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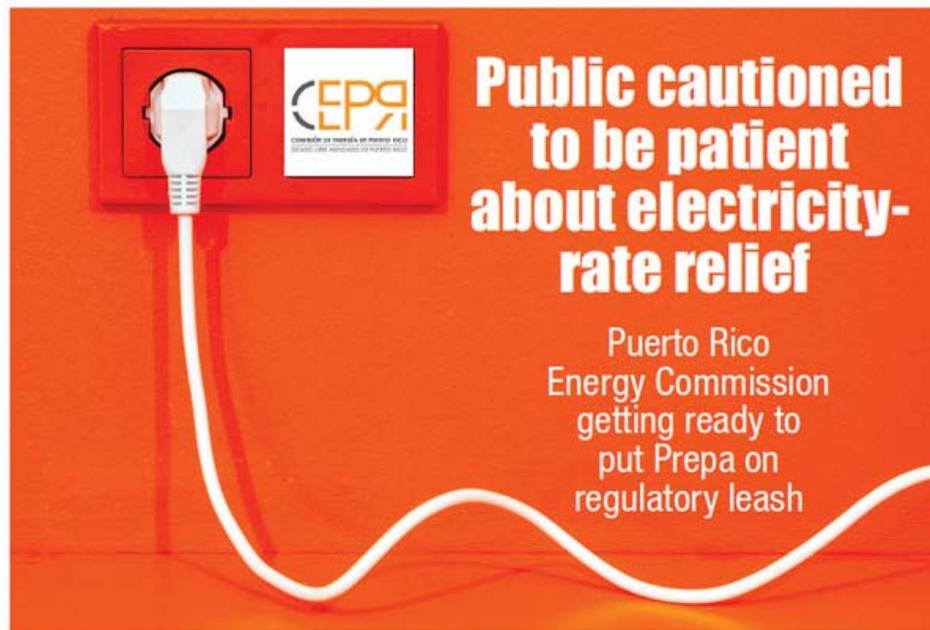
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Energy Commission:

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Don't expect results for a long time



Since being created last year as part of a sweeping energy reform, the three-member Puerto Rico Energy Commission (PREC) has been quietly working out of the spotlight, enacting temporary regulations to guide its daily operations and taking care of such mundane tasks as finding office space and creating a budget, as well as cutting through the wilderness that comes with being a new entity in the sprawling commonwealth government and preparing to deal with a bureaucratic Puerto Rico Electric Power Authority (Prepa).

All this is about to change, however. Established little more than six months ago, and with an immensely tall work order before it, PREC is about to step into the limelight, whether or not it is completely ready for it.



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"The board has a very difficult role. It has to be independent, robust and make things happen that haven't happened in the past 20 or 30 years," said Senate President Eduardo Bhatia, who is the author of the energy reform that created PREC.

"The next 200 days will see the largest transformation of the electricity sector in Puerto Rico, bringing us into the future from the past. In the next 200 days, there will be a number of important things happening at once," Bhatia added.

Topping the list of game-changing events will be a review of Prepa rates, which will begin in earnest in May and probably take a full year. The government utility is also required under the energy reform to create this summer a long-term business plan, called an integrated resources plan, which will chart the course of the utility during the next two decades, the first time Prepa has undertaken such a task, which is standard in most other jurisdictions. At the same time, Prepa will have to come up with a plan, which has to be executed by May 2017, on how to modernize its aging fleet of powerplants.

These events will play out against the backdrop of negotiations between Prepa and its creditors, with the troubled government utility widely expected to default by this summer on its \$9 billion debt load, which would be the largest by an issuer in the U.S. municipal-bond market history. At the same time, new federal air-quality regulations will take hold this year, with Prepa far behind on its plans to increase power generation using natural gas, which puts it at risk of facing federal fines over the matter. Right now, natural gas is only 25% of our generation capacity, with most of it being produced by a private plant. It is also supposed to comply this year with a mandate that at least 12% of the power generated in Puerto Rico must come from renewable sources.

NEW MANDATES A CHALLENGE

Many of the new mandates being placed on Prepa through the energy reform and PREC dovetail with the utility's obligations to bondholders under an existing forbearance agreement, including the upcoming rate review and the delivery of a comprehensive business plan.

The newly formed PREC will play a central role in these important developments, with the duty to institute a new rate structure for Prepa, and the power to pass judgment on the utility's long-term business plan and plant-modernization strategy.

If it deems Prepa's long-term plan out of sync with Puerto Rico's energy policy, it can create its own and force Prepa to follow it. And if Prepa's plant-modernization plans fall short, PREC can undertake a request for proposals from the private sector and order Prepa to purchase the power rather than continuing to produce its own at aging plants, whose lack of efficiency drive up costs and don't comply with federal air-quality standards.

Moreover, PREC can field a wide range of customer complaints against Prepa for any violation of its organic law. It also has the legal power to fine Prepa up to \$25,000 per day for any violation of its charter law and can take the utility to court to force it to carry out its orders.

PREC's responsibilities go beyond the oversight of Prepa. It will serve as referee of the entire energy sector. It has the duty of certifying existing and new powerplants, as well as writing the rules for how and at what cost private powerplants can lease the Prepa grid to sell power to third parties and the procedures for small businesses and residences to connect to the grid. It will serve as the arbitrator for any disputes that may develop between Prepa and private entities.

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The creation of PREC, which is at the heart of Act 57 of 2014, or the Puerto Rico Energy Relief & Transformation Act, is "revolutionary" and a "game changer" in Puerto Rico, Bhatia said, even though every state and just about every independent nation has its own independent energy regulator.

For years, several entities—from the White House to the Center for the New Economy—have been clamoring for the creation of an independent energy regulator in Puerto Rico. In a recent report on the island's economic challenges, the Federal Reserve Bank of New York hailed the development of PREC, but said the board would have to perform to improve the energy outlook for Puerto Rico.

"The legislation should foster meaningful progress in lowering Puerto Rico's electricity rates. However, it remains to be seen how the new law will be implemented and how its provisions will play out over time," the report said.

Nobody is more aware of the tall order facing the new government entity than PREC Chairman Agustín Carbó Lugo and PREC commissioners Ángel Rivera de la Cruz and José Román Morales. And while they are enthusiastic about their central roles in the historic shift in the energy marketplace, they are cautious to play down public expectations, saying their goal of improving electricity services, including lower costs, increased reliability and less pollution in the process, won't happen overnight.



"This is historic. We are ending the self-regulating authority Prepa has had for years without allowing people to know how decisions were made. Now everything will be open for public review. This has worked in the [continental] U.S. and I am betting it will work here. We have a culture of self-regulating agencies," Carbó said. "However, people have to understand this doesn't happen overnight. They have to be patient. We are making decisions about the future of the island and we have to ensure we make the right ones."

Scott Hempling, a Georgetown University expert in utility regulation who has been hired to advise PREC, called Puerto Rico's energy challenge the most difficult of his 30-year professional career because of the lack of maneuvering room and limited resources.

"Any move you make causes some negative reaction somewhere. The interdependence among every aspect of the economy, especially in an island economy, is pervasive. So whatever we do with Prepa and whatever we can't do with Prepa has some connection to what else is going on in the economy," Hempling said.

CHANGE ON THE WAY, BUT NO SHORT-TERM RELIEF

Part of the difficulty of PREC's role is that it has to base its decisions on several factors, including Prepa's existing financial obligations and the need to comply with federal and local environmental laws. While the

aspiration is for the price of electricity to come down along with the collateral costs of energy production, such as pollution, almost nobody expects that to happen any time soon, especially given Prepa's debt load and its need to invest billions to modernize its plants and diversify its power production.

Hempling said there are big philosophical questions moving forward about the amount of competition that should exist in Puerto Rico's energy market, as well as whether Prepa should be kept as a going concern, radically restructured or eliminated. However, he said those questions would be best addressed during the medium term, and the first order of business for PREC is for it to win the trust of the investment community and ensure the regulatory process will have credibility.

"A lender doesn't have an obligation to lend. A shareholder doesn't have an obligation to invest his [or her] equity. You can impose obligations over and over, but if the money doesn't flow, they won't be met," Hempling said. "There are costs of the past and there are opportunities for the future. If a utility is going to maintain credibility, it needs to attract investment dollars. It must pay off the past at the same time as it invests in the future.

"You can say you want to replace an old plant with a new one. You can say you want to replace old fuel contracts with new renewable-energy opportunities. The problem of the present is you have to pay for the past problems we created at the same time as we are planning for the future," he added.



One of the challenges of the new regulatory body will be to try to ensure the public doesn't lose its patience waiting for improvements such as lower prices, added Hempling, who authored the books "Regulating Public Utility Performance: The Law of Market Structure, Pricing & Jurisdiction" and "Preside or Lead? The Attributes & Actions of Effective Regulators."

"The public can be patient if they see a trend. If the public is promised 'immediate permanent rate reductions,' the public will be

disappointed. If the public is promised a five- or 10-year plan, in which one can see a trend from high to medium to lower costs; a trend of high dependency to lower dependency on fossil fuels; a policy of excessive salaries and large workforce to medium to less so; and if the public can see these trends, the public can learn patience. If the public is consistently reminded that low costs and reliable service is just a year away, the public will grow cynical," Hempling said.

That message was also driven home by Prepa board member Juan Rosario, who said politicians have to stop making promises they won't be able to deliver.

"The hour of truth has arrived and you have to stop telling stories. In the short term, talk of lowering energy costs is just politics. We have to change the discussion. Prepa's level of debt has to be dealt with," he said.

PREPA RATE REVIEW A TOP PRIORITY

A top priority for PREC is to review Prepa rates, which is mandated under the energy reform.

"There is so much stuff on our plate, and we have to focus on the most important issues. There is a clear mandate to undertake an energy- rate review, which we will have to tackle. It's a complex process. It isn't something that will be easy to get done, and we have to make sure we do it right. We are going to put a lot of energy into that," Carbó said.

While government officials and clients have been pressing for lower rates, investors will likely argue they should be increased.

Carbó has acknowledged that Prepa's financial situation would need to be addressed in reviewing rates, but said PREC would ensure Prepa undertakes the steps mandated under the new law that will enable it to bring down rates over the long term.

The PREC chairman has also anticipated holding public hearings on the rate-review process.

In reviewing the rate, the law mandates PREC to analyze: the efficiency, capacity and suitability of Prepa's services and facilities; expenditures related to Prepa's debt repayment; direct and indirect costs related to the generation, transmission and distribution of energy, including stranded costs and costs attributable to the loss of energy due to theft or inefficiency; energy-purchase adjustment and fuel-purchase charges; Prepa's capacity to improve services and its facilities; its use of energy conservation and alternative energy; data on subsidies and special laws; and any other information deemed necessary.

"The commission shall guarantee that the approved rate will be sufficient to guarantee payment of principal of and interest on bonds and other financial obligations of Prepa and shall comply with the terms and provisions of the agreements entered into with or in benefit of buyers or holders of any bonds or other financial obligations of Prepa," the Energy Relief Act states.

The law requires PREC to establish a fixed charge on the rate that clearly shows the amount customers shall pay because of Prepa obligations to bondholders. As part of a new transparent-billing mandate, PREC will approve under the "fuel adjustment" and "energy purchase adjustment" charges items that are only a portion of the costs directly related with fuel and energy purchases.

Currently, Prepa charges an 11% markup on these charges to cover the cost of subsidies, electricity theft, and administrative and operating losses. These charges would be eliminated, with Prepa potentially making up the revenue with an increase in the basic electricity rate, which hasn't been altered since 1989.

During its initial rate-review process, PREC could approve a mitigation plan if it deems necessary to ensure Prepa's costs, such as energy theft, unpaid bills and other losses, are reduced to industry-standard levels within a three-year period, according to the Energy Relief Act. PREC must publish on its website records of Prepa's compliance with the mitigation plan and its progress.

PREC is empowered to begin a review of Prepa rates anytime it deems the issue to be in consumers' best interests, according to the Energy Relief Act. PREC could also conduct a rate review on the basis of a complaint.

The law specifies that PREC should begin the rate review six months after the enactment of the legislation and that the process should be wrapped up within six months. That would imply that the review should have begun last November, with an order establishing that new rates should be in place by summer, with the rates taking effect 60 days later.

However, Carbó said PREC has determined that Prepa would present a rate request by late May, and then the commission would review the proposal over the next six months before coming down with an order to establish the new rate.

The PREC determination is a "reasonable interpretation of the spirit of the law," Carbó said. The new timeline means a new Prepa rate should take effect before the end of this year.

In gearing up for the tariff review, PREC issued a Feb. 12 information-request order to Prepa to help it determine the utility's financial condition, as well as its accounting and fiscal control systems. The order had 86 different items, about which Prepa must provide information to PREC within 30 days from the order.

The order seeks "necessary information on Prepa's operations and functioning—from a technical, administrative, financial, accounting and fiscal perspective—to adequately carry out its powers and responsibilities and evaluate the electric-service rates of this utility."

Prepa has hired an outside contractor to help develop a proposal. "This is a very specialized process and they have to be ready. The burden of proof is on them to show that the rate they propose is fair and reasonable. They have to put together a case. It is a quasijudicial proceeding, and they have to show that the rate is fair and reasonable," Carbó said.



A LONG-TERM PLAN FOR PREPA

Beyond the rate review, Prepa is mandated under the law to come up with a 20-year integrated resources plan and present it to PREC by July 1.

While such plans are standard operating procedure for public utilities throughout the world, Prepa, which has acted autonomously for years as a self-regulating monopoly, has never undertaken one.

"It is our understanding that Prepa is doing something like this for the first time. It is a huge, highly technical undertaking," PREC's Rivera said. "It will point us in the right direction. It will show us where we are going to be in the next 20 years in terms of energy production, reliability, efficiency and safety."

The Energy Relief Act establishes much of what needs to be included in the plan, and PREC is in the process of defining the components. Prepa has also hired an outside contractor to help develop the plan.

The plan must include a range of energy-demand forecasts and an evaluation of conservation resources; conventional and nonconventional generation technologies available in the market; transmission capacity and reliability; a combination of available resources designated to promote energy-sources diversification; and a plan to stabilize energy costs and improve the reliability and stability of the electric power grid.

The plan must also evaluate existing Prepa powerplants and facilities to "take into account the improvements in the operational efficiency of plants, the useful life of existing plants, and the retirement date and decommissioning costs," as well as analyze Prepa's environmental impact, according to the law.

Moreover, the plan must determine how to interconnect renewable- power projects into the grid to comply with Act 82 of 2010, which mandates a percentage of power produced in Puerto Rico from renewable energy.

The law requires ample public participation in drafting the plan, which must be approved by PREC. A lot of the regulatory agency's muscle will come in its oversight of this plan, which will force Prepa to make decisions for the long-term well-being of Puerto Rico, rather than shorter-term business decisions for its own benefit.

"This is where the commission can really go into Prepa operations. This is really where the savings are going to come from," said Sergio Marxuach, public policy director of the Center for the New Economy, a long-time advocate for an independent energy regulator. "You look at a time horizon of 20 years and given expected

demand, analyze what are the best technologies to rely on and what are the efficiency metrics and the power to enforce those metrics. This should eventually result in significantly lower costs for customers."

PREC can approve the Prepa plan, change it or even draw up its own and force the utility to follow it. Carbó pledged an "extensive review."

"It's an integrated process. We can't lower rates if we keep everything the way it is right now. Depending on burning fossil fuels isn't the right policy call if the whole world is moving toward renewable power," Carbó said. "The plan shows how Prepa will comply with the energy policy of the island and the environmental regulations. All these fiscal matters will also be inserted into that plan."

MANDATING EFFICIENTLY PRODUCED POWER

The energy reform also requires that 60% of fossil-fuel power generation in Puerto Rico be "highly efficient," a definition that PREC is amid drawing up, after undertaking an extensive information request from Prepa and the handful of private powerplants operating on the island. PREC has a team of advisers, including professors from University of Puerto Rico's Mayagüez campus, helping to define "highly efficient." PREC members said they are "close" to making a determination in this area.

Once that definition is drawn up, Prepa will have 60 days to submit a plan to reach that target. PREC would then approve the plan, ask for improvements or determine that Prepa's plan isn't realistic and then open up bidding from the private sector to build new efficient plants, with somewhere in the neighborhood of 1,000 megawatts required.

Critics have lashed out at Prepa for investing millions in its aging plants, which drives up the cost of energy through their inefficiency, rather than investing in new highly efficient plants.

The move to require efficient power production will also be a big step in eventually lowering electricity rates, PREC members stated.

"Moving to highly efficient power production is one of the critical things we have to take care of first. Once we have that, then we can focus on transmission and distribution. Because of the complexity of the grid, that would be a bigger infrastructure project, but the impact would be less than modernizing the plants," Rivera said.

The highly efficient power requirement must be met by July 1, 2017, but PREC can grant Prepa an extension of one year if the utility is making progress and has good reason to need more time. "It isn't a wish list; they need to provide hardcore information on the technology and changes they will make. We will also be monitoring that process to ensure compliance," Román said.



SETTING THE RULES FOR COMPETITION

The creation of PREC, however, goes far beyond overseeing Prepa, which has often been accused of putting its own interests ahead of the public good. By having an independent regulatory agency to establish and adjudicate the rules, more private players should come into the local energy market.

"Regulations provide certainty to investors. Once they see what the regulations are, they usually feel much more comfortable, but whether this will grow is unpredictable," Carbó said.

"It all depends on our actions. We are excited. This is a historic moment. We are in the middle of the transformation of the entire energy industry. It isn't just Prepa anymore. There are also more players, more possibilities and renewable energy. We are excited to be a part of this and about how we can shape the future of the electric grid and the industry," Román added.

PREC is in the "advanced stages" of enacting new net-metering regulations for the interconnection between small business and residential power systems and the Prepa grid.

It is also undertaking new regulations for wheeling, whereby private power producers lease a portion of the Prepa grid to sell power to third parties.

Under the Economic Incentives for the Development of Puerto Rico Act, or Act 73 of 2008, Prepa was first required to lease its grid to private power producers who wish to transmit power to third-party customers. While Prepa was mandated to enact a "wheeling transmission regulation" to establish the price and requirements for such interconnections by January 2010, final regulations have yet to be approved and draft rules have been heavily criticized as too complex and expensive to allow for wheeling.

While the wheeling regulations are a priority, PREC is still in the initial stages of drafting them. "We are looking at what Prepa did in the past as well as what has been done in other jurisdictions so we can establish the best practices," Román said.

PREC's drafting of new net-metering and wheeling rules look to ensure that Prepa is acting judiciously in allowing interconnections to its grid. The issue is very important as more and more businesses and residences, fed up with waiting for Prepa rates to come down, look to mount their own off-the-grid power-generation systems.

"The natural progression of things is to move toward having more players in the market. We have to make sure that we have all the regulations and foundation in place. That is going to come from the decisions we make in the early years because a highly regulated market with several competitors is healthy," Rivera said.

Puerto Rico Energy Commission members



Puerto Rico Energy Commission (PREC) Chairman Agustín F. Carbó Lugo has worked as an engineer and attorney at the U.S. Environmental Protection Agency (EPA), with broad regulatory and oversight experience in many areas. At the EPA, he led regulatory efforts to implement a Federal Air Implementation Plan at one of the largest powerplants in the U.S. Southeast.

In Puerto Rico, Carbó has worked in the public and private sectors on important energy valuation and renewable-energy projects, among others. While a student at Yale University, he worked at the Public Policy & Environmental Law think tank on themes related to hydraulic fracturing—known as fracking—of natural gas.

During the current term of Gov. Alejandro García Padilla, Carbó served as executive director of the Solid Waste Management Authority and worked with other agencies in establishing a public policy to develop solar-power projects at closed landfills. He is a member of the Puerto Rico Sustainability Committee.

Carbó earned a bachelor's degree in civil engineering and a master's in environmental engineering from Northeastern University, and a law degree from Vermont Law School. He also earned a master's degree in public policy at Yale University.



Board member Ángel Rivera de la Cruz earned a bachelor's degree in mathematics from University of Puerto Rico's Mayagüez campus, and a master's in math from the University of Massachusetts, Amherst. Rivera joined the Navy Nuclear Propulsion Officer Candidate Program in June 1999 and was commissioned through Officer Candidate School in Pensacola, Fla., in June 2000. After commissioning, he attended the Naval Nuclear Power School and Naval Nuclear Power Training Unit,

where he qualified as Engineering Officer of the Watch in August 2001.

After completion of Submarine Officer Basic Course, Rivera reported on board USS Hampton, serving through January 2005 in various roles including electrical division officer, reactor controls division officer, damage control assistant, electronic materials officer, assistant operations officer and assistant engineer. In addition, he completed Prospective Nuclear Engineering Officer School and earned a master's degree in engineering management.

Rivera attended officer-recruiting training in Pensacola, Fla., and reported to NRD Miami—Navy Officer Recruiting Station San Juan. He also earned a bachelor's degree in mechanical engineering from Universidad Politécnica de Puerto Rico and is a licensed professional engineer in Puerto Rico and the state of Delaware.

Rivera served as officer in charge, Navy Officer Recruiting Station, San Juan, from 2009 until his discharge from active duty in 2013. He subsequently earned a law degree from University of Puerto Rico Law School.

Last year, Rivera worked as an adviser to Popular Democratic Party Sen. Miguel Pereira. His military decorations include the Navy and Marine Corps Commendation Medal, Navy and Marine Corps Achievement Medal, and various unit, campaign and service awards.

Board member José H. Román Morales earned an electrical engineering degree with a specialty in power systems and undertook graduate work in the same field at University of Puerto Rico's Mayagüez campus. He also undertook graduate work at Rensselaer Polytechnic Institute, where he studied electric-energy generation, transmission & distribution systems.

He then worked at General Electric's Power Systems Division, where he designed generators for utilities throughout the world. He then went on to design the electric infrastructure for various hotels, convention centers, residential buildings and computer centers that won Leadership in Energy & Environmental Design certification from the U.S. Green Building Council. He is also a certified energy manager



Prepa will have 60 days to provide a plan to ensure that 60% of the fossil-fuel power generated in Puerto Rico is "highly efficient." PREC would then approve the plan, ask for improvements or determine that Prepa's plan isn't realistic and then open up bidding from the private sector to build new efficient plants, with somewhere in the neighborhood of 1,000 megawatts required.



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