15.

In both cases, the amounts payable on account of the Fixed Fee and the Incentive Fee, if any, will be adjusted for inflation (Annex VIII to the O&M Agreement). In addition, the Operator is entitled to recover, “at cost”, certain T&D Pass-Through Expenditures, Capital Costs, and Outage Event Costs.

Front-End Transition Period

The parties have agreed to a “Front-End Transition Period” that begins on the Effective Date of the O&M Agreement and terminates 320 days after that date (the “Service Commencement Date”), unless that period is extended by the parties. During this period the parties will work together on (1) a Handover Checklist; (2) both Federal and Non-Federal Procurement Manuals; (3) an Initial Budget; (4) a System Remediation Plan and other matters included in the Front-End Transition Plan, as set forth in Annex II to the O&M Agreement.

In exchange for its services during the Front-End Transition Period, the Operator will be entitled to receive a Front-End Transition Fee equal to the sum of (1) the reimbursement of the salaries and expenses of those employees and contractors of the Operator or its affiliates that provide certain services to PREPA during the Front-End Transition Period and (2) a fixed fee of \$60 million.¹⁰

According to PREPA’s Fiscal Plan for 2020, as certified by the FOMB,

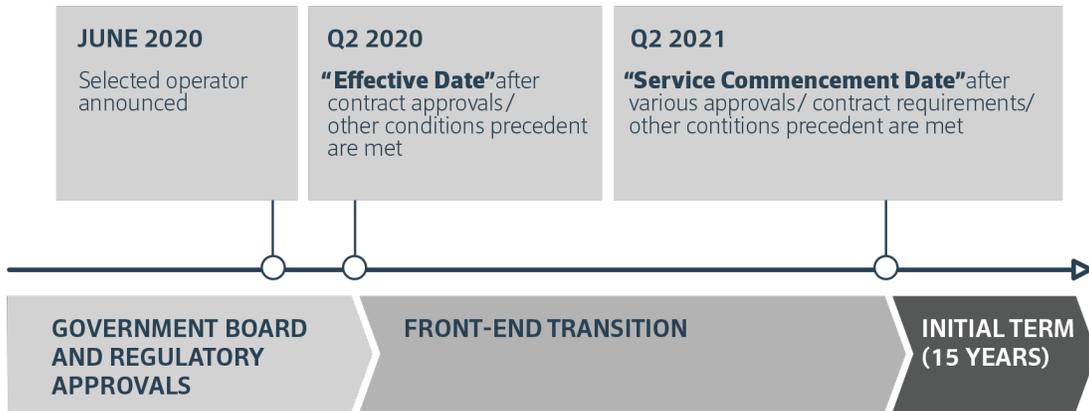
The front-end transition process will take several quarters, placing the service commencement date in the second half of 2021. In order for the transition to be successful, PREPA must collaborate with the private operator (LUMA) on all aspects of operational and financial management for Puerto Rico’s T&D system. After achieving contractual milestones for transition of T&D operations to the private operator, the responsibilities for all aspects of the operation and maintenance of PREPA’s T&D system, including billing and other customer service functions, will be transferred to the private operator. These services and responsibilities include day to day operations and maintenance of the T&D system, long-term planning, generation dispatch, asset management, operation and maintenance, community and media relations, reporting and record keeping, and finance and accounting, among others. Emergency response and customer service responsibilities, including billing, outage reporting, and connections, will also be the responsibility of the private operator.¹¹

As the reader has probably deduced by now, this is a complicated agreement. Here is how the FOMB visualizes the timeline for the commencement of services by the Operator.

¹⁰ O&M Agreement, Section 4.6.

¹¹ *2020 Fiscal Plan for the Puerto Rico Electric Authority*, as certified by the Financial Management and Oversight Board for Puerto Rico on June 29, 2020, p. 31.

FIGURE 3: O&M AGREEMENT TIMELINE



Source: 2020 Fiscal Plan for the Puerto Rico Electric Power Authority, June 29, 2020, p. 31.

Back-End Transition Period

The parties have also agreed to a "Back-End Transition" in the event (1) the O&M Agreement is terminated prior to its expiration date or (2) the O&M Agreement expires and its term is not otherwise renewed or extended. During this period the Operator would be obligated to perform certain services and tasks to facilitate the transfer of the operation and management of the T&D System back to PREPA or to another operator (the "Back-End Transition Services").

As compensation for the performance of the Back-End Transition Services, the Operator shall be entitled to receive "an aggregate amount equal to (i) the hourly fully allocated cost rate for each category of Operator employee or Affiliate personnel providing Back-End Transition Services multiplied by (ii) the number of hours worked by each Operator employee or Affiliate personnel in such category providing Back-End Transition Services plus (iii) ten percent (10%) of the product of (i) and (ii), plus (iv) all other reasonable and documented costs and expenses incurred by Operator (without markup for profit) that are necessary and reasonable in the course of providing the Back-End Transition Services".¹²

It appears the objective of this Back-End Transition Period is to insure the Operator cooperates with the Administrator during "any procurement process to identify a successor operator and to commence preparations for an orderly transition of ServCo and the T&D System to Owner or Administrator (or their designee)."¹³

¹² O&M Agreement, Section 16.4(b).

¹³ O&M Agreement, Section 16.2(a) and Section 16.2(b).

Supplemental Agreement

[According to the P3 Committee Report](#), “the FOMB understood that it would not be beneficial to delay the Service Commencement Date in the event that the Title III Approvals were not obtained by the time all other conditions precedent to the Service Commencement Date were achieved.”¹⁴ And while the P3A believed the “O&M Agreement, as drafted, provided sufficient flexibility to address the Title III-related issues without implementing the amendments suggested by the FOMB, **the FOMB indicated that amending the O&M Agreement to resolve the FOMB’s concern would be necessary to obtain the FOMB Consent.**”¹⁵

Therefore, the parties also executed a Supplemental Agreement at the behest of the FOMB, which becomes effective only if “PREPA has not received the Title III Approvals when all other conditions precedent to LUMA’s takeover of the T&D System have been met under the O&M Agreement” and “terminates as soon as PREPA receives the required Title III Approvals, or in the event that PREPA has not received the Title III Approvals, within 18 months of the Supplemental Agreement becoming effective” (the “Interim Period”), unless the parties agree to an extension.

In the event that the Supplemental Agreement becomes effective, the Operator shall begin providing all the O&M services in accordance with the O&M Agreement and would be entitled to receive an “annual fixed management service fee equal to One Hundred Fifteen Million Dollars (US\$115,000,000.00) in 2020 Dollars, such amount to be adjusted for inflation in the manner set forth in Annex VIII (Service Fee) to the O&M Agreement on the Interim Period Service Commencement Date and each twelve (12) month anniversary of the Interim Period Service Commencement Date thereafter (such fee, as adjusted, the “Interim Period Service Fee”).¹⁶

This last-minute modification of the O&M Agreement raises a red flag for us, as it appears the main objective of the Supplemental Agreement, by making the “Title III Exit” a condition precedent to the Service Commencement Date, is to pressure the government of Puerto Rico to accept the terms of the Restructuring Support Agreement (“RSA”) the FOMB has already negotiated with a subset of PREPA’s creditors.¹⁷ The RSA, we note, is the first step towards the approval by the Title III court of a Plan of Adjustment (“POA”) with all of PREPA’s creditors. Otherwise, it is difficult to explain why the annual fixed fee payable during the period that the Supplemental Agreement is in effect is significantly higher (\$115 million) than under the O&M Agreement (\$70 million for year 1).

¹⁴ P3 Committee Report, page 73

¹⁵ *Id.*

¹⁶ Supplemental Agreement, Section 3.1 and Section 3.3.

¹⁷ Section 6.1 of the Supplemental Agreement reads in the relevant part: “. . .in addition to the Service Commencement Date Conditions set forth in the O&M Agreement, it shall be a Service Commencement Date Condition that the Title III Exit shall have occurred and that the Title III Plan and order of the Title III Court confirming same shall be reasonably acceptable to Operator. The Parties shall follow the process set forth in the O&M Agreement for establishing the Service Commencement Date, upon which date this Supplemental Agreement shall terminate and be null and void.”

Risk/Concern:

The Supplemental Agreement could be used to force the government of Puerto Rico to accept both an unsustainable RSA and a POA that produces rent-like returns for some bondholders and induces a significant increase in electricity rates.

Recommendation:

The government of Puerto Rico should not have accepted this condition in the first place. Having done so, there are few remedies available other than requesting the PREB to rule that the Supplemental Agreement is contrary to Puerto Rico's stated public policy that electric energy should be made available at the lowest cost possible.¹⁸

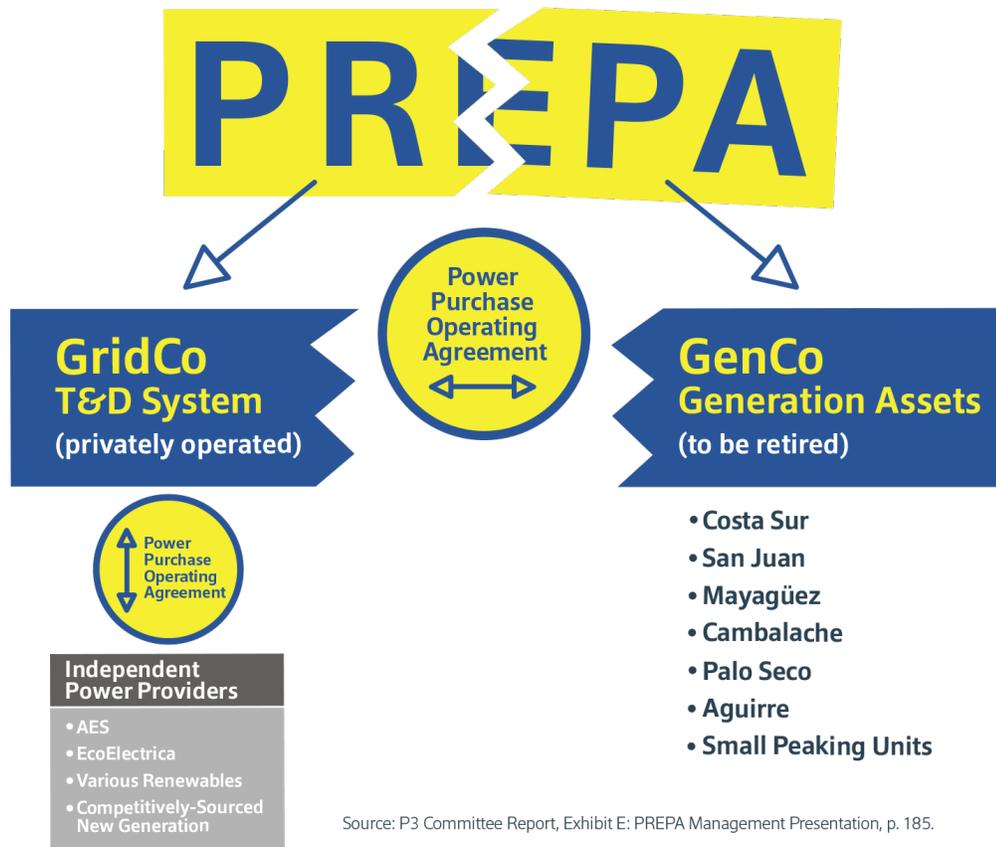
PREPA Reorganization into GridCo and GenCo

One of the conditions precedent to the Service Commencement Date is that a final plan for the reorganization of PREPA be in effect.¹⁹ This reorganization consists of splitting PREPA into two operating companies: (1) GridCo, which will retain ownership of the T&D System, and (2) GenCo, which will retain ownership of PREPA's generation assets until they are retired or otherwise disposed of.

¹⁸ The Puerto Rico Energy Bureau ("PREB") is the successor to the Puerto Rico Energy Commission, created in 2014. The PREB is Puerto Rico's energy sector regulator, with broad authority and legal powers to regulate the electric power market and enforce Puerto Rico's electric energy policy.

¹⁹ O&M Agreement, Section 4.5(q).

FIGURE 4: PROPOSED PREPA REORGANIZATION



As shown in the chart above, GridCo and GenCo are then required to enter into a power purchase and operating agreement (the "GridCo-GenCo PPOA"), with the Operator acting as agent of GridCo, providing for expense reimbursement, power delivery and other services related to the generation, and the sale and purchase of power and electricity from PREPA's generation assets, in accordance with the terms and conditions of the term sheet set forth in Exhibit H to the O&M Agreement.

Now, the notion that two PREPA subsidiaries will enter into a bona-fide, arm's length agreement is frankly naïve, not to say outright preposterous, and in our opinion the Term Sheet set forth in Exhibit H raises some serious concerns.

First, under the proposed terms for the GridCo-GenCo PPOA, GenCo will be responsible for procuring fuel for GenCo's generation units but it will be GridCo who "shall pay for all fuel purchases after GenCo certifies receipt and quality, and authorizes payment."²⁰ Furthermore, pursuant to Section 2.5 of

²⁰ Exhibit H to the O&M Agreement, Section 2.2.

Exhibit H to the O&M Agreement, “GridCo shall have no obligation to verify any invoice submitted by GenCo.” The failure to require even a minimum amount of due diligence from GridCo’s part prior to paying any invoice, including fuel invoices, is baffling to us, given the nefarious history of PREPA’s fuel procurement practices.²¹

Second, the terms and conditions of the proposed PPOA will govern GridCo’s purchases of energy generated by GenCo. And while Section 3.1 of Exhibit H states that “if the cost of the Energy from the Generating Facilities becomes more costly on an incremental basis than other sources available to GridCo, the output from the Generating Facilities shall be reduced to zero, if GridCo so requests...”, the concept of “cost” is very fluid in the energy world. In fact, electricity regulators around the world spend most of their time arguing over and defining which “costs” should be included in rate cases. It is important then that the final PPOA include a detailed definition of “costs” attributable to the generation of electricity so as to minimize consumer rates and avoid the cross-subsidization of GenCo’s inefficient generation units by GridCo.

Finally, the Operator is required to enter into an agreement to provide certain services to GenCo (the “GenCo Shared Services Agreement”) in accordance with the terms and conditions set forth in Annex VI to the O&M Agreement. According to Annex VI, “GenCo shall pay a shared service fee (without markup for profit) to be determined in, and in accordance with, the allocation methodology of the Shared Services Agreement”. Again, the term “cost” is not defined and presumably it is up to the parties to determine somehow that the amounts charged by GridCo for services provided to GenCo are “without markup or profit.”

Risk/Concern:

The O&M Agreement requires the execution of several other agreements that, in essence, constitute related-party transactions and which could provide opportunities for rent-seeking or outright malfeasance by the Operator or PREPA.

Recommendation:

With respect to the GridCo-GenCo PPOA we recommend that (1) the agreement be subject to close scrutiny, review, and prior approval by the PREB; and (2) that GridCo be required to exercise reasonable and prudent due diligence prior to paying any invoice submitted by GenCo. With respect to the GenCo Shared Services Agreement and any other related-party transactions or agreements not expressly covered by the terms and conditions of the O&M Agreement we recommend that they be submitted to the PREB for its prior approval, taking into account the impact on rates, as well as any other appropriate benchmark.

²¹ See, for example, Mary Williams Walsh, “At Puerto Rico’s Power Company, A Recipe for Toxic Air, and Debt”, *New York Times*, February 15, 2016; and “In Scandal at Puerto Rico Utility, Ex-Fuel Buyer Insists He Took No Bribes”, *New York Times*, March 2, 2016.

Power Supply Dispatch and Management

According to Section 5.13 of the O&M Agreement, the Operator shall, among other things: “(i) dispatch, schedule and coordinate Power and Electricity from available generation assets and provide related services; [and] (ii) coordinate the scheduling of load requirements and Power and Electricity with IPPs pursuant to their respective Generation Supply Contracts and with GenCo pursuant to the GridCo-GenCo PPOA.”

This is problematic for at least two reasons. First, it creates a conflict of interest for the Operator because, as we stated above, it will be providing GenCo with certain services pursuant to the GenCo Shared Services Agreement, in exchange for which GridCo will receive a yet to be determined fee. To the extent the amount of services provided by GridCo, and hence the fee charged, increases proportionally to the amount of electricity generated by GenCo, then GridCo may have an incentive to favor the interconnection of GenCo’s generation assets to the T&D System over other more efficient providers.

Second, as shown in Figure 4, it creates a potentially flawed market structure where a limited number of power producers (an oligopoly) would sell to a single buyer (a monopsony). In the absence of (1) assertive antitrust regulation and (2) the management of the electricity market by an Independent System Operator (“ISO”) to ensure that lower cost generators have preference in connecting to the T&D system, strategic interactions among and between market players, including price fixing via market signals, could take place. These strategic interactions could negate any operational advantages or savings ostensibly generated by entering into and executing the O&M Agreement.

The creation of a new market for the production and sale of electricity in Puerto Rico is really the core objective of PREPA’s transformation. Contrary to popular belief, however, the break-up of a vertically-integrated utility and the liberalization of the electricity market will not, necessarily, result in lower rates for customers. A lot depends on how the market is structured and on good, assertive regulation.

On the transmission and distribution side of the market, the introduction of Independent System Operators appears to be the key to generate successful market outcomes. These entities control access to the transmission assets in their jurisdiction and have no generation assets or retail customers. Therefore, they are impartial with respect to market outcomes, as long as system reliability is not compromised.²²

In the case of the O&M Agreement, the Operator acts as agent of GridCo (which is owned by PREPA), is in charge of billings and collections, and has an agreement to provide services to GenCo. Therefore, the Operator, as that figure has been defined in the O&M Agreement, is not a true Independent System Operator, and in fact may have incentives to extract rents from the current arrangement. In our opinion, this problem could be solved by spinning-off the system dispatch and operation functions to a newly-created ISO and have the Operator become a pure load-serving and system-maintenance entity.

²² See, for example, ISO New England, the Electric Reliability Council of Texas (“ERCOT”), and the New York ISO.

Risk/Concern:

The Operator is not a true Independent System Operator, as it has relationships with both GenCo and retail customers. This could lead to a market structure that allows the extraction of rents.

Recommendation:

Remove any system operation functions from the Operator when negotiating the GridCo-GenCo PPOA, leaving it only in charge of the maintenance of the T&D System and providing services to PREPA and/or GenCo. Create an Independent System Operator exclusively in charge of dispatching energy and maintaining system reliability and stability. Make the PREB the sole overseer of the new ISO.

On the generation side, it appears most of the savings that have been produced in other market restructurings are due to factors exogenous to local electricity markets, for example, improvements in generation technology and lower fuel prices (mostly natural gas from fracking). However, there is some evidence that moving from cost of service regulation, which is based on average cost plus a reasonable return on capital, to marginal cost pricing has had a positive effect in at least some jurisdictions in the United States.

In general, average cost (defined as total costs divided by the total amount of kWhs generated) is the basis for setting prices under a traditional regulatory regime, while marginal cost is the basis for pricing in a “competitive market”, where, at least in theory, a producer would be willing to generate an additional kWh as long as the marginal revenue it can receive from selling it equals or exceeds the incremental or marginal cost of producing it. Both pricing regimes have benefits and disadvantages the discussion of which is beyond the scope of this paper. Suffice it to state here that electricity producers operating under an average cost benchmark may have no incentives to control costs over the long run, while electricity producers selling at marginal cost may face a revenue shortfall because some costs may not increase merely proportionally with additional electricity production.²³

However, in the case of PREPA it is important to note that it operated for decades *without any independent regulation at all*, essentially recuperating its total costs plus whatever return on capital it deemed necessary, at its sole discretion, that is why special interest groups were so successful at extracting rents from PREPA throughout decades. The creation of the Puerto Rico Energy Commission, now the PREB, started to change that by enforcing a “reasonable rate” standard on PREPA. The current drive for the transformation of PREPA may yield some additional benefits by eventually pushing retail rates closer to marginal cost.

Yet, we should keep in mind that the relationship between average and marginal cost is dynamic. As Borenstein and Bushnell point out in the case of the United States:

²³ See James C. Bonbright, Albert L. Danielsen, and David R. Kamerschen, *Principles of Public Utility Rates*, Second Edition, (Public Utilities Reports, Inc.: Arlington, VA, 1988), for an in-depth treatment of these issues.

In the early 1990s, just prior to the initial years of restructuring, much of the country experienced large generation reserve margins...Larger reserve margins generally imply installed capacity (and capital) that is underutilized. Lower utilization implies higher average costs as the capital expenditures are spread across a smaller consumer base. Lower utilization rates also often implied that generation with relatively low marginal cost was often available, and marginal, thereby contributing to relatively low regional wholesale prices. Historically low natural gas prices during the 1990s also greatly contributed to low regional wholesale prices. The industry during the late 1990s was therefore experiencing very high reserve margins, leading to unusually low marginal costs and unusually high average costs. This is the fundamental source of the pressure for restructuring.²⁴

Then between “2006 and 2008 the U.S. natural gas price peaked above \$11/MMBTU. The higher gas prices drove up generation costs and power market prices. By this time, the relationship between marginal and average costs of power production had again reversed so that marginal cost-based market prices were higher than the average costs of operating and producing from a mixed generation portfolio.”²⁵ So the key is to keep a sharp regulatory eye on the relationship between average and marginal generation costs, especially as retail rates faced by customers are fixed, at least in the short-term, due to the PREB ratemaking process.

Risk/Concern:

The relationship between the average and marginal cost of generation is not fixed. It may change due to the introduction of new technologies or price changes in the cost of fuel, which is by and large the most significant cost driver for traditional power producers. Therefore, generators will seek to extract rents by trying to sell at the higher of average or marginal cost.

Recommendation:

The PREB should approve any and all power purchase agreements between the operator and generators and use its rulemaking powers to require that GridCo purchase power from GenCo or any Independent Power Producer at the lower of average or marginal cost, consistent with system stability.

Currently, the O&M Agreement requires the Operator to use “economic dispatch” to run the T&D System, but that term is ambiguously defined in the O&M Agreement.²⁶ Electricity generators in a market with relatively few participants know a significant amount of information about their

²⁴ Severin Borenstein and James Bushnell, *The U.S. Electricity Industry After 20 Years of Restructuring*, National Bureau of Economic Research, Working Paper 21113, April 2015, p. 6.

²⁵ *Id.* at p. 14.

²⁶ Economic Dispatch is defined in Schedule 1 to Annex I to the O&M Agreement as “the distribution of available supply sources to meet the total electricity demand in consideration of total, average and marginal per-unit generation costs, generator capabilities and constraints, and the operational limits of the T&D System.”

competitors: the technology they use, the fuel, the heat rate, the average time for ramping up or down, etc.

This information provides market participants with the ability to act strategically, and even to eliminate price competition under certain circumstances. This is especially risky when retail rates are fixed. Imagine the following scenario: it is a particularly warm summer day, system reserves are low due to scheduled maintenance or unforeseen outages, and demand for electricity spikes due to the unusual weather²⁷. In that situation, it is not unlikely that producers may refuse to increase the amount of electricity they are willing to sell in order to drive up wholesale prices as much as possible, perhaps even above the then prevailing retail rates charged to customers. In that event, the Operator would have to program forced outages or pay large customers to disconnect from the grid, in order to preserve system stability.

Risk/Concern:

The combination of an ambiguous definition of “economic dispatch” and an oligopolistic market structure means that strategic interactions among and between market players, including price fixing via market signals, could take place and result in rent-seeking behavior and the extraction of rents.

Recommendation:

The PREB should clarify, by regulation if necessary, the meaning of “economic dispatch” in the Puerto Rico power market. The PREB should also develop a process to investigate allegations of price fixing or market collusion. The Puerto Rico Department of Justice should also train lawyers from its anti-trust division to investigate these cases and file charges against power producers, if necessary. PREPA and all large IPPs should be required by law to disclose all pricing-related information at the request of the PREB.

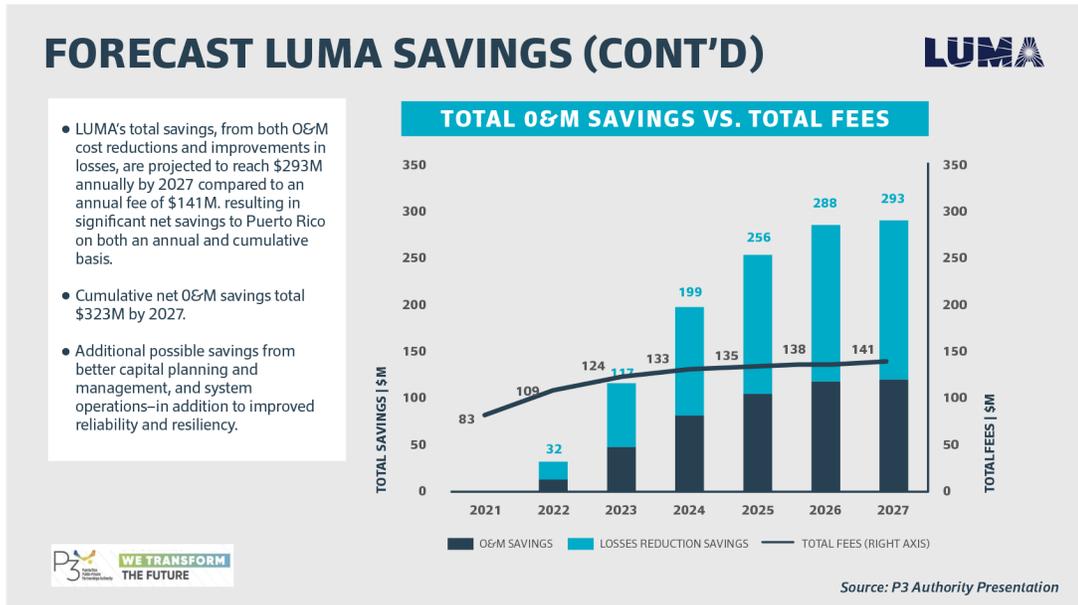
Auditing and Tracking Projected Savings

The P3 Committee Report states that the present value of the Fixed Fee and the Incentive Fee over the 15-year term of the O&M Agreement is approximately \$1.35 billion.²⁸ This means that entering into the O&M Agreement would be rational, from a purely financial perspective, if, and only if, the present value of the future savings to be generated by the Operator exceeds \$1.35 billion. In simple mathematical terms, executing the O&M Agreement is financially rational if: the PV of Future Savings over 15 years > \$1.35 billion (PV of the Fixed Fee and the Incentive Fee over 15 years).

²⁷ This is a hypothetical example that closely mirrors the current situation in California. See Mark Chediak, Brian Eckhouse and David R Baker, “California Braces for More Blackouts as Heat Wave Persists” in *Bloomberg*, August 15, 2020.

²⁸ P3 Committee Report p. 67

FIGURE 5: SAVINGS FORECAST



As shown in the chart above, annual savings are forecast to reach \$288 million by the fifth year that the O&M Agreement is in effect, compared to an annual fee of \$138 million, for net savings of \$150 million.

Similarly, Exhibit B to the P3 Committee Report: *Advantages of Third-Party T&D Operator of the Puerto Rico T&D System* sets forth a similar savings analysis by FTI Consulting. FTI estimated cost savings according to two scenarios. First, they assume “a 10% reduction in base revenue operating costs (non-variable costs such as labor costs and maintenance expense) due to new work methods and improved management practices implemented by the T&D Operator”, which they estimate will generate \$117 million in savings. And, second, they present “a higher efficiency scenario [that] evaluates the impact of a reduction in the amount of fuel and purchased power required due to improved operations leading to reducing line losses”, and which they estimate will generate \$177 million in savings.²⁹

Both analyses fall short of the full cost/benefit analysis we would like to see, but at first glance it appears that the O&M Agreement, if executed in accordance with its terms, would pay for itself. **The problem is that PREPA is notorious for overestimating savings from various reform efforts undertaken in the past.**

²⁹ Exhibit B to the P3 Committee Report, *Advantages of Third-Party T&D Operator of the Puerto Rico T&D System*, p. 101-102.

Risk/Concern:

The forecast of cost reductions to be generated by the Operator could be significantly overestimated.

Recommendation:

The P3A should hire an independent auditing firm to perform yearly audits and keep track of cost reductions allegedly generated by the Operator. The PREB should also be allowed to review and analyze those findings. The O&M Agreement should be adjusted as necessary if the Operator fails to deliver the requisite cost reductions.

Metrics/Benchmarks

The Operator, in order to collect the annual Incentive Fee, has to achieve certain performance benchmarks as set forth in Annex IX to the O&M Agreement. Annex X, in turn sets forth the methodology for calculating the amount of the Incentive Fee that is due, if any. The concern here is that a significant number of the benchmarks has not been determined yet and are subject to further negotiation among the parties.

The issue is, as our friend Roy Torbert from the Rocky Mountain Institute put it, that “on almost every one of the benchmarks they have to beat PREPA’s prior performance” but that is really a low bar as PREPA “has a really bad history with data and consistency”, not to mention a long record of deficient performance.³⁰

This is a key issue to determine the success or failure of the transaction. We understand that it may be necessary to set benchmarks against PREPA’s prior performance during the initial years of the contract period as the T&D System needs significant remediation in order to perform at reasonable standards. But at some point, the benchmarks for performance should be set against similar utilities in the United States.

Risk/Concern:

The payment of the Incentive Fee depends on the Operator achieving certain performance benchmarks that have not been determined yet. Using PREPA’s prior performance to measure progress could set a standard that is too low to justify the transaction.

Recommendation:

Performance metrics should be developed in consultation with the PREB and the P3A using best practices and benchmarks from similarly situated utilities in the United States.

³⁰ Robert Walton, “PREPA CEO sees bright future for embattled utility, but funding, grid mod challenges remain” in *Utility Dive*, July 20, 2020.

Capital Expenditures

The Grid Modernization Plan (“Grid Mod Plan”) prepared by PREPA and submitted to the Central Office of Recovery, Reconstruction, and Resiliency (“COR 3”) estimates that approximately \$21 billion in capital expenditures are necessary to bring the Puerto Rico power system to “industry standard levels.” Of that total amount, some \$12.2 billion are required to “rebuild the transmission, substation, and distribution systems to harden the power grid and improve its ability to withstand hurricane conditions.”³¹

The O&M Agreement, however, does not require the Operator to make any capital expenditures using its own funding. The financing for the entire modernization of Puerto Rico’s T&D system is predicated on obtaining federal reconstruction funding for such purposes. The FOMB states the situation clearly in PREPA’s certified Fiscal Plan:

The appropriated federal funds are necessary for the full deployment of Puerto Rico’s grid modernization plans. Should federal funding not materialize, Puerto Rico would have to make a difficult choice between increasing energy rates to meet unfunded capital investment needs, or remain unable to implement the necessary repairs and grid system modernization called for in the Proposed IRP, T&D roadmap, and PREPA and Commonwealth Fiscal Plans.³²

The problem is that Congress has only appropriated about \$1.9 billion specifically to modernize Puerto Rico’s power system. The rest of the funding would presumably be allocated by FEMA from the Disaster Relief Fund or would be subject to a future appropriation by Congress of funds from the Community Development Block Grant—Disaster Relief Program (“CDBG-DR”). This situation, however, begs the question: given the known hostility of the Trump administration towards Puerto Rico, what happens if those future allocations/appropriations are delayed or fail to materialize in the expected amounts³³?

In other words, what is Plan B? This is not a mere academic speculation. In fact, one of the conditions precedent to the Service Commencement Date is that PREPA “shall have, or shall have access to, adequate funding for Capital Costs for the first three (3) years of the Term, as such Capital Costs are detailed in the Initial Budgets approved by the Parties.”³⁴

We find this language confusing as it does not conform to the standard terms used to describe the federal budgeting process: namely, appropriation by Congress, and allocation, obligation, and outlay of funds by executive agencies. We assume the parties mean that federal funds shall have been obligated to cover the first three years of capital expenditures as set forth in the Initial Budget to be developed by the parties, but it should be clarified nonetheless to avoid future misunderstandings.

³¹ Grid Modernization Plan for Puerto Rico, p. ix.

³² *2020 Fiscal Plan for the Puerto Rico Electric Authority*, as certified by the Financial Management and Oversight Board for Puerto Rico on June 29, 2020, p. 79.

³³ Bianca Padró Ocasio, “Trump said Puerto Rico is ‘dirty’ and its residents ‘poor,’ says former DHS official” in *Miami Herald*, August 19, 2020.

³⁴ O&M Agreement, Section 4.5(i).

In any event, conditions precedent to any agreement can be waived by the parties. In addition, it appears the Operator has already hired IEM, a firm with significant experience in procuring and managing federal funds, to help the Operator and PREPA obtain the federal funding required to finance long-term capital expenditures. However, the risk that the federal government may fail to deliver the required funding to finance the Grid Mod Plan in its entirety remains.

Risk/Concern:

The financing of the capital expenditures required to modernize Puerto Rico's power system depends on the availability of federal funding, which may be delayed or not materialize at all.

Recommendation:

Operator, PREPA, and the PREB should prepare a "Plan B" setting forth capital spending priorities for Puerto Rico's T&D System in case federal funds to finance the Grid Mod Plan are insufficient or unavailable.

Operator-Owned Capital Improvements

As we explained above, the Operator does not have an obligation to make any capital improvements to Puerto Rico's T&D System. However, the Operator does have the option, pursuant to Section 5.5(d) of the O&M Agreement, to propose Operator-owned capital improvements to the PREB. The PREB, in turn, shall evaluate any such proposal on its merits and allow for the Operator "to earn a reasonable rate of return thereon consistent with the returns permitted to be earned by companies operating in the United States electric transmission and distribution business on similar investments."

Indeed, it appears that at least one of the partners in LUMA, Quanta Services, Inc. ("Quanta"), believes there is significant upside in making those investments. According to Quanta's press release announcing the transaction on June 22:

Quanta believes there is opportunity for it to compete for work associated with Puerto Rico's electric T&D system modernization efforts that are separate from its ownership interest in LUMA. Puerto Rico's electric T&D system is at a critical juncture after the destruction caused by Hurricanes Maria and Irma. As a result, the government of Puerto Rico, through the P3 and in collaboration with PREPA, have embarked on a plan to rebuild, modernize, harden and "green" its power grid, a majority of which is expected to be funded by U.S. federal disaster relief agencies and managed by LUMA. The P3 estimates that more than \$18 billion of electric T&D capital investment could be required through 2028 for this initiative.³⁵

³⁵ Quanta Services, Inc., *Quanta Services and ATCO-Led Consortium Selected by the Puerto Rico Public-Private Partnership Authority for the Operation and Maintenance of Puerto Rico's Electric Power Transmission and Distribution System*, June 22, 2020.

While the O&M Agreement mandates the PREB to review these transactions, we believe related-party transactions are particularly vulnerable to rent-seeking and shall be subject to additional review by the P3A as Administrator of the O&M Agreement.

Risk/Concern:

Bidding on capital improvements by the Operator, or any of its affiliates, would be a related-party transaction and such transactions are prone to generate rent-seeking opportunities.

Recommendation:

First, the PREB should develop a special administrative process to conduct a strict scrutiny of any such proposed transactions. Second, those transactions should also be subject to review and approval by the P3A, as Administrator of the O&M Agreement.

Liability Limitations

Section 4.1(g) of the O&M Agreement provides that the parties will request the PREB, at the time of the presentation of the initial budget, to grant a waiver of:

...Owner's, ManagementCo's and ServCo's liability to customers or any Person receiving Power and Electricity for any Losses arising in any way out of or in connection with the operation of the T&D System and the provision of Power and Electricity including any events of interrupted, irregular or defective electric service due to Force Majeure Events, other causes beyond Owner's, ManagementCo's or ServCo's control or **ordinary negligence, gross negligence or willful misconduct** of Owner, ManagementCo or ServCo, or their respective employees, agents or contractors...(emphasis is ours)

We believe this liability limitation to be overly generous to the parties of the O&M Agreement. We can understand the argument for granting a liability exemption in the case of damages caused by actions or events outside of the Operator's control. However, a blanket liability waiver in the case of negligence (failure to follow the required standard of care or carelessness); gross negligence (extreme indifference or reckless disregard for the safety of others); or willful misconduct (which technically may encompass outright criminal or unlawful activity), creates a moral hazard, or perverse incentive, for the Operator in the management of the T&D System.

Risk/Concern:

The liability waiver provisions proposed in the O&M Agreement are too broad and favorable to the Operator, creating a perverse incentive for the Operator to execute its duties and obligations without following the requisite standard of care.

Recommendation:

The PREB should not grant the broad liability waiver set forth in the O&M Agreement. Instead, it should provide for a limited waiver consistent with the dangerousness intrinsic to the operation and management of a large power system.

The O&M Agreement is Only One Part of a Larger Process

According to the Fiscal Plan for PREPA, certified by the FOMB, in addition to completing the transition to the Operator pursuant to the terms and conditions of the O&M Agreement, “much work remains to be done”...including the “diligent implementation of the following key initiatives:

- **Improving operations:** to ensure timely and on budget completion of key operational initiatives.
- **Modernizing the transmission and distribution system:** Develop and execute a capital investment plan to modernize and strengthen the electrical grid.
- **Upgrading the generation fleet:** Implement the PREB-approved IRP to modernize generation resources and increase renewable energy generation.
- **Improving workforce and public safety:** Increase the use of technology in grid operations to improve workplace safety and protect the public against faulty infrastructure.
- **Restructuring legacy debt obligations:** Support ongoing efforts to restructure PREPA’s existing, unsustainable debt load and regain access to capital markets.
- **Pension Reform:** To balance rate affordability with PREPA’s pension obligations to its employees, PREPA must review the ERS funding policy and incorporate revisions into PREPA’s Title III plan of adjustment.”³⁶

That is an ambitious agenda for any electricity company, but specially challenging in the case of PREPA, which has a long record of failed attempts at strategic change. The FOMB appears to acknowledge this when it states that “to successfully execute on the Fiscal Plan and ensure progress toward the transformation, PREPA must effectively manage several contingencies and risks.”

It appears to us, however, that these initiatives are running on parallel tracks and there is no real coordination among and between the parties in charge of all these moving parts, which could potentially lead to the failure of the attempt to modernize and transform Puerto Rico’s electricity system. It appears to us that all these initiatives should be coordinated from the PREB, as it is the only government agency with the legal authority and jurisdiction to oversee Puerto Rico’s power system as a whole.

³⁶ 2020 Fiscal Plan for the Puerto Rico Electric Authority, as certified by the Financial Management and Oversight Board for Puerto Rico on June 29, 2020, p. 10.

Risk/Concern:

Failure to coordinate the multiple actions required to modernize Puerto Rico power system could lead a catastrophic failure of the entire transformation process.

Recommendation:

The processes to transform PREPA should be coordinated by the PREB pursuant to a duly adopted Integrated Resource Plan that sets forth a logical sequence for PREPA's modernization and transformation. The PREB should exercise its legal authority to compel PREPA to comply with this requirement.

With respect to the PREB, we recommend that the next administration restore its legal standing and powers as a truly independent regulator. Regardless of ideological preferences, the fact is that a strong, independent regulator is going to be the key to the successful execution of PREPA's transformation process. In addition, the FOMB should ensure that the PREB has adequate budgetary resources to effectively execute its mission.

CONCLUSION

It should be obvious to any objective observer of the Puerto Rican economy that PREPA cannot continue to operate as presently constituted. The economic, environmental, financial, and social costs are unsustainable, given Puerto Rico's current situation. Thus, the transformation of PREPA is imperative for the future development of the island's economy. The O&M Agreement is a first step in this transformation, but it is far from perfect. We have highlighted some critical flaws in the O&M Agreement and proposed specific recommendations to address them. In addition, we are concerned that Puerto Rico's government may lack the required capacity to successfully manage this complex multilayered process, with several dimensions that intersect and reinforce each other. There are no guarantees that the process to modernize and transform PREPA will be successful. A lot depends on the effective coordination, execution, and implementation of other initiatives, exogenous to the O&M Agreement.

The big question, obviously, is whether customers will see lower electricity rates. In our opinion, eventually yes, rates may decrease, but only because PREPA is such a shambolic outfit to begin with and probably by less than what many customers are expecting. Again, many other things have to fall into place—just so—for this process to be successful.

In the end, however, we face a quite difficult choice. We cannot advocate in favor of keeping this utterly corrupt, environmentally harmful, and economically unsustainable government-owned enterprise in charge of our power system. Indeed, as we stated earlier in this brief, we strongly favor the thorough transformation of the Puerto Rico Electric Power Authority. Yet, as we have demonstrated herein, the proposed O&M Agreement is critically deficient in several key areas. If that agreement cannot be corrected in a timely manner, then we can only recommend the parties return to the negotiating table. And try again.



The Center for a New Economy (CNE) is Puerto Rico's first and foremost policy think tank, an independent, nonpartisan group that advocates for the development of a new economy for Puerto Rico. For more than 20 years, CNE has championed the cause of a more productive and stable Puerto Rico through its offices in San Juan, Puerto Rico, and Washington, D.C. We seek to inform current policy debates and find solutions to today's most pressing and complex economic development problems by rigorously analyzing hard data and producing robust empirical research. CNE is organized as a 501(c)(3) nonprofit that does not solicit or accept government funding. It relies solely on funding by individuals, private institutions, and philanthropic organizations.