

Questions from Rep. Grijalva for Mr. Ramon Cruz, Sierra Club Board of Directors

1. Does the Puerto Rico Energy Bureau have sufficient capability and resources, including staff, to ensure that PREPA's transformation is done properly?

The new PR Act 17-2019, that passed this month of April and signed recently by Gov. Rossello, assigns \$20 million annually to the Energy Bureau. Therefore, it seems like, at present, it should have sufficient staffing levels and develop expertise to ensure that PREPA's transformation is done properly. There are two critical issues, however, that need to be addressed otherwise regulation in the future could suffer.

The first issue is that the Energy Bureau needs sufficient budget to hire consultants from time to time with expertise on short term but critical aspects of the electrical system on Puerto Rico. A recent example are the ongoing costs for consultants to assist with the review and critique of the update to the Integrated Resource Plan (IRP). This skill is not needed on continuous basis, but the ability to hire experts as needed on subjects like the IRP, as well as microgrids, transmission hardening, and integration of new technologies, rooftop solar and battery storage technology will be key. Over the next 5 years, I can envision technical consulting budget needs in the range of at least \$500,000 per year. Without those funds, oversight and regulation could suffer.

The second and somewhat more important issue is independence and transparency. The Bureau is a newly formed agency and its strength and independence has not been proved yet. If judged by the previous one, while they took some independent positions, its leadership at times, fell into the same political games and favoritism typical of Puerto Rican party politics. Therefore, transparency or oversight might be needed at the beginning to ensure that it is established as a truly independent entity. This is needed because as of now, all of its members have been assigned by the same political party and the previous experiences do not lead to think that this would necessarily be different. A closer relationship or mentorship with similar institutions with a proven track record of independence, outside Puerto Rico, might be positive.

2. It is realistic to expect to bring electricity prices down in Puerto Rico in the near to medium term while replacing oil and coal-fired power generation with natural gas, transitioning to renewable energy resources, paying off existing PREPA bondholders and new investors and operators of power infrastructure making a profit?

Not necessarily, as there are many uncertainties still on the table. It really depends on how much "natural/fracked gas" is built, how quickly the transition to renewable energy occurs and how bondholders are paid back. It is possible for bondholders to be paid back through claims on insurers and through legal claims against underwriters, financial advisors and others involved in bond issuances (as discussed in the Kobre & Kim investigative report from Aug. 2018). An audit to the public debt should lead to a restructuring of that debt.

Aggressive investment in renewable energy is needed to bring down electricity rates. If natural/fracked gas generation is overbuilt (as current plans suggests) and if electric customers are locked into 30-year contracts to pay off new natural gas port and plant infrastructure, this will crowd out the potential for renewable energy to reduce rates. Therefore, in this scenario, natural/fracked gas is not a transition fuel but locking into a long-term infrastructure when there are instances around the world already transitioning to renewable energy.

For too long Puerto Ricans have been paying among the highest prices for electricity compared to the U.S. Only the island of Hawaii pays more for electricity than Puerto Rico. We are an island rich in history, spirit, and culture, but with fewer economic resources than people living in other parts of the U.S. According to the Census Bureau, the median household income in 2017 in Hawaii was \$74,923, whereas the median household income in Puerto Rico that year was \$19,775, a difference of more than a factor of 3.5x and lower than even the poorest of the 50 states.¹ This means that Puerto Rican families have less discretionary and disposable income than other Americans. It is an injustice for the poorest group of Americans to be paying among the highest electricity costs, at prices that are more than double what others pay for the same amount of power.

The new energy policy law in Puerto Rico (Act 17-2019) includes a goal for electricity consumer costs to go down to 20 cents per kilowatt-hour. This step by itself is unusual, in that I'm not aware of any other examples of state legislatures trying to mandate specific cost targets for electricity. While an aspirational policy of bringing down electric costs is good, it is critical to realize that even if we reached that 20 cent goal, Puerto Rico's energy would still be the second most expensive in the U.S., behind only Hawaii.

As our island transitions away from fossil fuels which come along with high import costs, we have the opportunity of a generation. Operating a solar panel doesn't cost any more on an island than it does in the Midwest or the Southeastern U.S. In fact, as a tropical island in low latitudes, solar power in Puerto Rico is actually a more favorable resource than solar power in many parts of the mainland U.S. We can bring down our generating costs in Puerto Rico as we add renewable energy and replace expensive oil and coal imports with solar power.

As recent industry and government data show, wind and solar prices are at all time lows. For example, the cost of utility scale solar energy has declined 86% over the last 10 years.² Prices have fallen consistently and significantly, and additional price drops are reasonably anticipated for years to come. In contrast, many commodity price forecasts for coal and gas to experience flat to increasing costs from today through the foreseeable future. We are approaching--if not already at--a time where increasing levels of wind and solar on the PREPA system will result in

¹ U.S. Census Bureau. <https://www.census.gov/quickfacts/pr>

² Lazard, 2018. Levelized Cost of Energy - November 2018. <https://www.lazard.com/media/450784/lazards-levelized-cost-of-energy-version-120-vfinal.pdf>

lower electric rates, as renewable generation substitutes for more expensive fossil fuel purchases.

Finally, as I stated in my testimony, an important issue to watch for when integrating renewable energy, especially rooftop solar is social equity. For me, it is clear that the focus of the solarization strategy for Puerto Rico and the focus of a large portion of the billions of dollars that the Federal Government is supposed to contribute, should be on lowering the price and improving the quality and resilience of the system. That is something you can get through the development of microgrids to decentralize the system and investment in rooftop solar. However, this is not so easy as so far, the efforts in the island have benefited the haves, rather than the have-nots.

Currently, in order to receive funds to solarize, one must have property titles and those who do are the ones that become energy independent, passing the responsibility of maintaining a centralized grid to the “have-nots” and regular consumers. Therefore, our efforts should aim to provide the infrastructure to generate power from the sun all over the island on people’s roofs to benefit the system as a whole. Of course, there must be an incentive to participate in such programs, but that cannot only benefit those who own the roof. This must be accompanied by an outreach campaign for people to participate in the leasing program and for the utility to provide that service.

This rooftop solar plan, while possible through privatization, is much easier to implement from a transparent public entity regulated by a strong, independent referee. This together with issues of governance and finance raised by some of my colleagues should help the federal government ensure that the much needed financial help coming to the island guarantees a strong and resilient electric system in Puerto Rico for the majority of its citizens.

3. In your estimation, how much per kilowatt hour would it cost to pay off PREPA's existing debt and cover the costs of new power generation plus profits for the investors in those facilities and a concessionaire for the transmission and distribution system?

As for the cost of paying off PREPA bondholders, that is a complex topic that is beyond the scope of this hearing, so I will provide only a short remark. PREPA was plagued by decades of mismanagement and lack of planning. In addition, a fuel oil purchase scandal prolonged the amount of time the island was dependent on expensive and highly polluting oil burning power plants, when the rest of the country was moving towards cleaner power.³ As PREPA itself has written in its preliminary Draft Integrated Resource Plan:

“Electricity sales in Puerto Rico declined by 18% since the 2008 recession and net migration.

³ Multibillion-Dollar Oil Scandal Goes Unaddressed in PREPA Contract Reform and Privatization <http://ieefa.org/wp-content/uploads/2018/07/Multibillion-Dollar-Oil-Scandal-Goes-Unaddressed-in-PREPA-Contract-Reform-and-Privatization- July-2018.pdf>

Starting in 2007 until 2017, Puerto Rico's real gross national product (GDP) shrank by approximately 17% and the population declined by over 15%.

Industrial sales declined by 47% in FY 2007 to FY2017, while residential and commercial sales fell 12% and 10% respectively. Industrial share of the total energy sales declined from 20% in FY 2007 to 13% in FY 2017.

The FOMB forecast for population shows a decline of 5.8% in FY2018 due to hurricane fatalities and net migration off the island. Over the study period, FOMB projects population to decline at 1.3% per year in 2019–2038.

Population in Puerto Rico is projected to fall by over 900 thousand people by 2038.⁴

I am not aware that any state or other governmental jurisdiction in the U.S. is facing the mix of challenges currently being faced by Puerto Rico. It seems unwise that the diminishing number of Puerto Ricans who are undergoing an unprecedented drop in per capita GDP are expected to pay back a significant amount of the debt owed to bondholders through higher electric rates. The financial and demographic situation on the demands robust federal intervention that doesn't set the table for continued financial problems for the next 20 years. The financial problems at PREPA and on Puerto Rico should be solved once, with durable solutions.

Finally, as stated earlier, this debt was issued under questionable circumstances. Therefore, there should be an independent audit of those transactions to hold accountable anyone responsible for dubious advice, knowing the circumstances that PREPA was going through.

As for the question on the price per kilowatt hour, I will rely on a recently published study by IEEFA that estimates that costs under privatization will rise to 27 cents/kWh, including costs of new privately owned power generation and a concessionaire for the transmission and distribution system (yet still including \$7 billion in federal funding for transmission and distribution that Puerto Rican ratepayers would not have to repay). Specifically, this estimate includes 17 cents/kWh for privately owned generation, 3.7 cents/kWh for the transmission and distribution system, 2.6 cents/kWh for legacy debt and 1.5 cents/kWh in a "corruption tax" based on PREPA's history of non-transparent and overpriced contracts.

(http://ieefa.org/wp-content/uploads/2019/01/PREPA-Privatization-Will-Hurt-Consumers-and-Slow-Economic-Recovery_January-2019.pdf)

It should be noted that the IEEFA study assumes the implementation of the most recent debt restructuring agreement, which has not yet been approved and does not include payment of all of the legacy debt. PREPA's February 2019 IRP submitted to the Puerto Rico Energy Bureau estimates legacy debt costs at approximately 5 cents/kWh. Full repayment by ratepayers of the legacy debt would raise rates under privatization to about 30 cents/kWh.

⁴ PREPA. Puerto Rico Integrated Resource Plan 2018-2019, Part 3.