

Energy Briefing

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Puerto Rico Electric Power Authority (PREPA)

The Puerto Rico Electric Power Authority Faces An Uphill Battle

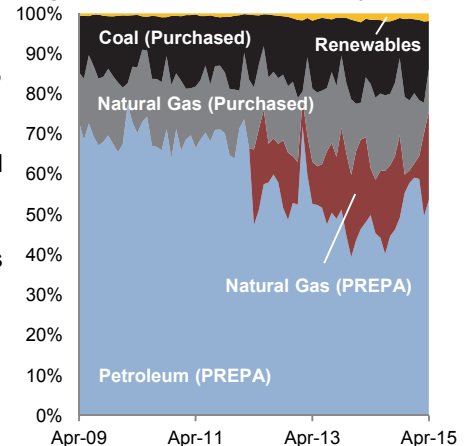
Puerto Rico faces headwinds on many fronts—8 years of economic contraction, a declining population (down 7.3% since 2005), US\$72 billion in total public debt, etc.—but it is likely the Commonwealth's publicly owned electricity utility, the Puerto Rico Electric Power Authority (PREPA), that faces the most acute challenges. PREPA holds a monopoly on the transmission, distribution, and sale of electricity in Puerto Rico but poor management and an outsized dependence on expensive petroleum-fueled generation has saddled the utility with more than US\$9 billion in debts. Despite managing to make a US\$415 million bond payment due July 1st (counter to market expectations), the utility will continue to face challenges meeting its debt obligations. Amidst ongoing negotiations with creditors, PREPA released the details of a US\$2.3 billion “transformation” plan that would update much of the utility's archaic infrastructure and make it a more sustainable (both financially and environmentally) provider of electricity in the long term.

The most striking aspect of PREPA's generation system is its dependence on petroleum, which is far more expensive than alternatives such as natural gas, coal, or even renewables. Petroleum accounted for 72% of PREPA's total generation in FY2014 and 47% of Puerto Rico's total electricity (Figure 1), compared to less than 1% on the US mainland. The exceptionally high cost of petroleum-based generation is evident when juxtaposed next to the prices that PREPA pays to its co-generation partners, EcoElectrica and AES, which generate electricity using natural gas and coal, respectively. In FY2013, PREPA purchased electricity from EcoElectrica and AES at a rate of US\$114/MWh and US\$93/MWh, respectively, while the fuel cost alone of PREPA's own generation averaged US\$190/MWh (Figure 2). When operation and maintenance costs of PREPA's power plant, transmission, and distribution infrastructure are included, that figure jumps to US\$242/MWh in FY2013 (Figure 3).

PREPA will likely require extensive upgrades to its systems if it is going to bring down its generation costs. Indeed, the median age of a PREPA-operated power plant is 44 years, compared to a US mainland average of 18 years, and its transmission and distribution infrastructure is similarly outdated, evidenced by implied transmission losses of almost 15% between FY2009 and FY2013 compared to a US average of only 6%. However, despite paying more than twice the mainland average (26.4¢/kWh vs a US mainland average of 10.5¢/kWh in 2014), Puerto Rican ratepayers barely cover PREPA's day-to-day operation, let alone the needed upgrades to its infrastructure or the retirement of the utility's sizable debts.

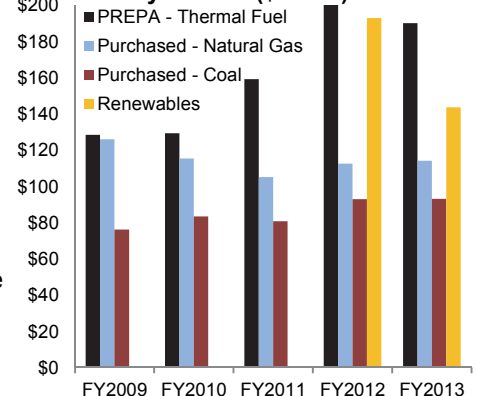
Looking ahead, PREPA will need to either increase electricity rates, decrease costs, or (more likely) both. Inevitably, raising rates will hurt the struggling Puerto Rican economy, push demand even lower, and necessitate further rate increases to distribute fixed costs; PREPA lost 1% of its customer base in FY2014 and electricity sales fell 3.6% y/y. Reducing the cost of generation by converting most of PREPA's petroleum-based fleet to natural gas is a far more attractive path to financial sustainability, but this requires a lot of cash, which PREPA will have a very difficult time coming by given its current financial state.

Figure 1: Generation Share By Source



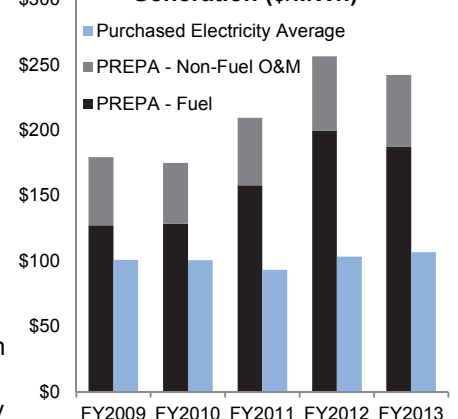
Source: PREPA, Scotiabank Economics.

Figure 2: Cost of Generation By Source (\$/MWh)



Note: PREPA Thermal Excludes O&M Costs
 Source: PREPA, Scotiabank Economics

Figure 3: PREPA vs Purchased Power Generation (\$/MWh)



Source: PREPA, Scotiabank Economics.

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