

**PUERTO RICO ELECTRIC POWER
AUTHORITY (PREPA) POST-
IMPLEMENTATION OF THE LUMA TRANS-
MISSION AND DISTRIBUTION CONTRACT**

OVERSIGHT HEARING

BEFORE THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

Wednesday, October 6, 2021

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**OVERSIGHT HEARING ON PUERTO RICO
ELECTRIC POWER AUTHORITY (PREPA)
POST-IMPLEMENTATION OF THE LUMA
TRANSMISSION AND DISTRIBUTION
CONTRACT**

**Wednesday, October 6, 2021
U.S. House of Representatives
Committee on Natural Resources
Washington, DC**

The Committee met, pursuant to notice, at 1:04 p.m., via Webex, Hon. Raúl M. Grijalva [Chairman of the Committee] presiding.

Present: Representatives Grijalva, Napolitano, Costa, Sablan, Porter, Leger Fernández, Stansbury, Velázquez, Soto, García, Tonko, Tlaib; Gohmert, Wittman, McClintock, Graves, Radewagen, González-Colón, Tiffany, Moore, and Obernolte.

Also present: Representatives Espaillat, Ocasio-Cortez, Price, and Torres.

The CHAIRMAN. The Committee on Natural Resources will come to order. This oversight hearing is on the Puerto Rico Electric Power Authority post-implementation of the LUMA transmission and distribution contract, and the Committee is meeting today to receive testimony on the status of Puerto Rico's electrical infrastructure, including the privatization of the transmission and distribution system from PREPA to LUMA Energy, and the transition toward renewable energy.

Under Committee Rule 4(f), any oral opening statements at hearings are limited to the Chair and the Ranking Minority Member or their designees. This will allow us to hear from our witnesses sooner and help Members keep to their schedules.

I therefore ask unanimous consent that all other Members' opening statements be made part of the hearing record if they are submitted to the Clerk by 5 p.m. today or at the close of the hearing, whichever comes first.

Hearing no objection, so ordered.

Without objection, the Chair will also declare a recess, subject to the call of the Chair.

Also, without objection, Representative Torres, Representative Ocasio-Cortez, Representative Price, and Representative Espaillat are authorized to question the witnesses at today's hearing.

As described in the notice, statements, documents, and motions must be submitted to the electronic repository at HNRCdocs@mail.house.gov.

Additionally, please note that as with in-person meetings, Members are responsible for their own microphones. As with our in-person meetings, Members can be muted by staff only to avoid inadvertent background noise.

Finally, Members or witnesses experiencing technical problems should inform Committee staff immediately.

The Chair now recognizes, for her opening statement, the Vice Ranking Minority Member for Insular Affairs.

So recognized.

**STATEMENT OF THE HON. JENNIFFER GONZÁLEZ-COLÓN, A
RESIDENT COMMISSIONER IN CONGRESS FROM THE TERRITORY OF PUERTO RICO**

Miss GONZÁLEZ-COLÓN. I want to thank you, Chairman and Ranking Member Westerman, for the opportunity to have this very timely hearing.

I also want to recognize the witnesses who have responsibly come before us.

The hearing is timely because over the summer Puerto Rico has faced extreme instability of the power supply, with widespread prolonged power interruptions, due to a near collapse of the generation fleet in the hands of PREPA, the state-owned utility. As of last Sunday morning, only 38 percent of its nominally operational base load, and 42 percent of its peaker and backup capacities were available for dispatch.

That means that, all together, running even with the backups, it is still nearly 1,000 megawatts short of estimated daily load. That is also almost the full capacity of the two base load private generators. So, we see that the whole system will barely meet demand and any spike could bring it down. Plus that is being done by keeping our units on-line, and that are known to require repair, or are past due, way past due, for maintenance, creating a time bomb. Because of that, this is why much of the old installed capacity is now unavailable.

This also creates a paradox that, since it increases costs on both PREPA and the distribution operator, LUMA, it means consumers see the bills go up when they are not even getting electricity. Four years after Hurricane Maria, 1 year since the obligation of over \$10 billion in different funds, Federal funds, to build back a better grid, 3 months later, after a much-proclaimed contract of transmission and distribution, this has ended people's patience.

How long is this going to happen? LUMA and PREPA must answer that question, explain what is happening, what is going to be done in the short term and long term, and how are they preparing to build back better.

The people of Puerto Rico want their power to be on today—I am not just thinking about the future—and the cost to stop rising, and accountability for when it happens, not just great plans about the future, or the greatest plans that they are going to be installing. We want to see service improve now. And if anyone is objectively failing, then take the needed steps provided under the law and contracts to rectify it.

It worries me if this hearing, instead, revolves around an ideological position of blaming privatization itself, that it will be based on a demand that contracts must be reverted just because they should be, and that we should take the FEMA rebuilding funds and forbid them from being used for anything other than someone's favorite alternative. I think we should be more precise on this.

We support having community renewables and distributed generation microgrids in Puerto Rico's recovery; these are tools for resiliency and self-reliance itself. But, again, the renewable energy plan in Puerto Rico is already very ambitious, with goals of 50 percent by 2030 and 100 percent by 2050. And now we just have 2 percent of renewables. If that is achievable under the current parameters, great; if not, we need to discuss now what are the necessary steps to get there.

In order for that to happen, we must now, first and foremost, provide the people of Puerto Rico an energy supply that is affordable for the consumer; reliable for both base loads and peak loads for the private sector, as well—our manufacturing industry is important, and they cannot operate just with batteries; resilient in case of a natural disaster or infrastructure mishap; and compliant with all environmental and public health requirements. We cannot do that if we exclude upfront resources like LNG, which I support, or if we rush plant closings that are already programmed to happen before the new grid is really ready.

I hope this hearing provides better guidance to all of us in addressing this issue, in answering what is going to happen when the people of Puerto Rico are going to have power, and when PREPA is going to submit to FEMA all the necessary documents and actually get the Federal funds that are available from last year.

With that, Mr. Chairman, I thank you, and I yield back.

[The prepared statement of Miss González-Colón follows:]

PREPARED STATEMENT OF THE HON. JENNIFFER GONZÁLEZ-COLÓN, A RESIDENT
COMMISSIONER IN CONGRESS FROM THE TERRITORY OF PUERTO RICO

I want to thank you, Chairman Grijalva (and Ranking Member Westerman), for the opportunity to have this very timely hearing. I also want to recognize the witnesses who have responsibly come before us.

The hearing is timely because over the summer Puerto Rico has faced extreme instability of the power supply, with widespread prolonged power interruptions, due to a near collapse of the generation fleet in hands of PREPA, the state-owned utility. As of last Sunday morning, only 38% of its nominally operational base load and 42% of its peaker and backup capacities were available for dispatch.

That means, all together running even the backups, it is still nearly 1,000 megawatts short of estimated daily load. That is also almost the full capacity of the two base load private generators. So, the whole system would barely meet demand, and any spike could bring it down. Plus, that is being done by keeping units on-line that are known to require repair or are way past overdue for maintenance, creating a time bomb. Because THAT is why much of the old installed capacity is now unavailable.

This also creates the paradox that, since it increases costs on both PREPA and distribution operator LUMA, it means consumers see the bills go UP, when they're NOT getting electricity. Four years after Hurricane Maria, 1 year since the obligation of over \$10 billion in different funds to build a better grid, 3 months after a much-proclaimed contract for Transmission and Distribution, this has ended the people's patience.

How long is this going to go on? LUMA and PREPA must answer that; explain what is happening; what is going to be done short term and long term; how are they preparing to build back better.

The people of Puerto Rico want their power to be on, today, the cost to stop rising, and accountability for what happens. Not just great plans, we want to see service improve. If anyone is objectively failing, then take the needed steps provided under the law and contracts to rectify that.

It worries me if this hearing, instead, revolves around an ideological position of blaming privatization itself. That it will be based on a demand that contracts must be reverted just because they should be, and that we should take the FEMA

rebuilding funds and forbid them from being used for anything other than our favored alternative.

We support having community renewables and distributed generation microgrids in Puerto Rico's recovery: these are tools for resiliency and self-reliance. Puerto Rico's renewable energy plan is already ambitious with goals of 50% by 2030 and 100% by 2050. If that is achievable under current parameters, great; if not, we must discuss what are the necessary steps to get there.

However, we must first and foremost provide the people of Puerto Rico NOW an energy supply that is affordable to the consumer, reliable for both base loads and peak loads, resilient in case of natural disasters or infrastructure mishap, and compliant with all environmental and public health requirements. We cannot do that if we exclude up front resources like LNG or if we rush plant closings that are already programmed to happen before the new grid is really ready.

I hope this hearing provides better guidance to all of us in addressing these issues. Thank you, I yield back.

The CHAIRMAN. The gentlelady yields back, thank you.

And the Full Committee Ranking Member, Mr. Westerman, do you wish to make a statement?

[No response.]

The CHAIRMAN. Hearing no response, let me say my opening statement.

STATEMENT OF THE HON. RAÚL M. GRIJALVA, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARIZONA

The CHAIRMAN. The Committee is meeting today to hear from a number of witnesses regarding the status of the privatization of management of Puerto Rico's electric grid from the Puerto Rico Electric Power Authority, PREPA, to LUMA Energy.

We will also hear about the authority's plans to spend an estimated \$9.5 billion of Federal cost-share for the reconstruction of the island's electrical infrastructure, which was destroyed by Hurricanes Irma and Maria almost exactly 4 years ago.

This hearing is indeed timely, as Representative González-Colón mentioned and said in her statement, in part because of the recent changes that have taken place at PREPA, with the resignation of the PREPA Chair, as well as the utility's Executive Director.

It is more likely the case than not that these changes in PREPA's leadership were due to a recent spate of widespread power outages on the island that has understandably left the island residents very angry, especially since the LUMA contract was supposed to improve service.

Why are so many power outages happening now, and what are their causes? Are they because of lack of maintenance at the power generation plants or because of poor vegetation control and lack of proper consultation with PREPA by LUMA on proper load management? Do these and other problems stem from the shortage of experienced workers at LUMA who know the system and can anticipate where the hiccups are likely to occur?

We intend to receive answers to these and other questions. I am hopeful that many of them can be answered today from our diverse group of witnesses, including a representative of the Puerto Rico Energy Bureau, which is tasked by law with overseeing operations at PREPA, including the LUMA-managed transmission and distribution system.

The last time this Committee held a hearing on PREPA, I said that my primary goal was to determine the best way to guarantee that PREPA can be rebuilt so that it withstands future extreme weather, provides the people of Puerto Rico with reliable and inexpensive power, and prevents the displacement of its workers. In many ways, this remains my chief concern as we convene this hearing today.

When I visited Puerto Rico 2 years ago and met with PREPA officials, I raised with them a number of concerns I had at the time about their privatization plan. These concerns, which I also heard from various stakeholders on the island, were that their plan lacked transparency and stringent contract monitoring and oversight requirements, which are needed to instill confidence in the process. In many ways, I am still hearing those same concerns expressed today.

Finally, I must repeat my many calls, as echoed by the PREPA Integrated Resource Plan and Act 17, for renewables to quickly become the energy source for the island, so that the cost of producing power, and its reliability, can be reduced for the ratepayers.

Even though Puerto Rico Act 17 calls for PREPA to increase its renewable portfolio by 40 percent by 2025, 60 percent by 2040, and 100 percent by 2050, ongoing foot-dragging in the implementation of the law, as well as the IRP, make it unlikely that these renewable energy goals will be met.

PREPA and LUMA need to move more aggressively to comply with the IRP and Puerto Rico law. If they don't, the people of Puerto Rico are going to pay the price.

I regret that LUMA backed out at the last minute from our oversight hearing on the coal power plant on the island a few months ago. Attending today was the right decision.

I want to thank our witnesses for being here. I look forward to hearing the testimony and I yield back.

[The prepared statement of Mr. Grijalva follows:]

PREPARED STATEMENT OF THE HON. RAÚL M. GRIJALVA, CHAIR, COMMITTEE ON
NATURAL RESOURCES

The Committee is meeting today to hear from a number of witnesses regarding the status of the privatization of management of Puerto Rico's electric grid from the Puerto Rico Electric Power Authority, or PREPA, to LUMA Energy. We will also hear about the authority's plans to spend the estimated \$9.5 billion of the Federal cost-share for the reconstruction of the island's electrical infrastructure which was destroyed by Hurricanes Irma and Maria almost exactly 4 years ago.

This hearing is indeed timely in part because of recent changes that have taken place at PREPA, with the resignation of the PREPA Board Chair as well as the utility's Executive Director.

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overseeing operations at PREPA including the LUMA-managed transmission and distribution system.

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PREPA and LUMA need to move more aggressively to comply with the IRP and Puerto Rico law. If they don't, the people of Puerto Rico will pay the price.

I regret that LUMA backed out at the last minute from our oversight hearing on the coal power plant on the island a few months ago. Attending today was the right decision. I want to thank all our witnesses for being here and I look forward to hearing your testimony.

The CHAIRMAN. Let me now turn to our witnesses. Before I introduce each witness, let me remind the witnesses that, under our Committee Rules, they must limit their oral statements to 5 minutes, but their entire statement will appear in the hearing record.

When you begin, the timer will begin, and it will turn orange when you have 1 minute remaining. I recommend that Members and witnesses joining remotely use the grid view, so that they may pin the timer to their screen.

After your testimony is complete, please remember to mute yourself to avoid any inadvertent background noise. I will also allow the entire panel to testify before questioning begins.

The Chair now recognizes our first witness, Mr. Fernando Gil, President of the Puerto Rico Electric Power Authority, PREPA, Governing Board.

Mr. Gil, welcome, and the time is yours.

You are recognized, Mr. Gil for 5 minutes, sir.

STATEMENT OF FERNANDO GIL, PRESIDENT, PUERTO RICO ELECTRIC POWER AUTHORITY (PREPA) GOVERNING BOARD, SAN JUAN, PUERTO RICO

Mr. GIL. Thank you. Good afternoon, Chairman Grijalva, Ranking Member Westerman, and members of the Committee, and to our Resident Commissioner, Congresswoman González. Thank you for the opportunity to appear before you today to discuss the status of the ongoing transformation of the Puerto Rico Electric Power Authority and Puerto Rico electric grid.

My name is Fernando Gil, and I am recently appointed Chairman of PREPA Governing Board, alongside engineer Josué Colón

Ortiz, who was appointed Executive Director on September 29, 2020.

PREPA continues to face difficult challenges. Nonetheless, it is undergoing a fundamental transformation, as required by Puerto Rico law, conducting the most ambitious program to procure renewable resources currently being pursued anywhere in the United States.

At the same time, PREPA has transitioned to its management agent, LUMA, the responsibility for operation and maintenance of its transmission and distribution systems, in accordance with the mandates of Act 17. We are making changes intended to improve our performance. And among these are senior-level management changes, power plants needs assessments, and asset management strategies, among others.

The recent transition of PREPA's transmission and distribution system to LUMA was complex. It required the transfer of a large number of employees from PREPA to LUMA, and the cutover of billing systems and call centers.

LUMA took over the transmission and distribution system, along with the generation dispatch, on June 1, according to plan. Unfortunately, there have been system problems since the transfer. Among these were substation fires, caused by failure of outmoded equipment, and other customer outages that were not related to the transition.

I should stress that no PREPA employee who was in good standing as of June 1 was terminated because of the transition. All PREPA employees whose functions were being transferred to LUMA under the agreement were either given the opportunity to move to LUMA or to stay in agencies in the Government of Puerto Rico.

Prior to the transition, PREPA had 5,321 employees. As of June 8, LUMA recruited around 1,190 PREPA employees, and currently PREPA staff is 1,260.

PREPA's generating fleet is old, outmoded, inefficient, and expensive to run. Under PREPA's Integrated Resource Plan, most of the fleet will be retired over the next 10 years as we transition to renewable generation and energy storage, per public policy mandate.

PREPA suffered a large number of generating facilities outages in late August and through September. They had a variety of causes, but many had to do with the advanced age of our fleet. PREPA's base load units are 25 years old, and the rest average over 40 years old. PREPA's ability to expend funds on maintenance and upgrades has been constrained by the debt restructuring process, as Title III of PROMESA, liquidity challenges, and the need to address damages resulting from hurricanes and earthquakes. The execution of maintenance and repair work has also been affected by the measures required in response to the COVID-19 pandemic.

The most significant outage involved a generating station on August 22. A transmission line fault led to voltage fluctuations that affected generating facilities in the south, including Costa Sur. Those fluctuations forced Costa Sur Unit 6 off-line and damaged a steam turbine rotor. Repairs will take several months. Costa Sur

Unit 5 suffered a rupture in its boiler and was taken out of service on September 13 for repairs. Welding work to repair a subsequent steam line failure was completed earlier this week.

The Palo Seco Generating Station has experienced several events. Unit 3 suffered boiler ruptures on August 31 and September 6, and was limited over the September 25–26 weekend, due to the malfunction of the cooling tower system. This unit tripped again on September 27, due to a broken economizer. The Unit 3 repairs have been completed. Palo Seco Unit 4 was off-line on September 11 and 12 because of water chemistry issues, and was again off-line on September 28 because of a turbine lubricating oil leak. These units should be repaired and back in service by the end of this week.

PREPA's Aguirre Station has suffered a variety of failures. Recently, Unit 1 tripped off-line, due to a blockage in the cooling water intake system, and Unit 2 was limited, due to the same event as well as by issues with a regulator valve.

In 2019, PREPA installed combustion turbines at Palo Seco that were briefly operated under a temporary emergency waiver granted by the Environmental Quality Board following the January 2020 earthquakes. Unfortunately, PREPA could not run those turbines last month to make up for the loss of other units, because it awaits a clearance from the Environmental Protection Agency, and we can't stress enough the need for the EPA to act soon on this.

Fortunately, during late August and September, private operating facilities were generally available.

As required by FEMA and Puerto Rico's Central Office for Recovery, Reconstruction, and Resiliency or COR3, PREPA and LUMA have developed an updated 10-year plan for the repairs and renewal of Puerto Rico's electric grid, as well as damaged generation, dams, and irrigation facilities. The first version of this plan was submitted on December 7, 2020. Updated versions will be submitted every 3 years.

Over the past 5 months, PREPA has advanced a large number of projects through the early stages of FEMA and COR3 review and through the required Puerto Rico Energy Bureau approval process. With these approvals in hand, PREPA and LUMA can begin architectural and engineering design work that will feed into project approval submittals.

Of the roughly \$10.7 billion that has been obligated under FEMA programs, PREPA is responsible for generation, dams, hydro-electric, and irrigation projects involving investment of around \$2.5 billion. Around \$900 million has been identified for generation projects, and nearly \$1.6 billion for dams, hydro, and irrigation projects.

The CHAIRMAN. Mr. Gil, you are a minute over. If you could, wrap up, if you don't mind, sir.

Mr. GIL. Sure, I will, sir.

PREPA continues to work with LUMA to implement the agreement, and to support efforts to transform the Puerto Rico transmission and distribution grid. We have the goal of making our system more reliable, cleaner, affordable, and more customer-centric.

PREPA is taking a proactive approach to address and resolve the problems that have led to an unacceptable number of outages due to its generation fleet. We are making progress in securing Federal funding to support—

The CHAIRMAN. Thank you, Mr. Gil.

Mr. GIL. Sorry.

The CHAIRMAN. No, that is OK. As I said earlier, I hope the witnesses understand 5 minutes. We have a lot of witnesses, and we have Members that have questions. So, anything within your power to try to limit that would be great.

[The prepared statement of Mr. Gil follows:]

PREPARED STATEMENT OF FERNANDO GIL ENSENAT, CHAIRMAN, GOVERNING BOARD
AND JOSUÉ A. COLÓN ORTIZ, EXECUTIVE DIRECTOR
PUERTO RICO ELECTRIC POWER AUTHORITY

Chairman Grijalva, Ranking Member Westerman, and members of the Committee, thank you for the opportunity to appear before you today to discuss the current status and ongoing transformation of the Puerto Rico Electric Power Authority and Puerto Rico's electric grid. My name Fernando Gil Ensenat. I am the Chairman of PREPA's Governing Board. With me is Josué A. Colón Ortiz; he was appointed PREPA's Executive Director on September 29, 2021.

PREPA appreciates the interest the Committee has expressed in progress PREPA has made in implementing the June 22, 2020 Operation and Maintenance Agreement with LUMA Energy. I will address this subject first, and will also address questions I understand the Committee may have concerning the status of former PREPA employees following the LUMA transition. I will then describe recent generation outages and what PREPA has done and is doing in response. I will offer a brief update as to where we stand in taking advantage of federal funding for the restoration of facilities for which PREPA remains responsible. I will also offer an update on PREPA's progress in advancing its renewable energy generation and energy storage procurement program.

I want to start by acknowledging that PREPA continues to face difficult challenges on a number of fronts. These include a PROMESA Title III restructuring process that has been underway since July 2017, and serious liquidity constraints. Added to this have been several severe weather events, including Hurricanes Irma and Maria in 2017, which destroyed or severely damaged much of PREPA's transmission and distribution system. Then came earthquakes in December 2019 and January 2020, which did serious damage to the Costa Sur Generating Station, one of PREPA's largest, and led to limits on the amount of liquified natural gas that can be stored at the EcoEléctrica facility for use in generating power. The COVID-19 pandemic has affected and continues to affect every aspect of life in Puerto Rico, including the pace at which repairs on the T&D system and PREPA generating facilities can be completed. Most recently, failures at a number of PREPA's generating facilities have required rotating load shedding to balance available electricity supply with demand.

To complicate these challenges, the Authority is undergoing a fundamental transformation, as required by Puerto Rico law. It is conducting perhaps the most ambitious program to procure renewable generation and energy storage resources currently being pursued anywhere in the U.S. At the same time, PREPA has transitioned responsibility for operation and maintenance of its transmission and distribution system, in what was the largest transaction of its type ever completed in the United States. PREPA is evaluating a similar transition of responsibility for the operation, maintenance and decommissioning of its generating fleet to third parties. The PREPA organization has become much smaller than it was even a year ago, and significant changes in senior management have been made in the past 10 days.

PREPA's handling of these challenges has been uneven. We have made mistakes. We are making changes intended to benefit from lessons we have learned and to improve our performance. Among these are very recent senior level changes, including my appointment as Chairman of PREPA's Governing Board and Josué Colón's appointment as Executive Director. The purpose of these changes, and others we will be making, is to position PREPA to achieve the goals established in recent laws and the approved Integrated Resource Plan.

We take our obligations to the people of Puerto Rico seriously, and are working to address the many challenges I have just described. We remain committed to the transformation of PREPA and Puerto Rico's electric system to one that is reliable, resilient, efficient, clean and customer-centric.

Status of the LUMA Transition

The recent transition of the transmission and distribution system to LUMA was complex. The transition required the transfer on June 1, 2021 of large numbers of employees from PREPA to LUMA, the cutover of billing systems, and the transfer of responsibility for call centers, all effective on June 1. At the same time, PREPA and LUMA had to manage the handover of responsibility for dispatching generation, responding to outages and performing day-to-day transmission and distribution system maintenance. The transfer of responsibility for running the system took place as scheduled on June 1, and the preparations PREPA and LUMA had made leading up to that date were equal to the challenge. LUMA succeeded in taking over the T&D system and the dispatch of generation on June 1, as scheduled, with minimal disruption. There were some significant problems following the transfer. Among these were a substation fire, which was caused by the failure of outmoded equipment, not anything specifically related to the transition. And there were customer outages that were unrelated to the transition.

Since the June 1 transition, PREPA and LUMA have been adjusting to their new roles, with PREPA now solely responsible for the operation and maintenance of its generating assets and LUMA responsible for the operation and maintenance of the T&D system and generation dispatch. Our organizations are committed to the transformation of Puerto Rico's electric sector.

I should stress that no PREPA employee who was in good standing as of June 1 was terminated as a result of the transition. All PREPA employees whose functions were being transferred to LUMA under the O&M Agreement were either given the opportunity to move to LUMA, at salaries comparable to their pre-existing salaries, or to take positions with Puerto Rico government agencies. Just prior to the June 1 transition, PREPA had 5,321 employees. As of June 8, LUMA had recruited 1,190 PREPA employees. Currently, PREPA has 1,260 active employees.

Recent Generation Outages

PREPA's fleet of generating facilities is old, outmoded, inefficient and expensive to run. PREPA's approved Integrated Resource Plan envisions that most of these units will be retired over the next 10 years, in favor of new generation from renewable sources as well as energy storage. The IRP also envisions the retirement of the AES generating facility, as required by Puerto Rico law, by year-end 2027.

PREPA suffered a large number of generating facility outages in late August and through September. They had a variety of causes, but many had to do with the advanced age of PREPA's generating fleet. PREPA's newest baseload units are 25 years old, and the rest average over 40 years old. PREPA's ability to expend funds on maintenance and upgrades has been constrained by the Title III process, liquidity challenges and the need to address damage resulting from hurricanes and earthquakes. The execution of maintenance and repair work has also been affected by measures required in response to the COVID-19 pandemic. Over the past 45 days, several of PREPA's largest steam generating units were forced out of service. This, along with some faults in the transmission system and the limited availability of backup generation, meant that there was less generation available than was required to meet demand during peak periods. To address the generation resource shortfall, LUMA was required to shed load to allocate the limited electricity supply.

The most significant generating unit outage involves the Costa Sur generating station. On August 22, a transmission line fault led to loss of two of the San Juan generating units and transmission system fluctuations that affected generating facilities in the south, including Costa Sur. Those fluctuations led to vibrations which eventually forced Costa Sur Unit 6 offline and damaged the steam turbine rotor. Repairs of that equipment will take several months. In the meantime, a spare turbine rotor has been sent for repair in St. Louis. That repair should be completed and Unit 6 back in service within 4 months, subject to inspection results. Costa Sur Unit 5 suffered a rupture in its boiler and was taken out of service on September 13 for repairs. A break in the main steam line prevented the unit's return to service as scheduled on September 14. Welding work to repair that break was completed at the beginning of this week. Costa Sur's difficulties are particularly frustrating for PREPA, since following the January 2020 earthquakes PREPA invested around \$40 million to repair and restore both Costa Sur units and to eliminate a maintenance backlog. These repairs were effective, but the Costa Sur plant, being an old plant, remains vulnerable to age-related failures.

The Palo Seco Generating Station experienced several events beginning August 31 that have limited its available capacity. Unit 3 suffered boiler ruptures on August 31, and again on September 6. Unit 3 was limited on the September 25–26 weekend due to sargassum clogging of cooling water systems. This unit tripped again on September 27 due to a broken economizer. Repairs have been completed. Palo Seco Unit 4 was offline from September 11 to September 12 because of water chemistry issues, and was again offline on September 28 because of a turbine lubricating oil leak which burned a cable tray and affected a pump's hydrogen seal and a motor turning gear. This unit should be repaired and back in service by this weekend.

PREPA's Aguirre station, another large and old generating facility, has suffered a variety of boiler and pump failures in recent weeks. Most recently Unit 1 tripped offline because its cooling water intake system became clogged by sargassum and Unit 2 was limited due to the same event, as well by issues with a regulator valve.

In 2019, PREPA installed combustion turbines at its Palo Seco generating station to provide backup generation and system support. Those turbines were operated under temporary emergency waivers from the Environmental Quality Board after the January 2020 earthquakes. PREPA would have liked to have run those turbines last month to make up for the loss of generation at other facilities, but could not because it needs a clearance from the Environmental Protection Agency. So the new Palo Seco combustion turbines have not been available during the recent generation outage events. PREPA continues to seek the required air permits, and is ready to commission the combustion turbines once it has the necessary EPA authorization. We need EPA to act soon.

Fortunately, during late August and September, when several of PREPA's generating units were forced offline, the AES generating facility was consistently available. During that time the EcoEléctrica combined cycle generating facility was also generally available.

PREPA and its contractors are working hard to repair PREPA's damaged generating facilities. And PREPA is actively in the market seeking commitments from developers to add a large amount of renewable generation and energy storage to replace its aging generating fleet, as I will discuss.

Status of Federal Funding of Generation, Dam and Hydroelectric Projects

As required by the Federal Emergency Management Agency and Puerto Rico's Central Office for Recovery, Reconstruction and Resiliency, or COR3, PREPA has developed and has since updated a 10 Year Plan for the repair and renewal of Puerto Rico's electric grid as well as damaged generation, dam and irrigation facilities with federal support. The first version of this Plan was submitted on December 7, 2020, and an updated Plan will be submitted every 3 years. On September 21, 2021, PREPA submitted a 90 Day Plan that addresses areas covered by the 10 Year Plan on which PREPA will be focusing and executing over the next 90 days. With the 10 Year Plan in place, and processes for project review and approval by the Puerto Rico Energy Bureau, COR3 and FEMA now established and well understood, PREPA is now in a position to begin to advance repair and renewal projects eligible for FEMA funding that were first identified 3 years ago, in the wake of Hurricane Maria.

Over the past 5 months PREPA has succeeded in advancing a large number of projects through the early stages of the FEMA/COR3 process. This has required the involvement of the Puerto Rico Energy Bureau, which must approve T&D and generation projects, as well as the Financial Oversight and Management Board for Puerto Rico, whose sign-off is also necessary. The process is complex, demanding and time consuming. The first projects, which were jointly submitted for approval by PREPA and LUMA, did not receive the required Energy Bureau approvals until June 8, 2021. Now with these approvals in hand, PREPA and LUMA can begin architectural and engineering design work that will feed into project approval submittals to be made to COR3 and FEMA.

With the transfer to LUMA of responsibility for Puerto Rico's transmission and distribution system, PREPA's efforts relating to FEMA federal disaster relief funding are now focused on projects involving generation, dams, hydroelectric facilities and irrigation. There are currently 41 generation, dams and hydro projects for which PREPA expects to receive FEMA funding. LUMA now has responsibility to secure from the Energy Bureau and FEMA authorizations for projects involving the transmission and distribution system. T&D system projects will absorb most of the funding that FEMA has obligated for Puerto Rico electrical infrastructure; generation projects for which PREPA remains responsible are a small portion—under 10 percent—of the total.

Of the roughly \$10.7 billion in funding that has been obligated for investments in Puerto Rico electric and related infrastructure, PREPA is now responsible for

generation, dam, hydroelectric and irrigation projects that as of today would involve investments of approximately \$2.5 billion under FEMA's 428 and 404 programs. This amount will change as engineering analyses are performed and project scopes are more clearly defined. Of this amount, approximately \$900 million has been identified for generation projects, and nearly \$1.6 billion has been identified for dams, hydro and irrigation projects. Some repairs have been completed for which PREPA has sought or will seek reimbursement through COR3 from FEMA. Early in September PREPA received Puerto Rico Energy Bureau approval to proceed with 14 of 20 projects, and the other 6 projects were approved on September 28. PREPA submitted the first group of 14 approved projects to COR3 and FEMA for the establishment of required FEMA project numbers the same day the Energy Bureau approved them.

Around 61% of all federally funded generation, dam, hydro and irrigation projects have been started in the sense that a scope of work is under development. To date PREPA has received around \$500,000 in federal reimbursements. We are in early days, so the dollar spend is low, being focused on architectural and engineering design work. The spend will ramp up as projects move from the design phase into implementation.

Before project construction can commence, PREPA must submit projects to the Energy Bureau for its approval and, having received this, then must submit a scope of work to FEMA. That scope of work has to be detailed enough to enable FEMA to evaluate the environmental and historical resource impacts of the individual project. Depending on the nature of the project, at least 30% of the project design work needs to be completed in order to provide FEMA the information it needs, and for projects that may have significant impacts, as much as 100% of the project design work may need to be completed. The process takes a great deal of time. It can be set back by delays, for example, in obtaining FOMB approvals for renewal of professional services contracts for firms assisting PREPA in complying with FEMA and COR3 requirements.

PREPA has recently submitted a request to COR3 for reimbursement of \$7.1 million for architectural and engineering work required in connection with generation and dams, hydro and irrigation projects identified for FEMA funding. Those funds should be disbursed to PREPA this week. So we are making progress, slowly, in obtaining access to the FEMA funds that have been identified for projects involving generation, dams, hydro and irrigation.

Status of PREPA's Renewable Generation/Energy Storage Procurement Process

As required by its approved Integrated Resource Plan and orders of the Energy Bureau, PREPA has embarked on one of the most ambitious efforts being undertaken anywhere in the United States to procure new renewable generation and energy storage resources. Over the next 3 years, to comply with Energy Bureau directives, PREPA will seek commitments from third party developers to permit, construct, own and operate a total of 3,750 MW of renewable energy generation resources and 1,500 MW of energy storage resources. PREPA issued a Request for Proposals for renewable generation and energy storage systems on February 22, 2021. This was Tranche 1 of 6 Tranches; in this first Tranche, as the Energy Bureau directed, PREPA sought commitments to develop at least 1,000 MW of renewable generation and to develop energy storage systems having capacity of at least 500 MW.

The response to PREPA's first RFP has been encouraging. Quantities of both renewable generation and energy storage offered were greater than the targets PREPA identified for the first Tranche. Last Thursday PREPA communicated to participants in the first Tranche PREPA's decisions as to which proposals have been selected to advance to "Phase III" of the RFP process. More than three dozen project proposals will be considered and given the opportunity to be awarded contracts in this third and final Phase. This could result in over 40 individual contracts with generation, storage and virtual power plant project developers. PREPA and its advisors will complete System Impact Studies and Facility Studies addressing the interconnection of each project to the transmission and distribution grid, and PREPA will make interconnection cost estimates based on these studies available to each project proponent. It will then invite each proponent to make its best and final price offer. PREPA expects to commence the final contract documentation process with individual project proponents in October, and expects to complete this process in November and December of this year. The Energy Bureau-mandated target is for the selected projects to commence commercial operation within 24 months of contract execution.

PREPA will issue its Tranche 2 RFP by mid-October. In this second Tranche, as the Energy Bureau has directed, PREPA will seek to procure at least 500 MW of renewable generation capacity and at least 250 MW of energy storage capacity. The remaining 4 Tranches will be issued at 6 month intervals over the next couple of years.

We are pleased with the interest we have seen among developers in responding to Puerto Rico's urgent need to add clean and reliable generating resources to the island's electric grid. PREPA is committed to making its renewable procurement process a success, and to the goal of transforming Puerto Rico's electric system to one that is reliable, resilient, environmentally sustainable and customer-centric.

Conclusion

In compliance with the applicable laws and regulations, PREPA continues to work with LUMA to implement the LUMA O&M Agreement and to support LUMA in its efforts to transform the Puerto Rico transmission and distribution grid. Our organizations share the goal of making the grid more reliable, resilient, cleaner, affordable, and more customer-centric. Our relationship is good and improving.

PREPA is doing all that it can to address and resolve the problems that have led to an unacceptable number of outages in its aged and inefficient generation fleet. Recent management changes at PREPA are intended to reinforce the Authority's commitment to turning this situation around.

PREPA is making progress in securing federal funding to support the renewal of generation and hydro assets, though the process continues to be complex and time-consuming. PREPA, the government of Puerto Rico, and all the people of the island appreciate the federal funding that will help us do this. It will make a huge difference for our people. I want to thank Members of Congress for their support for the transformation of the Puerto Rico Electric system through the federal funding mechanisms they have established.

And finally, PREPA is focused intently on advancing its procurement of new renewable and energy storage capacity as quickly as possible. Initial indications on this front are positive. More generally, PREPA remains fully committed to continuing on the path of transforming Puerto Rico's electric sector and to a future in which energy is cleanly and efficiently produced and reliably distributed to the people of Puerto Rico at reasonable cost.

Thank you for the opportunity to appear before you today.

QUESTIONS SUBMITTED FOR THE RECORD TO FERNANDO GIL-ENSEÑAT, CHAIRMAN,
GOVERNING BOARD, PUERTO RICO ELECTRIC POWER AUTHORITY

Questions Submitted by Representative Velázquez

Question 1. How is PREPA going to comply with the Renewable Portfolio Standard to achieve a minimum of 40% of renewable energy on or before 2025, if as of today Puerto Rico only generates 3% of renewable energy?

Answer. The Puerto Rico Electric Power Authority (PREPA) is proceeding as required by its approved Integrated Resource Plan and orders of the Puerto Rico Energy Bureau (PREB) to procure the quantities of renewable generation and energy storage resources required to satisfy Puerto Rico's Renewable Portfolio Standard (RPS), as established by Act 82-2010, as amended. The RPS contemplates that 40% of the energy distributed to Puerto Rico consumers be generated by renewable resources, by 2025. As I testified to the Committee on Natural Resources on October 6, 2021, to this end PREPA has embarked on one of the most ambitious efforts to procure new renewable generation and energy storage resources being undertaken anywhere in the United States.

PREPA will seek commitments from third party developers to permit, construct, own and operate a total of 3,750 MW of renewable energy generation resources and 1,500 MW of energy storage resources. This quantity is approximately equal to the amount of generation capacity currently available from PREPA. In the first of what will be six procurement Tranches, PREPA has sought commitments from third parties to develop at least 1,000 MW of renewable generation and energy storage systems having a capacity of at least 500 MW. These quantity thresholds are consistent with those set out in PREPA's approved IRP and those the Energy Bureau has determined are required to meet the 40% renewable generation requirement, by 2025.

The response to the Tranche 1 RFP has been encouraging. The renewable generation and energy storage resource capacity offered was in the aggregate greater than

the targets PREPA identified for that first Tranche. PREPA representatives are currently engaged in efforts to conclude the evaluation of more than 40 renewable generations, energy storage and virtual power plant projects, and PREPA expects to complete this process and the contracts approvals by all the external stakeholders (Puerto Rico Energy Bureau and the Financial Oversight and Management Board for Puerto Rico) by the end of this year.

By the end of this month, PREPA will issue its second Tranche RFP. In this second Tranche, as the Energy Bureau has directed, PREPA will seek to procure at least 500 MW of renewable generation capacity and at least 250 MW of energy storage capacity. PREPA intends to request Proponents to submit their Tranche 2 proposals in early January. The remaining 4 RFP Tranches will be issued at 6 month intervals over the next two years.

As of today, PREPA acquires only around 3% of the energy it distributes from renewable resources. This percentage is lower than it would have been if PREPA had been permitted to execute power purchase and operating agreements with 16 “shovel ready” renewable generation projects, representing 594 MW of capacity, which PREPA renegotiated last year. Unfortunately, although the Energy Bureau authorized PREPA to enter into those renegotiated agreements, on August 17, 2020 the Financial Oversight and Management Board for Puerto Rico notified PREPA that it had concluded that the cost of energy to be purchased under those contracts would be higher than those assumed under PREPA’s Fiscal Plan, and therefore permitted PREPA to procure only 150 MW of the nearly 600 MW of renewable generating capacity it had set out to acquire from the “shovel ready” projects.

Question 2. According to your testimony and the answer to my question, Costa Sur’s recent failure was due to issues with the transmission. Could you please provide the pertaining documentation regarding this incident and how a fault in transmission was responsible?

Answer. On August 22, 2021, a transmission line, 38,900, suffered a malfunction which led to the loss of two of the San Juan generating units (Units 5 and 6), and Units 3 and 4 of Palo Seco Steam Plant. The loss of these four units caused an automatic load shedding in the electric system. As a result of those Units being forced off-line, the transmission system experienced significant voltage fluctuations. Those fluctuations may have affected generating facilities in the south, including Costa Sur, as they attempted to compensate for voltage excursions. Although further testing and evaluations would be needed to establish this as a fact, the fluctuations could have technically led to turbine vibrations which eventually forced Costa Sur Unit 6 off-line and damaged that Unit’s steam turbine rotor.

Questions Submitted by Representative González-Colón

Question 1. Please provide us the latest generation report and the tables/report on the condition of the generating fleet.

Answer—
Latest reports follow:

CN 075-04479
Rev. 11/17



GOBIERNO DE PUERTO RICO
Autoridad de Energía Eléctrica de Puerto Rico

August 23 2021

Alejandro Castillo Meléndez
San Juan Plant Manager

Radamés J. Alvarado Bonilla
Operational Manager

STEAM UNIT 5 / UNIT 6 STEAM / CT REPORT ON AUGUST 22, 2021

Facts

1. Units was generating 330 MW in combine cycle:
 - a. Unit 5
 - i. CT 122 MW
 - ii. STG 43 MW
 - b. Unit 6
 - i. CT 123 MW
 - ii. STG 42 MW
2. At 12:25 p.m. an electrical disturbance in the transmission line system affected the voltage at San Juan Power Plant, causing steam units 5 and 6 to shut down.
3. At 12:05:04 p.m. the automatic transfer from gas to diesel was activated for both units¹
 - a. Steam Unit 5 was taken out of service at 12:25:03 pm by opening the exit switch.



Apartado 364267 San Juan, Puerto Rico 00936-4267

¹Siempre un patrón con igualdad de oportunidades en el empleo y no discriminación por razón de raza, color, sexo, edad, origen social o nacional, condición social, afiliación política, ideas políticas o religiosas, por ser cónyuge o ser pariente directo como víctima de violencia doméstica, migración, sexual o de género, por discapacidad física, intelectual o mental o víctima por condición de veteranos o por pertenencia genética.

STEAM UNIT 5/ UNIT 6 STEAM / CT REPORT ON AUGUST 22, 2021
Page 2

- b. Steam unit 6 went out of service at 12:25:05 p.m. by losing the servo control system due to voltage variation.
- c. Combustion unit 6 began to have problems with the levels of the boilers due to the firing of the steam turbine that affected the temperature of the high-pressure boiler, taking the unit out of service at 12:30 p.m. with 100 MW.
- d. Combustion Unit 5 remained in service with approximately 50 MW.
4. Combustion Unit 6 go in service at 1:46 p.m on August 22.
5. Steam unit 6 entered service at 4:17 p.m. on August 22
6. Steam unit 5 entered service at 10:26 a.m. on August 23, 2021

Reference

Alarms: Steam Unit 6 forced shutdown

Green arrow -12: 05: 02 pm began the voltage fluctuation affecting equipment of the unit.

Yellow arrow - 12:05:04 pm activates the automatic transfer of gas to diesel fuel.

Blue arrow- 12:25:05 pm forced shutdown of steam unit due to low pressure of the servo control system.

Generation Directorate Current Status of PREPA Generation Fleet								
Power Station	Unit	Capacity (MW)	Available Capacity	Condition	Person in charge of attending findings	NIM (Million)	Currents Status/ Action Plan / Comments	
PREPA's Reserve Generation Fleet								
Agua Combined Cycle	E1	50	48	Available	Eng. Harry Velazquez / Plant Manager	\$1	Unit gas path inspection 3/24, April 2022	
	E2	50	48	Available		\$1	Unit filters changed and gas path inspection scheduled for June 2022	
	E3	50	48	Available		\$1.5	Major inspection scheduled for January 2023. \$2.5M	
	E4	50	48	Available				
	E5-1	50	48	Available				
	E5-2	50	48	Not available			Condenser flooding and air in hotwells. Available with NIM \$1.8-1.9	
	E6	50	48	Not available			MPT 2.1, 2.2 failure	
	E7	50	48	Not available			MPT 2.1, 2.2 failure. Start up 2023	
	E8	50	48	Not available			\$1.7 Stand by Transformer lock, not gas path inspection and spare rotor \$1.7M	
	E9	50	48	Not available			MPT 2.1, 2.2 failure. Start up tests	
Total Agua CC	500	477	46.3%			\$6.3	Availability	
DAGUADO	D1	21	18	Available	Eng. José Vilagran / HG Head Division / Eng. José Figuera / Operation Manager			
	D2	21	18	Not available		\$8	Unit requires major turbine repair and a complete generator assembly. Estimate \$8 million	
	D3	21	18	Available				
AGUIRRE	A1	21	18	Available				
	A2	21	18	Available				
	A3	21	18	Available				
PRLO SEC2	MFA 1	21	18	Not available			\$0.1 Environmental as per unit. Contract awarded to perform environmental acceptance tests. Waiting for EPA approval of emission testing	
	MFA 2	21	18	Not available			\$0.1 Environmental as per unit. Contract awarded to perform environmental acceptance tests. Waiting for EPA approval of emission testing	
	MFA 3	21	18	Not available			\$0.1 Environmental as per unit. Contract awarded to perform environmental acceptance tests. Waiting for EPA approval of emission testing	
COPIA SUR	C1	21	18	Not available			\$2 Unit mechanical test failed and fixed with restriction. Phasing tests schedule for October 17	
	C2	21	18	Not available			\$2 Turbocompressor replacement	
JONS	J1	21	18	Available			\$1 Due for major inspection (August 2022) and speed reduction gearbox replacement	
	J2	21	18	Not available			\$1 Alignment process. Starting testing scheduled for October 8	
YARUCOA	Y1	21	18	Not available			\$1 Alignment process. Starting testing scheduled for October 22	
	Y2	21	18	Not available			\$1 Turbine regulator repair work expected to arrive on October 15, 2022	
VEGA BLA	V1	21	18	Not available			\$1 Turbocompressor major failure	
	V2	21	18	Not available			\$1.7	
Total 18 Peaking Units	384	337	87.8%				\$13.7	Availability

Generation Directorate Current Status of PREPA Generation Fleet								
Power Station	Unit	Capacity (MW)	Available Capacity	Condition	Person in charge of attending findings	NIM (Million)	Currents Status/ Action Plan / Comments	
MAYAGUEZ	M1	27.5	25.5	Not available	Eng. José Vilagran / HG Head Division / Eng. José Figuera / Operation Manager			
	M2	27.5	25.5	Not available		\$1.7 Gas generator and power turbine (GT) in critical condition. Repair cost estimate \$1.7 million for both units		
	M3	27.5	25.5	Available				
	M4	27.5	25.5	Available				
	M5	27.5	25.5	Available				
	M6	27.5	25.5	Available				
Total Mayaguez	165	153	92.1%				\$1.7	Availability
ZAMBALACHE	Z1	81.5	79	Not available	Eng. Hermilio Arango / Plant Manager		\$1.8 Unit out of service since 2011. Combustion turbine failure. Proposal \$1.8 million and six months	
	Z2	81.5	79	Available				
Total Zambalache	163	158	96.9%				\$1.8	Availability
VEDIGES	V1	3	3	Available	Eng. José Vilagran / HG Head Division / Eng. Walter Cordeiro / Plant Manager			
	V2	3	3	Not available			Throttle/starting control system issues	
Candela	C1	2	2	Available				
	C2	2	2	Available				
Total Vediges and Candela	8	8	100%				\$0	Availability
Total Peaking B Emergency Units	1,433.5	708.9	49.4%				\$55	Availability

Generation Directorate Current Status of PREPA Generation Fleet								
Power Station	Unit	Capacity (MW)	Available Capacity	Condition	Person in charge of attending findings	NIM (Million)	Currents Status/ Action Plan / Comments	
HYDROELECTRICS								
Isla Negra	I1	1.5	1.5	Available	Eng. José Vilagran / HG Head Division			
	I2	1.5	1.5	Available				
	I3	1.5	1.5	Available				
	I4	1.5	1.5	Available				
	I5	1.5	1.5	Available				
	I6	1.5	1.5	Available				
	I7	1.5	1.5	Available				
	I8	1.5	1.5	Available				
	I9	1.5	1.5	Available				
	I10	1.5	1.5	Available				
Yaguajay	Y1	2.5	2.5	Available	Eng. José Vilagran / HG Head Division			
	Y2	2.5	2.5	Available				
	Y3	2.5	2.5	Available				
	Y4	2.5	2.5	Available				
	Y5	2.5	2.5	Available				
	Y6	2.5	2.5	Available				
	Y7	2.5	2.5	Available				
	Y8	2.5	2.5	Available				
	Y9	2.5	2.5	Available				
	Y10	2.5	2.5	Available				
García	G1	3.6	3.6	Available	Eng. José Vilagran / HG Head Division			
	G2	3.6	3.6	Available				
	G3	3.6	3.6	Available				
	G4	3.6	3.6	Available				
	G5	3.6	3.6	Available				
	G6	3.6	3.6	Available				
	G7	3.6	3.6	Available				
	G8	3.6	3.6	Available				
	G9	3.6	3.6	Available				
	G10	3.6	3.6	Available				
Candelón	C1	3	3	Available	Eng. José Vilagran / HG Head Division			
	C2	3	3	Available				
	C3	3	3	Available				
	C4	3	3	Available				
	C5	3	3	Available				
	C6	3	3	Available				
	C7	3	3	Available				
	C8	3	3	Available				
	C9	3	3	Available				
	C10	3	3	Available				
Pueblo	P1	5.8	5.8	Available	Eng. José Vilagran / HG Head Division			
	P2	5.8	5.8	Available				
	P3	5.8	5.8	Available				
	P4	5.8	5.8	Available				
	P5	5.8	5.8	Available				
	P6	5.8	5.8	Available				
	P7	5.8	5.8	Available				
	P8	5.8	5.8	Available				
	P9	5.8	5.8	Available				
	P10	5.8	5.8	Available				
Total Hydro	302.8	293.3	96.9%				\$14	Availability



Generation Outage Schedule
Update on 11 October 2021

UNITS ONLINE AS OF 1 OCT 2021				
UNIT	ACTUAL CAP (MW)	MAX CAP (MW)	COMMENTS	
SICC 5	200	220	100% Natural Gas	
SICC 6	200	220	100% Natural Gas	
SI 9	96	100		
PS 3	216	216		
PS 4	130	216		
CS 5	410	410	100% Natural Gas	
AG 1	375	400		
ECCO CT 1	165	165		
ECCO CT 2	165	165		
ECCO STD	200	200		
AES 1	227	227		
AES 2	227	227		

UNITS SCHEDULED FOR OUTAGE				
UNIT	DATE OUT	DATE IN	DESCRIPTION	RETURN CAP (MW)
SI 7	2-Oct-21	17-Oct-21	Low Vacuum Crossover Join	75
AG 2	11-Oct-21	17-Oct-21	Feed Water Control Valve	400
PS 4	1-Dec-21	15-Jan-22	Air Heater Repair and Environmental Outage	180
ECCO CT 1	6-Nov-21	12-Nov-21	Annual Maintenance	165
ECCO CT 2	12-Nov-21	19-Nov-21	NG Terminal Inspection & NG Metering Station	165
ECCO STD	6-Nov-21	22-Nov-21	Annual Maintenance	200
CS 6	22-Aug-21	15-Jan-22	LP Failure Turbine Repair	410
AES 1	1-Jan-22	15-Jan-22	Major Maintenance	227

UNITS OUT OF SERVICE				
UNIT	ACTUAL CAP (MW)	MAX CAP (MW)	COMMENTS	
SI 8	70	100	Limited Use Unit under EPA MAATS Rules (Available after MPT Repair)	
SI 10		100	Major Repair	
PS 1		85	Generator Repair	
PS 2		85	Generator Repair	
CS 3		85	Decommissioning Process	
CS 4		85	Decommissioning Process	

OTHER UNITS	
AGCC	5 Units at 50 MW each
CAMBALACHE	2 Units at 75 MW each
MAYAGÜEZ	2 Units at 55 MW each & 1 Unit at 27.5 MW
PEAERS	6 Units at 20 MW each
HYDRO	20 MW at Maximum Load Hours (4 hours)
RENEWABLE	Dispatched production depending on month



RENEWABLES				
UNIDADES	ACTUAL CAP (MW)	MAX CAP (MW)	COMMENTS	
Solar				
AES Ilumina	20	20		
Windmar	2.1	2.1		
San Fermín	20	20		
Hudson	10	10		
Orlando	45	45		
Cofre Laurel	10	10		
Huamaca Elvira	40	40		
Total	147.1	147.1		
Viento				
Patagon	75	75		
Punta Lima	0	26	Out of Services after Hurricane Idalia.	
Total	75	101		
LowRIE				
Esperanza	2.4	2.4		
Los Baños	2.4	2.4		
Total	4.8	4.8		

Question 2. Those reports are expected to show [t]here are units both in PREPA and in the private generators that should have long already been undergoing maintenance or upgrade but remain active so as not to lose capacity.

(a) Can you identify critical units that absolutely must go offline soon for maintenance?

Answer. The two units of EcoEléctrica generating facility in Peñuelas need to be taken off-line for maintenance from November 6 until November 30, 2021, and Unit 2 of the AES generating facility in Guayama needs to be taken off-line in January 2022 for approximately four to six weeks.

(b) How will that leave us in reserve capacity?

Answer. The information that PREPA has available indicates that the projected average of reserve capacity that PREPA will have available with the EcoEléctrica and AES units off-line is approximately 300 MW. Provision of official information regarding the reserve capacity that will be available for that period is the responsibility of LUMA Energy's Dispatch Control Center.

Question 3. What do you answer to those who say we need not rebuild or convert to new fuels any of the existing fleet, but just fix it to keep running until the renewables come on-line?

Answer. PREPA anticipates that, even under optimal conditions, the build-out of renewable generation and energy storage is likely to take the better part of 10 years. As this build-out is being pursued, Puerto Rico will need reliable conventional

generation to meet system demand. Accordingly, PREPA believes that it must take a balanced approach that includes the repair of many of the generating facilities that are currently unavailable, since their capacity will continue to be required as renewable generation and energy storage is developed, constructed and placed into service over the next several years.

In addition to repairing and improving the maintenance of existing units, PREPA believes it will be necessary to add some new natural gas-fired generating facilities, including a baseload unit in the San Juan area, to provide more reliable capacity and to support system operations, as renewable generation and storage are being added. Experience in other jurisdictions, including California, Texas, Spain and Germany, shows that some amount of fast-response rotating generating equipment, generally in the form of natural gas-fired combustion turbines, must continue to be available even in systems with large amounts of renewable generation and storage to maintain system voltage within acceptable levels, to compensate for the unavailability of solar generation during certain times and to enable the system to respond to weather events.

Question 4. How fast could the “Virtual Power Plants” be established, from PREPA’s perspective? Are they in the plans?

Answer. PREPA has sought to procure virtual power plant resources in its Tranche 1 RFP, and VPPs are anticipated to be among the resources that will be added quickly once PREPA is authorized to enter into contracts with VPP Proponents. Three Proponents have come forward in Tranche 1 with VPP project proposals. These Proponents have indicated that some of the Participant resources they would aggregate into a VPP are already interconnected with the Transmission and Distribution System, and they have suggested that they could make some capacity available from VPP resources within one year of their execution of a Grid Services Agreement.

A major challenge for PREPA and LUMA Energy, the operator of the T&D System, is that the Energy Management System that is currently employed in the operation of the T&D System was not designed to interface with VPPs, and until that system is replaced the ability to dispatch and benefit from VPP resources is very limited. The replacement of the Energy Management System is planned and will be carried out by LUMA Energy. This project will be supported by funding to be supplied by the Federal Emergency Management Agency. PREPA understands that this replacement is unlikely to be completed before 2023.

Question 5. Palo Seco Station’s three so-called “portable” 23 MW generators—They were installed with a waiver for certain parameters for emission control during the Maria emergency. They cannot be fully used due to still to this date remaining non-compliant. What is the status of progress?

Answer. PREPA is awaiting a required clearance from the Environmental Protection Agency (EPA) to perform the unit’s operational water injection system commissioning. This is required in the operation of the emissions control systems in the Palo Seco portable combustion turbine generators. PREPA will commission the combustion turbines once it has the requested EPA authorization in hand. PREPA expects that such authorization could be in place by the end of October 2021.

Question 6. Workforce matters: How many enterprise critical positions are vacant?

Answer. There are approximately 122 vacant critical positions. In addition to the aforementioned vacant positions, the Generation Directorate has some employees in critical positions that are going to retire in the near future.

Question 7. Future Generation:

(a) What is the status of the Renewables/Storage RFPs?

Answer. As I have testified, the Renewable Generation and Energy Storage RFP process is well underway. See my response to Rep. Velázquez’s first question set forth above.

On September 30, 2021, PREPA communicated to Tranche 1 participants its selection of proposals that will advance to “Phase III” of the RFP process, in which contract documentation will be completed and final costs of interconnection determined. More than three dozen project proposals are being considered in this third Phase. PREPA and LUMA will complete System Impact Studies and Facility Studies addressing the interconnection of each generation and storage project to the Transmission and Distribution System, and PREPA will make interconnection cost estimates, based on these studies, available to each project proponent.

(b) What is the status of proposals for privatizing the legacy generation fleet?

Answer. This process is being managed by the Public-Private Partnerships Authority (the “P3A”), with the technical advice of PREPA. We understand that several prospective respondents have performed due diligence reviews and site visits focused on individual generating facilities. We respectfully recommend that the Committee request any additional information concerning this process from P3A, which is in charge of the procurement process.

(i) Are proponents likely to take on plants nearing end-of-life?

Answer. PREPA understands that the operation and maintenance agreement that would govern the relationship among PREPA, P3A and the party or parties who contract to take on responsibility for the operation, maintenance and retirement of legacy generating facilities will require the successful bidders to assume the obligation to decommission and dismantle the existing plants. The sites at which the legacy generating facilities are located are likely to be valuable as potential locations of new generating and energy storage facilities or as industrial facilities, and therefore there will be substantial incentives to make these sites ready for redevelopment. We respectfully recommend that the Committee request any additional information from P3A, which is in charge of the procurement process.

(ii) When are the older units scheduled for replacement?

Answer. PREPA’s approved IRP assumes that the legacy baseload units fired by heavy fuel oil will be retired over the next ten years.

Question 8. Permitting of LNG units:

(a) What’s the status of the PREB/PREPA discussion on the installation of LNG units that were not in the prior PREB-approved resources plan?

Answer. See response immediately below.

(b) Does the renewables plan in any way forbid any further installation of combustion units transitionally?

Answer. The Integrated Resource Plan, under which PREPA is currently pursuing procurement of new renewable generation and energy storage facilities, significantly limits PREPA’s ability to pursue the installation of new fossil-fired combustion turbine generating facilities. But it does not entirely preclude the installation of such facilities. PREPA continues to evaluate the possibility of installing some new fossil-fueled generating facilities to support the ongoing transition to a future state in which renewable generation and energy storage dominate the resource mix supporting electric power supply in Puerto Rico.

In its August 24, 2020 order in Case No. CEPR-AP-2018-0001, approving in part and rejecting in part PREPA’s IRP, the PREB declined to authorize the inclusion of new gas-fired combustion turbine generating units in the Modified Action Plan, pending further study. The PREB also declined to approve the development of additional liquefied natural gas infrastructure that would support the delivery of natural gas to certain generating units. The PREB authorized PREPA to commence preliminary design, economic analysis, engineering and site selection work on a new fossil fuel-fired combined cycle generating facility at Palo Seco or at another location in the San Juan area. The purpose of such a facility would be to serve as a dependable source of generating capacity, energy and ancillary services, permitting the retirement of several existing, obsolete oil-fired generating units by 2025.

In January 2021, PREPA reported to the PREB that it is performing planning and preliminary engineering studies which evaluate the construction of a new dual-fuel combined cycle generating facility in the San Juan area having a capacity of 300–400 MW. It also reported that in October 2020, the Federal Emergency Management Agency had obligated \$13,507,500 of mitigation funds under Section 404 of the Stafford Act, for the planning and design of a new combined cycle facility in the San Juan area. If this new combined cycle facility were to be built, it would be 100% federally funded. The Energy Bureau is monitoring PREPA’s development of preliminary studies for this new combined-cycle generating facility in Case No. NEPR-MI-2021-0003 and has required PREPA to file quarterly reports on the status of those studies.

The PREB has directed PREPA to evaluate the replacement of only a small amount of the gas combustion turbine generating capacity that is installed, though generally unavailable, around the Island. At the same time, FEMA has approved Section 404 hazard mitigation funding in the amount of \$280.7 million to cover the costs of replacing 11 Frame 5 combustion turbine units to minimize the risk that Puerto Rico’s recovery could be hampered by the unavailability of generating units

capable of responding in an emergency. Moreover, the availability of fossil fuel-fired generating facilities would mitigate risks of increasing grid instability that could result as rotating generating equipment is replaced by inverter-based generation and energy storage. PREPA is continuing to engage with the PREB on the question of how much gas-fired combustion turbine generating capacity should be included in PREPA's going-forward resource procurement plans.

The CHAIRMAN. Let me now turn to the Chairman of the Puerto Rico Energy Bureau, Mr. Edison Avilés-Deliz.
Sir, you are recognized. Thank you.

STATEMENT OF EDISON AVILÉS-DELIZ, CHAIRMAN, PUERTO RICO ENERGY BUREAU (PREB), SAN JUAN, PUERTO RICO

Mr. AVILÉS-DELIZ. Good afternoon, Chairman Grijalva, Ranking Member Westerman, Congresswoman González-Colón, and distinguished members of the Committee. My name is Edison Avilés-Deliz, I am the Chair of the Puerto Rico Energy Bureau. On behalf of the PREB, I appreciate the opportunity afforded to present our views regarding the implementation of the LUMA transmission and distribution contract.

The PREB was created in 2014 by Act 57, serving as a key component for the full and transparent implementation of the Act's energy reform goals. The PREB has a mandate to ensure that electric service is safe, reliable, and affordable.

The T&D system in Puerto Rico is now operated and maintained by LUMA under the operation and maintenance agreement entered by PREPA, the P3, and LUMA, in accordance with Act 120. The T&D agreement is implemented with the oversight from the P3 authority, PREPA, and the PREB. Act 120 safeguards the powers of the Energy Bureau regarding energy matters, as well as its authority to regulate, supervise, and ensure compliance with the public energy policy of Puerto Rico, including, but not limited to, matters related to the T&D agreement.

Since the last time the PREB testified before this Committee, the PREB has undertaken an extensive review of the plan proposed by LUMA, the PREB's responsibilities to ensure these plans improve the delivery of electric service and increase the resilience of the electric infrastructure against future weather events.

PREB is working to ensure the use of the Federal reconstruction dollars assigned to Puerto Rico is aligned with the requirements and targets imposed by our energy public policies. During the front end transition period of the T&D agreement, the PREB extensively evaluates LUMA's plan that included opportunity for public participation and wide dissemination through the PREB's YouTube channel. This evaluation resulted in approval that carries specific conditions that LUMA needs to satisfy at determined intervals within LUMA's contract period.

LUMA is a certified electric service company within the PREB's regulatory jurisdiction. During the interim service period, the electric utility maintenance and operation are shared by LUMA and PREPA, where LUMA is responsible for planning, operating, and maintaining the T&D system, and PREPA is in charge of the operation and maintenance of the generation system.

PREB has strong oversight of LUMA and the electric industry in Puerto Rico, as demonstrated by the extensive range of proceedings currently underway. The PREB is working over 25 proceedings that address the significant components of LUMA's responsibilities. The responsibilities in operating includes improving system reliability, achieving sustainability, and preserving the cost effectiveness of the electric services.

The Federal funding made available to Puerto Rico in response to the disasters arising from Hurricane Maria is a major enabler of the rebuild of the electric grid, in which a system that meets industry standard is modern and flexible, and able to integrate renewable generation with future resilience required to better withstand a future weather event.

The PREB has already evaluated and approved around 250 electric system reconstruction projects that amount to \$8.29 billion. Any permanent work proposed for the electric infrastructure needs approval from the PREB before it can move forward to the receiving of the Federal funding.

The PREB is the entity vested in Puerto Rico with ensuring that the investment made on the electric infrastructure is consistent with the energy public policy. In addition, to ensure that adequate controls are in place for the efficient use of public funds, the PREB is currently evaluating LUMA's procurement processes.

I am pleased to represent before you here today the public interest of the people through the legal mandate that has been bestowed upon the PREB, to provide strong leadership and oversight of the recovery and revitalization of the Puerto Rico electric grid. I look forward to your questions and remain committed to continue building up the working relationship with the Committee for the benefit of Puerto Rico. Thank you.

[The prepared statement of Mr. Avilés-Deliz follows:]

PREPARED STATEMENT OF EDISON AVILÉS-DELIZ, P.E., ESQ., CHAIR,
PUERTO RICO ENERGY BUREAU

I. INTRODUCTION

Chairman Grijalva, Ranking Member Westerman, Congresswoman González-Colón, and distinguished Members of the Committee, thank you for the opportunity to appear before you today to discuss the Puerto Rico Energy and Power Authority (PREPA) Post Implementation of the LUMA Transmission and Distribution Contract.

My name is Edison Avilés-Deliz, and I am the Chair of the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("PREB").¹ The PREB is an independent, regulatory body consisting of five (5) commissioners that regulate the electric utility serving the Island and functions similarly to the Public Utilities Commissions ("PUC") found across the mainland. The Commissioners have equal voting powers. The PREB has a mandate to implement and enforce the energy public policy enacted in Puerto Rico, as well as to adopt the regulations necessary for such implementation.

Having a strong and effective regulator is crucial to the development of a stable and robust electric delivery system and the transformation of the Puerto Rico electric system. The PREB is an independent regulator that is subject to judicial review. This stability fosters an environment where long-term plans and strategies can succeed. Since the last time the PREB testified before this Committee,² the PREB has undertaken an extensive review of the plans proposed by the private

¹ Formerly known as the Puerto Rico Energy Commission.

² *The Transformation of the Puerto Rico Electric Power Authority (PREPA)*, July 23, 2020.

Transmission and Distribution System (“T&D”) Operator, LUMA,³ to ensure that these plans are conducive to improving the delivery of electric service and increasing the resilience of the electric infrastructure against future weather events by making smart use of the federal reconstruction dollars available to the Island, and ensuring that the shift toward 100% renewable generation is aligned with the targets imposed by our energy public policy.

The T&D system in Puerto Rico is now operated and maintained by LUMA with extensive oversight from the Puerto Rico Public Private Partnership Authority (“P3 Authority”), PREPA and the PREB.⁴

II. THE PREB—OVERVIEW

The PREB was created in 2014 by the *Puerto Rico Energy Transformation and RELIEF Act*⁵ serving as a key component for the full and transparent implementation of the Act’s energy reform goals. Specifically, the PREB has the responsibility to regulate, monitor and enforce the energy public policy of the Government of Puerto Rico. PREB has a mandate to ensure electric service is safe, reliable, and affordable.

A. Expertise

1. Commissioners

By statute,⁶ PREB Commissioners have diverse professional backgrounds. The current Bureau features exceptionally qualified commissioners in its ranks. Currently, three commissioners hold dual degrees in engineering and law, one commissioner is a seasoned energy, land use, and environmental attorney who serves in the National Association of Regulatory Utility Commissioners (“NARUC”) Board of Directors, and one commissioner is a licensed engineer specialized in the design of electrical power systems.

2. PREB is supported by Nationally Recognized Technical Resources

PREB relies on recognized experts in the utility regulatory field to assist its informed and grounded regulatory development. These resources include former commissioners and staff from multiple U.S. Public Utility Commissions (“PUCs”), some with first-hand experience dealing with the current arrangement found in Puerto Rico: a private operator running the T&D system for the public electric utility. The PREB is also advised by experts in the areas of energy regulatory affairs, economics, engineering, energy efficiency and resource/system/operations planning, among others. These experts also provide consulting services throughout the US and other international jurisdictions.

III. PREB’S OVERSIGHT OF THE ELECTRIC INFRASTRUCTURE RECONSTRUCTION, OPERATION AND MAINTENANCE

Puerto Rico suffers from an inherently deficient electric system, a condition that has been exacerbated after the impact of hurricanes Irma and Maria. In particular, the planning, design, and operation of an isolated island-based electricity system imposes on PREPA, and Puerto Rico as a whole, significant challenges regarding power system stability and reliability. Act 120-2018⁷ establishes the legal framework for the transformation of the electric power system in Puerto Rico.⁸ It empowers PREPA to sell its assets related to electric power generation and transfer or delegate any of its operations, functions, or services.⁹ However, any agreement arising from Act 120-2018 shall be entered into under the legal and administrative framework established in Act 29-2009¹⁰ which regulates Public-Private Partnerships.

Act 120-2018 safeguards the powers of the Energy Bureau regarding energy matters, as well as its authority to regulate, supervise, and ensure compliance with

³ LUMA Energy, LLC and LUMA Energy ServCo, LLC (jointly “LUMA”).

⁴ LUMA Energy, LLC is a certified electric service company that operates under the jurisdiction of the PREB, Certification Number: NEPR-CT-2020-0008. LUMA Energy ServCo, LLC is a certified electric service company that operates under the jurisdiction of the PREB, Certification Number: NEPR-CT-2020-0007.

⁵ Act 57-2014, as amended.

⁶ Section 6.6 of Act 57-2014, as amended.

⁷ Known as the “Puerto Rico Electric Power System Transformation Act”, as amended (“Act 120-2018”).

⁸ See generally, *Statements of Motives*, Act-120-2018, pp 3–5.

⁹ *Id.*

¹⁰ Known as “Public-Private Partnership Act”, as amended (“Act 29-2009”).

the public energy policy of Puerto Rico. In other words, regarding any agreement entered pursuant to Act 120-2018, the Energy Bureau retains its powers, responsibilities, and duties to establish and implement the regulatory actions necessary to guarantee the capacity, reliability, security, efficiency, and reasonableness of the system rates.

After a comprehensive competitive process, the P3 Authority selected a third-party operator for the PREPA Transmission and Distribution System (“T&D System”). On June 22, 2020, PREPA, P3 Authority, LUMA Energy, LLC¹¹ as ManagementCo, and LUMA Energy ServCo, LLC¹² as ServCo entered into an Operation and Maintenance Agreement (“T&D OMA”) under which LUMA will manage the T&D System. It is worth mentioning that under the T&D OMA, LUMA, in coordination with PREPA, the P3 Authority and the COR3, manages federal recovery funds intended to reconstruct the electric system and improving its resiliency. It is expected that the comprehensive O&M Services provided by LUMA will benefit PREPA by (i) transforming the T&D System into a modern, sustainable, reliable, efficient, cost-effective, and resilient electric system consistent with prudent utility practices to increase electric service quality; (ii) enabling delivery of low-cost electricity to ratepayers of Puerto Rico; (iii) increasing T&D System resiliency and reliability; (iv) deploying new technologies; and (v) implementing industry best practices and operational excellence through managerial continuity and long-term planning.¹³ Therefore, the contractual accountability of LUMA under the T&D OMA and its independent regulatory oversight by the PREB are critical to ensure that performance incentives align with the public interest.

A. Transmission and Distribution System Operation and Maintenance Agreement (“T&D OMA”)—Front-End-Transition

During the Front-End-Transition period of the T&D OMA, the PREB conducted extensive evaluations, that included opportunities for public participation¹⁴ of key LUMA’s utility plans. These evaluations resulted on approvals that carry specific conditions that LUMA needs to satisfy at determined intervals during LUMA’s contracted period. PREB evaluations have included:

1. LUMA’s Initial Budgets¹⁵

PREB approved with conditions LUMA’s budgets for fiscal year 2022. Approval conditions include:

- LUMA shall maintain detailed accounting of annual expenses for FY 2022 and FY 2023 and account for the use of funds within the budget for that time-frame. LUMA is to explain annually any differences between account expenses and approved budgets, and request approval for cost recovery of any uncollected funds.
- LUMA shall provide quarterly reports to the Energy Bureau detailing Initial Budget spending amounts, broken out by spending initiative, and detailing any differences from the approved Initial Budget. These reports should also include detail allowing the Energy Bureau to assess funding, withdrawals and outstanding balances in the Operating Budget, the Capital Budget, and the Generation Budget Accounts outlined in the T&D OMA.
- LUMA shall submit to the Energy Bureau, on a quarterly basis, summary reports outlining federal funding activity. These summary reports shall include aggregated information showing the cumulative amount of federal funding applied for by LUMA and/or PREPA, broken out by the source of such funding, the incremental amount of federal funding applied for in the reporting quarter, and both the cumulative and quarterly amount of federal funding received.

¹¹ See In re: Request for Certification LUMA Energy, LLC, Case No. NEPR-CT-2020-0008.

¹² See In re: Request for Certification LUMA Energy ServCo, LLC, Case No. NEPR-CT-2020-0007.

¹³ See *Partnership Committee Report, Puerto Rico Public-Private Partnership for the Electric Power Transmission and Distribution System*, dated May 15, 2020 (“Report”), p. 27, included as Exhibit 1 to *Puerto Rico Public-Private Partnership’s Authority’s Request for Issuance of Certificate of Energy Compliance and Request for Confidential Treatment of Documents Submitted to PREB*, dated May 18, 2020, *In re Certificate of Energy Compliance*, Case No.: NEPR-AP-2020-0002.

¹⁴ The PREB sought public input through written commentary and public hearings. The public hearings are archived in the PREB’s YouTube channel. <https://www.youtube.com/c/NegociadodeEnerg%C3%ADaenvido/videos>.

¹⁵ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0004>.

- LUMA shall provide annual reports on the implementation of improved efficiencies and quantification of resulting savings.
- Not later than April 1, 2022, LUMA shall submit to the Energy Bureau the Fiscal Year 2023 proposed budgets following the annual budget examination process delineated in the 2017 Rate Order.
- Not later than August 1, 2023, LUMA shall file a formal rate review for rates effective July 1, 2024, utilizing the most recent historic test year in accordance with the requirements set in the 2017 Rate Order. During these proceedings LUMA must demonstrate and quantify the projected operational efficiencies claimed in its petition for Initial Budgets approval; these efficiencies are expected to favorably impact customer rates.

2. LUMA's System Operation Principles ("SOP")¹⁶

PREB approved with conditions LUMA's SOP. Approval conditions include:

- On or before thirty (30) days from the notification of the SOP's Approval Resolution, LUMA shall file with the Energy Bureau a detailed updated timeline for the completion of any other procedure, protocol, manual or document necessary for the operation of the system in accordance with prudent industry practices, standards, and local laws and regulations, including but not limited to the draft procedures filed on May 19, 2021. The timeline shall be provided in a Gantt Chart format with detailed information, including but not limited to, the party responsible for each task (i.e., name and position of LUMA personnel and/or consultants), any precursor tasks or events, and the estimated date for the completion of preparation and finalization of drafts. The total timeline shall not exceed five (5) months.¹⁷
- On or before thirty (30) days from the notification of the SOP's Approval Resolution, LUMA shall file with the Energy Bureau enhancements to the Energy Dispatch principles included in SOP 5.1 and 5.2 that shall fully incorporate capabilities found in Distributed Energy Resources (DERs) into system planning and operations.
- In response to LUMA's request for Clarifications and/or Reconsideration, PREB ordered LUMA to file with the Energy Bureau final versions of its Load Forecasting Procedures that include the methodologies used to incorporate power meter load data, load management, load forecast, DER adoption models, weather normalization and peak allocation.
- Starting on July 5, 2021, LUMA shall file with the Energy Bureau a series of monthly progress reports on the status of the implementation of the timeline required on the conditions imposed in the SOP's Approval Resolution.
- The Energy Bureau will hold periodic compliance hearings to monitor the progress toward compliance with the conditions hereby established. LUMA and the relevant personnel and consultants shall appear before the Energy Bureau fully prepared to answer the questions that the Energy Bureau Commissioner and staff may have.

3. LUMA's System Remediation Plan ("SRP")¹⁸

PREB approved with conditions LUMA's SRP. Approval conditions include the requirement that reports be submitted quarterly, not later than thirty (30) days after the close of the reporting quarter, comprising the following:

- Actual spending amounts, broken down by spending initiative/portfolio, and reflecting in detail any differences from the System Remediation Plan.
- A detailed timeline per portfolio with sufficient detail to allow the Energy Bureau to assess project status for System Remediation Plan capital expenditures and operational initiatives.
- Any capital expenditure or operational initiatives that are behind schedule, compared to the initial System Remediation Plan timeframe and a detailed

¹⁶ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0001>.

¹⁷ LUMA submitted a request for the Energy Bureau to reconsider four (4) of the five (5) conditions the Energy Bureau established for the approval of LUMA's SOP. With regard to this condition, the Energy Bureau deferred its determination of whether the Gantt Chart complies with Condition No. 1 of the May 31 Resolution until after the September 17, 2021 Compliance Hearing.

¹⁸ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0019>.

explanation as to the cause of the delay and the corrective actions implemented to prevent further delays, as applicable.

- Periodic compliance hearings are to take place to monitor the status of these conditions.

4. Utility Performance Incentive Mechanisms¹⁹

PREB is currently developing the framework for the performance incentive mechanisms to be applied to the electric utility. The PREB is also establishing the performance targets that will apply to LUMA to determine incentives²⁰ during the contract period where payments²¹ are permitted to enhance the T&D Operator's yearly fees during the service period. This incentivizes the Operator to improve compliance with performance requirements, and fines²² can incentivize the Operator to improve compliance with performance requirements. Fines will be paid directly by the T&D Operator and not passed to customers.

B. Transmission and Distribution System Operation and Maintenance Agreement ("T&D OMA")—Interim Service Period²³

The electric utility maintenance and operations are currently shared by LUMA and PREPA.²⁴ LUMA is in charge of operating and maintaining the electric transmission and distribution system. The LUMA implementation team also includes Innovative Emergency Management, Inc. (North Carolina) ("IEM") as a prime subcontractor. IEM offers comprehensive emergency management and disaster recovery services, including obtaining, managing, and retaining federal funds, and implementing disaster recovery programs funded through government sources. PREPA is still in charge of maintaining and operating the generation fleet.

LUMA has responsibility for long-term plans and strategies to expand and upgrade the Island's grid, proposals for resilience buildup of the electric infrastructure, and management of federal recovery funding. Emphasis is being placed on rebuilding the electric system to meet current national codes and standards and to integrate electric industry best practices to facilitate Mutual Aid efforts with other U.S. utilities during emergency response events. It is important to highlight that even though system plans may have existed or may still exist for the electric grid in Puerto Rico, all T&D system planning and operations are now the responsibility of the T&D Operator, who is subject to the full oversight of the PREB. The PREB is to ensure that LUMA, as the T&D Operator, will implement well-studied long-term strategies to improve grid reliability that assures federal recovery funding is effectively and efficiently invested to build up the resilience of the Island's electric network system.

1. LUMA is subject to PREB's oversight

LUMA is a certified electric service company within the PREB's regulatory jurisdiction. For regulatory purposes, LUMA, as agent of PREPA, stands in PREPA's shoes for all aspects of electric transmission and distribution. The arrangement of the T&D OMA places a private operator to manage PREPA's electric grid. This operator is the single entity charged with orchestrating the long-term plans and strategies for the electric T&D system.

2. PREB's oversight efforts²⁵ of LUMA's T&D O&M functions

The PREB's strong oversight of LUMA in fulfilling its responsibility to guide and oversee the statutory transformation of the electric industry in Puerto Rico, is demonstrated by the extensive range of proceedings summarized below. The PREB is working more than 25 dockets that address the significant components of LUMA's

¹⁹ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0007>.

²⁰ <https://energia.pr.gov/en/dockets/?docket=nepr-ap-2020-0025>.

²¹ See Section 7.1 (c) and Annexes VII, IX and X of the Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement, <https://www.p3.pr.gov/wp-content/uploads/2020/06/executed-consolidated-om-agreement-td.pdf>.

²² *Id.* Section 7.6 (a)(ii).

²³ As a result of PREPA not having exited Title III, LUMA is operating under the Supplemental Agreement of the T&D OMA since June 1, 2021. Supplemental Agreement and O&M Agreement shall automatically terminate if Service Commencement Date does not occur within 18 months after the Supplemental Agreement Effective Date, unless extended prior to termination upon mutual agreement of the Parties and upon request by the P3 Authority. (SA 7.1).

²⁴ The Puerto Rico Electric Power Authority is a certified electric service company that operates under the jurisdiction of the PREB, Certification Number: CEPR-CT-2016-0018.

²⁵ See Attachment on page 13 for a list PREB open proceedings providing oversight to the LUMA/PREPA arrangement.

responsibilities as system operator, in particular, with respect to the transformational goals of system reliability, sustainability and cost effectiveness. The transparency of these proceedings is of paramount importance to the PREB. PREB's YouTube channel streams live and then archives these proceedings for public access. Most of these hearings/workshops are live streamed in Spanish/English.

The PREB provides extensive opportunity for public input in its proceedings through public hearings and the opportunity for written comment. Utility filings are carefully reviewed by the PREB and its consultants before the PREB decides.

By way of example, the original Initial Budgets filing was found to be incomplete by the PREB and additional material was requested. The filing was subjected to a three-day technical conference, in which PREB Commissioners and the PREB's consultant questioned LUMA extensively with respect to its filing and LUMA provided additional supporting material. Numerous reporting requirements for LUMA going forward were incorporated in the PREB's approval. The entire record of a proceeding is taken into account by the PREB in making its decision.

C. FEMA PA DR-4339-PR²⁶ Project Evaluation and Progression Status—PREB

FEMA Public Assistance (“PA”) Permanent Work Stafford Act Section 428 (disaster-related repair/restoration/replacement) has made available to PREPA up to \$9.4599bn²⁷ that when combined with Stafford Act Section 406 (mitigation activities) and Stafford Section 404 (state hazard mitigation program) funding are destined to increase the resiliency of the electric grid against future weather events. PREB highlights that the fatalities experienced during Hurricane Maria (2017) were mainly associated with the loss of medical services resulting from the lack of electricity.²⁸

1. Infrastructure sought for upgrades consistent with increasing resiliency and improving emergency readiness follows:
 - a. T&D Lines
 - i. Transmission Centers
 - ii. Distribution Poles
 - iii. Transformers
 - iv. Undergrounding
 - b. Generation Facilities
 - c. Substations
 - d. Cleanup Hydroelectric Generation Dams
 - e. IT Infrastructure—System Operations
 - f. DER Integration for Resilience
2. PREB's evaluation of permanent work of the electric infrastructure

Any permanent work proposed for the electric infrastructure needs approval from the PREB before it can move to the recipient of the FEMA DR-4339-PR grant, COR3, for further commitment. The PREB is the entity vested in Puerto Rico with ensuring that investments made on the electric infrastructure are consistent with the enacted energy public policy.²⁹

²⁶ <https://www.fema.gov/disaster/4339>.

²⁷ Actual FEMA funding available to PREPA under DR-4339-PR amounts to \$9.459B after deducting private insurance payments and 10% state matching requirement. Federal Emergency Management Agency (FEMA), Puerto Rico Hurricane Maria (DR-4339-PR).

²⁸ <https://www.npr.org/2019/02/21/696769824/problems-with-health-care-contributed-to-hurricane-maria-death-toll-in-puerto-ri>.

²⁹ Act 17-2019.

Table 1
PREB's Approvals of Electric Infrastructure Permanent Work through
September 30, 2021

PREB's Approvals of Electric Infrastructure Permanent Work		
Approval Date	Projects	Cost (bn)
June 8, 2021	65 projects including T&D rebuilds for Culebra, Vieques, generation improvements for Aguirre, Costa Sur, Cambalache and hydroelectric facilities.	\$1.240
August 25, 2021	140 projects including rebuilds of transmission and distribution facilities.	\$1.789
September 9, 2021	14 projects including rebuilds of hydroelectric plants and Palo Seco facilities.	\$1.376
September 24, 2021	30 projects including rebuilds of the fiber optic network to support the hardened operations of the system, T&D facilities, and street lighting.	\$3.885
Current Overall Rebuild Cost:		\$8.29

D. Pending LUMA/PREPA Transition Matters

1. PREPA's Reorganization [T&D OMA, 4.5(q)]

PREPA is a corporation created by virtue of Act 83 on 1941, as amended. In its current form, Act 83 defines PREPA's faculties and powers in section 5 of said Act. The aforementioned Section was amended by Act 17-2019 to include, among other powers, the capacity to, with prior approval from PREB, divide and separate into one or more subsidiaries: the generation, transmission, and distribution functions of PREPA.³⁰

PREPA's Reorganization proposal is due to the Financial Oversight and Management Board for Puerto Rico ("FOMB") on September 30, 2021.³¹

PREPA's reorganization into GridCo, GenCo, and HoldCo requires approval from the PREB.³²

2. GridCo-GenCo Purchase Power Operating Agreement (PPOA) [T&D OMA, Exhibit H]

- A power purchase and operating agreement between GridCo and GenCo requires PREPA to corporately reorganize itself.
- PPOA's require PREB's approval.³³

IV. PREB'S STRONG ENFORCEMENT CAPABILITY

The previous notable proceedings demonstrate the strong comprehensive regulatory landscape created by Act 57-2014 and Act 17-2019. More significantly, this landscape includes an enforcement infrastructure for compelling compliance with the statutory transformational measures to develop a reliable and sustainable electric system.

³⁰ Sec 5(u)(i) of Act 83 of May 2, 1941 as of May 25, 2021.

³¹ https://drive.google.com/file/d/1pHlwYrjypE80yv9x05bQ_n5RLKz-C7/view?usp=sharing.

³² Sec 5(u) of Act 83 of May 2, 1941 as of May 25, 2021.

³³ PREB's Regulation 8815, <https://energia.pr.gov/regulations-dockets/?docket=8815>.

A. PREB's Enforcement Mechanisms—Real Incentives/Real Penalties

The recently adjudicated T&D OMA provides the PREB with real teeth for enforcement. The private T&D Operator has a financial incentive³⁴ to improve system performance according to metrics approved by the PREB.³⁵ The PREB can also fine the T&D Operator for noncompliance with its regulations.³⁶ In the past, imposing fines on PREPA effectively meant fining the Puerto Rico government, thus negatively impacting the people of Puerto Rico twice. Third-party accountability means that any potential penalties imposed on the private T&D Operator will erode its fixed fee payments under the contract. Having this regulatory tool available to the PREB is nothing short of transformational.

B. Independent Office of Consumer Protection (IOCP)

The electric regulatory landscape in Puerto Rico is well supported by a strong legal framework that directs the IOCP to represent and defend, among others, the energy services customer in all matters in front of the PREB, including the IRP, rate revisions, electric utility bill disputes and disputes originating from customer dealings with electric service companies.

V. CONCLUSION

The PREB is an independent electric utility regulator authorized by statute to impose penalties on the contracted T&D Operator for regulation non-compliance that will not be borne by consumers.³⁷

In accordance with PREB's authority pursuant to the Puerto Rico Energy Public Policy Act—Act 17-2019 and Puerto Rico Electric Power Transformation Act—Act 120-2018, I am pleased to represent before you here today, the public interest of the people through the legal mandate that has been bestowed upon the PREB, to provide strong leadership and oversight of the recovery and revitalization of the Puerto Rico's electric grid, to yield a dependable, resilient, clean and efficient electrical infrastructure for our people, and to oversee Puerto Rico's transmission and distribution system operator, LUMA.

I look forward to your questions and remain committed to continue strengthening the working relationship with the Committee for the benefit of the people.

ATTACHMENT

Current PREB proceedings overseeing the LUMA/PREPA arrangement

A. PREB's Oversight of LUMA's Front-End-Transition (FET)

PREB's oversight of LUMA's front-end transition period provides transparency to the transition process by making available to the public key FET LUMA reporting.

1. NEPR-MI-2020-0008³⁸ [LUMA Monthly Status Reports for Front-End Transition Services]

The PREB made LUMA's monthly reports and FET invoices available to the public, it also requested LUMA to submit additional information concerning certain FET activities.

B. PREB's evaluation of LUMA's proposed plans for the operation and maintenance of the T&D system and use of federal funding for the reconstruction of the grid

During the course of the front-end transition period, the PREB initiated additional proceedings to evaluate LUMA's proposed plans for the T&D system.

³⁴ See Annex IX and X of the Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement.

³⁵ *Id.* Section 4.2(f).

³⁶ OMA Section 7.6 (a)(ii).

³⁷ OMA Section 7.6 (a)(ii).

³⁸ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0008>.

2. **NEPR-MI-2021-0007**³⁹ [LUMA's Liability Waiver], denied in part and approved in part with modifications by PREB

LUMA requested to be released from liability in the event of defective electric service due to released parties' control, ordinary negligence, gross negligence, or willful misconduct; PREB denied this request and granted a waiver where customer protections were expanded from LUMA's original petition.

3. **NEPR-MI-2021-0004**⁴⁰ [LUMA's Initial Budgets], approved with conditions by PREB

The PREB approved LUMA's budget for fiscal year 2022. LUMA presented to the PREB the budget for the entire utility operations that included the budget for the maintenance and operation of PREPA's generation fleet.

- Review LUMA's Budgets on a yearly basis
- Ensure LUMA's transactions are kept at arm's length from its subsidiaries—Evaluation of LUMA's Procurement Manual

4. **NEPR-MI-2021-0001**⁴¹ [LUMA's System Operation Principles], approved with conditions by PREB

The PREB is currently having LUMA submit for evaluation key procedures and methodologies that will support the improvements of how energy is dispatched across the Island and how capacity is planned.

- Follow up of established SOP's approval conditions
- Compliance hearing streamed and archived in PREB's YouTube channel on Friday, September 17, 2021.
- Oversee the establishment of Long and Short Range Transmission and Distribution Planning Analysis and Forecasts
- Proceeding addresses rolling blackout challenges

5. **NEPR-MI-2020-0019**⁴² [LUMA's System Remediation Plan], approved with conditions by PREB

The PREB is currently having LUMA submit rebuild projects moving down the pipeline to ensure alignment with reconstruction and mitigation activities that will result on efficient use of federal funding available to increase system resilience.

C. Significant Open Dockets Relating to the Oversight of LUMA

6. **NEPR-MI-2021-0002**⁴³ [10-Yr Infrastructure Plan]

PREB has provided guidance to LUMA and PREPA to avoid duplication of efforts that could have led to unnecessary expenses resulting from Front-End Transition contracting.

LUMA⁴⁴ and PREPA⁴⁵ are currently filing for PREB's evaluation proposed reconstruction projects that are to employ funding from the obligation under the FEMA DR-4339-PR⁴⁶ grant.

- Maximizes federal funding
- Ensures adherence with public energy policy
- Ensures adherence to IRP
- Projects are then forwarded by the utility to COR3, FEMA for consideration.

³⁹ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0007>.

⁴⁰ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0004>.

⁴¹ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0001>.

⁴² <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0019>.

⁴³ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0002>.

⁴⁴ LUMA formulates projects addressing the needs of the Transmission and Distribution system.

⁴⁵ PREPA currently formulates the projects addressing the needs of the Generation system.

⁴⁶ Actual FEMA funding available to PREPA under DR-4339-PR amounts to \$9.459B after deducting private insurance payments and 10% state matching requirement. Federal Emergency Management Agency (FEMA), *Puerto Rico Hurricane Maria (DR-4339-PR)*, <https://www.fema.gov/disaster/4339>. In addition to the Public Assistance permanent work proposals, LUMA and PREPA are also putting forward projects that fall under the Hazard Mitigation program of the Stafford Act sections 404 and 406.

7. **NEPR-AP-2020-00025**⁴⁷ [Establishment of Performance Targets for LUMA Energy ServCo, LLC]
 - Establishment of Performance Targets for LUMA’s incentive payments and potential penalties
 - Establishment of Framework to update LUMA’s Performance Targets
 - Development of Yearly Incentive Fee Report
8. **NEPR-MI-2019-0007**⁴⁸ [Establishment of Performance Incentive Framework for the Electric Utility]
 - Establishment of indicator/metrics to gauge the performance of the electric utility
9. **NEPR-MI-2021-0004**⁴⁹ [LUMA’s Initial Budgets]
 - Review LUMA’s Budgets on a yearly basis
 - Ensure LUMA’s transactions are kept at arm’s length from its subsidiaries— Evaluation of LUMA’s Procurement Manual
 - Monitor GenCo Shared Services Agreement
10. **NEPR-MI-2019-0005**⁵⁰ [Vegetation Management]
 - Review LUMA’s Vegetation Management Plan
 - LUMA has submitted a comprehensive plan consistent with the approved Initial Budgets
11. **NEPR-MI-2019-0006**⁵¹ [Emergency Response Plan (“ERP”)]
 - PREB is conducting a review of PREPA and LUMA’s ERP for potential modifications
 - Last Technical Conference was held on September 2, 2021 and LUMA was directed to provide additional information by September 17, 2021
 - Virtual Public Hearing was held on September 27, 2021 with written comments accepted until September 30, 2021
12. **NEPR-MI-2020-0017**⁵² [LUMA’s Data (Cyber) Security Plan]
 - Evaluation of LUMA’s data (cyber) security plan, includes IT/OT (LUMA’s website, payment processor, billing)
13. **NEPR-MI-2020-0018**⁵³ [LUMA’s Physical Security Plan]
 - Evaluation of LUMA’s Physical Security Plan
 - Conduct field visits to gauge current capabilities
14. **NEPR-MI-2020-0019**⁵⁴ [LUMA’s System Remediation Plan]
 - Seek to maximize opportunities to increase system resilience
 - Ensure adherence to Integrated Resource Plan (“IRP”)

⁴⁷ <https://energia.pr.gov/en/dockets/?docket=nepr-ap-2020-0025>.

⁴⁸ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0007>.

⁴⁹ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0004>.

⁵⁰ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0005>.

⁵¹ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0006>.

⁵² <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0017>.

⁵³ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0018>.

⁵⁴ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0019>.

15. **NEPR-MI-2020-0001**⁵⁵ [Quarterly Adjustments: Fuel Purchase FCA, Energy Purchase PPCA, Fuel Oil Subsidy FOS]
 - LUMA functions as PREPA’s representative before the PREB and reports on:
 - Fuel
 - Purchased Power
 - Fuel subsidies
16. **NEPR-MI-2019-0009**⁵⁶ [T&D Interconnection Regulation]
 - Regulations that seek to leverage Distributed Energy Resource (DER) interconnection and interoperability standards, e.g., IEEE-1547-2018
 - Emphasis on DER interoperability and integration to system planning and operations
17. **NEPR-MI-2019-0011**⁵⁷ [Integrated Electric Distribution Planning]
 - Development of Hosting Capacity capabilities that will facilitate Renewable Generation Interconnection
 - Integrated Planning approach where System Operator fully maximizes technical functionalities found in Distributed Energy Resources (DER)
18. **NEPR-MI-2019-0015**⁵⁸ [Energy Efficiency and Demand Response Regulation]
 - Cost effective and environmentally friendly alternative to buildup of generation
 - System resilience considerations
19. **NEPR-MI-2021-0009**⁵⁹ [Puerto Rico Test for Demand Response and Energy Efficiency]
 - Pilot plans for cost-effective and environmentally friendly alternative to buildup of generation
 - Increase system resilience and stability
20. **NEPR-MI-2021-0008**⁶⁰ [Review of LUMA’s Bill]
 - IOCP⁶¹ providing significant input on behalf of the consumer
21. **NEPR-MI-2021-0013**⁶² [Electric Vehicle (EV) Infrastructure]
 - Seeks to identify required generation and T&D investments to support wide adoption of Electric Vehicles (EV) in Puerto Rico.
22. **NEPR-MI-2020-0016**⁶³ [Optimization Proceeding—Minigrid Transmission and Distribution Investments]
 - Seeks to investigate further proposed minigrid capabilities that were included in the latest IRP.

⁵⁵ <https://energia.pr.gov/en/dockets/?docket=nerp-mi-2020-0001>.

⁵⁶ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0009>.

⁵⁷ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0011>.

⁵⁸ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2019-0015>.

⁵⁹ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0009>.

⁶⁰ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0008>.

⁶¹ The Independent Office of Consumer Protection (IOCP) of the Public Regulatory Service Board represents and defends the energy services customer in all matters in front of the PREB, including the IRP, rate revisions, electric utility bill disputes and disputes originating from customer dealings with electric service companies. It also educates, offers guidance, assists, and represents customers of energy, telecommunications, and transportation services.

⁶² <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0013>.

⁶³ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0016>.

23. **NEPR-MI-2021-0011**⁶⁴ [Regulation Renewable Portfolio Standard Compliance, Renewable Energy Credits]

- Regulation establishing compliance mechanisms with the Renewable Portfolio Standard

D. Ongoing LUMA/PREPA investigations

24. **NEPR-MI-2021-001465**⁶⁵ [PREPA Generation Maintenance and Repair Management Program—Managed Load Shed Events of August 30–31, 2021]

- Consideration of PREPA assertion that maintenance budget for generation is adequate
- Investigation of the load shedding events experienced during August 30–31, 2021.
- Adequacy of Supply implications
- Revision of **ACTUAL** PREPA Generation Maintenance Expenses
- Hearing streamed on September 3, 2021 (English/Spanish) and archived⁶⁶ in the PREB’s YouTube channel

25. **NEPR-IN-2021-0002**⁶⁷ [June 10, 2021 Monacillos Incident]

- Investigation of the outage failure experienced in Monacillos where LUMA was already in charge of the ECC (Energy Control Center).

QUESTIONS SUBMITTED FOR THE RECORD TO EDISON AVILÉS-DELIZ, P.E., ESQ.,
CHAIR, PUERTO RICO ENERGY BUREAU

Questions Submitted by Representative González-Colón

Question 1. Does PREB feel the laws ruling it provide you enough flexibility to adapt their plan approvals to changing realities on the ground, and to be able to get the end goal through different routes if necessary?

Answer. An Integrated Resources Plan (IRP) is an electric power utility’s guidebook for providing least-cost electric service over the planning horizon. Its purpose is to develop a plan for the least costly options to serve customer demand, considering other important policy objectives such as resiliency, reliability, and the goals of the utility, the government, society, and the environment.¹ Least-cost refers to the least-cost-net-present value of revenue requirements taken at present value from the present day to the end of the analysis period.² As part of the IRP process, the utility assembles data on its existing resources,³ historical customer demand⁴ and electricity loads. It uses the minimization of revenue requirements as its priority criterion, but also considers such factors as: system reliability; short and long-term risks; environmental impacts; transmission and distribution (T&D) needs and implications; financial implications on the electric service company; and the public interest.⁵

In the context of the Puerto Rico Power and Electric Authority (“PREPA”), an IRP considers all its reasonable resources to satisfy the demand for electric power services during a twenty (20) year period, including those relating to the offering of electric power, whether existing, traditional, and/or new resources, and those relating to energy demand such as energy conservation and efficiency or distributed

⁶⁴ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0011>.

⁶⁵ <https://energia.pr.gov/en/dockets/?docket=nepr-mi-2021-0014>.

⁶⁶ <https://www.youtube.com/watch?v=ECegoQtTy9E>.

⁶⁷ <https://energia.pr.gov/en/dockets/?docket=nepr-in-2021-0002>.

¹ See, in general, Resolution and Order, In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001, August 24, 2020 (“IRP Final Resolution and Order”).

² Id.

³ Id. “Resources” includes generation, distribution, transmission, energy efficiency programs, demand-response programs and customer resources like distributed generation and microgrids.

⁴ Id. “Customer Demand” in this context means the amount of electricity consumed at a given time in a utility’s electric service territory, measured in GWh.

⁵ See § 2.03(H)(2)(d) of Regulation on the Integrated Resource Plan for the Puerto Rico Electric Power Authority, April 24, 2018 (“Regulation 9021”).

resources, as well as localized energy generation by the customer.⁶ It is worth noting that an IRP shall incorporate the obligation of PREPA to comply with the laws and regulations that constrain resource selection.⁷ An IRP must be evaluated and approved by the Energy Bureau of the Puerto Rico Public Service Regulatory Board (“Energy Bureau”) and may not be eliminated or altered under any circumstances, without first carrying out a review process before the Energy Bureau.⁸

After the approval of an IRP, the Energy Bureau shall supervise and oversee compliance with it. The IRP will be reviewed and updated every three (3) years, in which case PREPA or the company responsible for the operation of the Electric System (currently LUMA⁹) will present to the Energy Bureau a proposal to modify and update the IRP. Nevertheless, provided, that there is a substantial change in the energy demand or in the set of resources necessary to meet the demand for energy, the review process may be conducted before the three (3) years period, to respond and mitigate changes in the energy demand or in the set of resources necessary to meet the demand for energy.¹⁰

PREPA’s Proposed IRP was evaluated by the Energy Bureau in an adjudicative proceeding under Case No.: CEPR-AP-2018-0001. On August 24, 2020, the Energy Bureau issued a *Final Resolution and Order*, approving in part and rejecting in part PREPA’s Proposed IRP.¹¹ Consequently, the Energy Bureau ordered the adoption of the Modified Action Plan as set forth in the IRP Final Resolution and Order (“PREPA’s Approved IRP”).¹²

Based on the foregoing, the applicable laws and regulations provide a mechanism to modify or amend PREPA’s Approved IRP at any time prior to the three (3) years revision period set forth in the Act 57-2014, provided, however, that there is a substantial change in the energy demand or in the set of resources necessary to meet the demand for energy. This modification shall be aimed to respond or mitigate the effects of the changes in the energy demand or in the set of resources necessary to meet the demand for energy. If the circumstances anticipated by the law arises, PREPA (Luma) may present to the Energy Bureau a proposal to modify the IRP. The Energy Bureau shall evaluate and approve the proposed modification based on the energy public policy and the applicable laws and regulations.

Question 2. Permitting of LNG units:

(a) What’s the status of the PREB/PREPA discussion on the installation of the LNG units that were not in the prior PRES-approved resources plan?

Answer. We clarify that the process to evaluate and approve an IRP and/or a modification thereof is adjudicative in nature. Therefore, the Energy Bureau refrains from having ex parte communications and/or discussions regarding matters related to the approval or modification of an IRP with PREPA nor any intervenor.

We further clarify that currently there are no pending procedures before the Energy Bureau for the modification of PREPA’s Approved IRP.

(b) Does the renewables plan in any way forbid any further installation of combustion units transitionally?

Answer. PREPA’s Approved IRP provides a mix of generation resources that reflects changes in Puerto Rico’s public policy, notably the obligations to substantially reduce energy supply costs and meet the revised Renewable Portfolio Standard. The Renewable Portfolio Standard is established to achieve a minimum

⁶See § 1.3 (II) of the Puerto Rico Energy Transformation and RELIEF Act, as amended (“Act 57-2014”) and § 1.08(B)(20) of Regulation 9021.

⁷Id.

⁸See § 1.9(4) of the Puerto Rico Energy Public Policy Act (“Act 17-2019”).

⁹LUMA Energy, LLC and LUMA Energy ServCo, LLC are referred to collectively as “Luma”.

¹⁰In general, a revision of an IRP should reflect changes in energy market conditions, changes in technology, environmental regulations, fuel prices, capital costs, incorporation of generation based on renewable energy sources and components in the grid to comply with the Renewable Energy Portfolio, distributed generation, energy efficiency and other factors.

¹¹See Resolution and Order, In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001, August 24, 2020 (“IRP Final Resolution and Order”).

¹²Id. Subsequently, on December 2, 2020, the Energy Bureau issued the Final Resolution on Reconsiderations through which it addressed several requests for reconsideration filed by certain intervenors. See Final Resolution on Reconsiderations, In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001, December 2, 2020.

of twenty percent (20%) by 2022, forty percent (40%) on or before 2025; sixty percent (60%) on or before 2040; and one hundred percent (100%) on or before 2050.¹³

The scheduled deployment of the Renewable Portfolio Standard (in itself) does not forbid the use of thermal generation resources. However, for the twenty (20) years planning horizon studied in the IRP process, PREPA did not justify the use of additional thermal generation resources.

It is important to note that changes in the assumptions used by PREPA for the development of the IRP; the results that can be observed from the implementation of the different phases of the Modified Action Plan (5-years Plan); as well as other relevant circumstances, could justify the need to modify the current mix of resources included in PREPA's Approved IRP. If this occurs, then PREPA (Luma) could use the mechanisms discussed in the response to Question 1 to seek modifications to the PREPA's Approved IRP.

The CHAIRMAN. Thank you very much, sir. Let me now turn to the President and Chief Executive Officer of LUMA Energy Puerto Rico, Mr. Wayne Stensby.

Sir, you are recognized.

STATEMENT OF WAYNE STENSBY, PRESIDENT AND CHIEF EXECUTIVE OFFICER, LUMA ENERGY PUERTO RICO, SAN JUAN, PUERTO RICO

Mr. STENSBY. Thank you very much, Chairman Grijalva, Ranking Member Westerman, Resident Commissioner González-Colón, and Committee members. Thank you for the opportunity to share LUMA Energy's perspective, as we stand here barely 4 months into this historic public-private partnership for the operation of the transmission and distribution system of Puerto Rico.

This partnership is, indeed, a critical step in the overall transformation of the electric system, but by no means is it the only step. When we first began this operation in June, we knew how difficult and what an important task we faced. Change is hard, and change will inevitably take time, but change is the reason that we are here today. The people of Puerto Rico have been demanding it for years.

The responsibility that comes with providing electricity to customers is a serious one, and we do not take it lightly.

As this Committee knows well, the Puerto Rico electric system is arguably the worst in the United States, and has been for a very long time, even prior to the devastating hurricanes of 2017. In order to move forward, we are focusing on creating change, change of the physical infrastructure, but also business processes, and the creation of our very own company culture.

I would like to start by stating how proud I am of the team here at LUMA. Today, we are more than 3,000 employees strong, and many of those were hired from PREPA. They embrace the change that they knew was needed. Those that did join LUMA did so under extraordinary circumstances, in many cases defying their friends, facing threats from those claiming to share their interests, and even being the targets of terrible and unspeakable acts of vandalism and intimidation. They did, however, get to work on June 1, and immediately they faced significant adversity again.

¹³See Act 82-2010, known as the Puerto Rico Energy Diversification Policy through Sustainable and Alternative Renewable Energy Act, as amended, ("Act 82-2010").

First, access to equipment, tools, fleet, and roads, as well as warehouses to restore electricity were so limited that it was only able to be remediated through a court-ordered restraining order. Within our first 2 weeks of operation, LUMA and its customers faced targeted denial of service attacks, disrupting information, and then, unfortunately, a fire at the Monacillo substation, disrupting service to approximately 800,000 customers.

Thanks to the heroic efforts of the LUMA team, nearly all of those customers were restored within 24 hours, which is an unprecedented response here in Puerto Rico.

Our team continues to grow, and today we have received more than 100,000 job applications from all across Puerto Rico: a strong endorsement of our mission. As part of our continued efforts to build a modern, world-class workforce, we have recently come to terms on a collective bargaining agreement with the International Brotherhood of Electrical Workers, or IBEW, who has recently amalgamated with one of the larger PREPA legacy unions. This represents the first newly negotiated agreement for labor at the electric utility in over a decade.

As part of our commitment to Puerto Rico, LUMA's parent companies are actively investing in economic and workforce development. The new LUMA College for Technical Training in Canóvanas represents an investment of more than \$10 million by our parent companies, and will bring in world-class training and workforce development for technical trades, all through an accredited education program. Our first class of lineworkers will be graduating from this program later this month, and we look forward to seeing the impact that this will have in our utility in the coming years.

While the transformation is in its early days, we have many reasons to be optimistic. We are seeing the impact of the changes as we implement them. For example, customers are seeing the impact of solar on the rooftops. We have increased the processing speed of this application process by nearly seven times, and we have cleared half the backlog that we inherited in June. Some of those customers have been waiting for as long as 2 years. We will be through this entire backlog in queue by the end of this year. We recently published queuing information on our website to improve the transparency of this interconnection process.

We are not just focusing our efforts on outages, but we are focusing on fixing the infrastructure, so that we can prevent the outages in the first place. Our rate of pole replacement over our first 4 months is more than twice what PREPA had historically managed, and we have reconnected and replaced a large number of substations and lines, many of which had not been operational since Hurricane Maria.

Still, there is a lot to be done. We are heavily focused on accelerating the major capital projects that we will be managing on behalf of PREPA. There are currently about 65 projects, representing nearly \$2.8 billion, that have recently been approved through initial statements of work, and are going through various stages of engineering and environmental assessments today. Many of these projects require close collaboration with PREPA as a subgrantee, as well as COR3, FEMA, and also experts from the

Department of Energy and national labs to ensure that they are compliant and are a prudent use of Federal funds.

With that, I would like to thank the Committee for its time and its dedication to this very important topic. As we continue to emphasize, LUMA is here to be a transparent, accountable partner that will deliver improved customer service, increased emergency preparedness, and a safer, more effective workforce supporting the overall economic recovery and growth of Puerto Rico. We have just begun, and we remain committed to playing our role in transforming the electric system.

[The prepared statement of Mr. Stensby follows:]

PREPARED STATEMENT OF WAYNE STENSBY, PRESIDENT & CHIEF EXECUTIVE
OFFICER, LUMA ENERGY PUERTO RICO

Thank you for the opportunity to share LUMA Energy's perspective as we stand here 4 months into the historic public-private partnership to operate the transmission and distribution system of Puerto Rico. This partnership is a critical step in the overall transformation of the electric system, but by no means is it the only one.

When we first began operations this June, we knew how difficult and important a task we face. Change is hard and it takes time. But, change is the reason we are here today—the people of Puerto Rico have been demanding it for years. The responsibility that comes with providing electricity to customers is a serious one, and we do not take it lightly. As this committee knows well, the Puerto Rico electric system is arguably the worst in the U.S., and has been for some time, even prior to the tragic hurricanes of 2017. For context, the frequency and duration of outages is more than twice the next worst performer in the U.S., customer service scores are 50% worse than the average electric utility, and OSHA safety recordable incidents were approximately 5 times the industry average. To move forward, we are focused on creating change—change of the physical infrastructure, but also of the business processes and of the company culture.

I should first state how proud we are of the team we are building. We are more than 3,000 employees strong with many of those hired from PREPA (Puerto Rico Electric Power Authority), embracing the change they knew would be needed. Those that joined LUMA did so under extraordinary circumstances—in some cases defying their friends, facing threats from those claiming to share their interests, and even being the targets of terrible acts of vandalism and intimidation. They got to work on June 1st and immediately faced significant adversity. First, access to certain equipment, tools, and roads needed to restore power were so limited that it could only be remedied through a restraining order. Within our first 2 weeks of operation, LUMA and its customers suffered, a targeted distributed denial of service attack, disrupting access to information. Then, a fire at the Monacillo substation, a central node in the electric system, disrupted power to approximately 800,000 customers. Thanks to the heroic efforts of our team, nearly all of those customers were restored in 24 hours—an unprecedented response time.

Our team continues to grow, and we have received more than 100,000 job applications from across Puerto Rico—a strong endorsement of our mission. As part of our continued efforts to build a modern, world class workforce, we recently came to terms on a collective bargaining agreement with the IBEW (International Brotherhood of Electrical Workers), who recently amalgamated with one of the larger local unions at the utility. This represents the first newly negotiated agreement for labor at the electric utility in over a decade.

LUMA is not here for the short term. We are here to modernize the electric transmission and distribution system, to perform based on thoughtful data-based, long-term planning, and to execute these plans which have been developed by engineers, subject to the approval and oversight of the corresponding government entities in accordance with law and policy.

As part of our commitment to Puerto Rico, LUMA's parent companies are actively investing in economic and workforce development. The new LUMA College for Technical Training in Canóvanas represents an investment of more than \$10 million dollars by LUMA's parent companies and will bring world class training and development for the technical trades, all provided through an accredited education program. Our first class of lineworkers will be graduating from this program later this

month, and we are looking forward to seeing the impact this can have in the coming years.

While this transformation is in its early days, we do have reason to be optimistic about the future. We are starting to see the impact of the changes we implement. For example, for customers seeking to put solar on their rooftops, we have increased the processing speed of this application process by nearly 7 times, and cleared nearly half of the backlog we inherited. Some of those customers had been waiting as long as 2 years. We aim to clear this queue entirely by the end of this year and have begun publishing the connection queue information on our website to improve the transparency of the process. Our operational efforts are focused not just on restoring outages, but fixing infrastructure so we can prevent the outages in the first place. Our rate of pole replacement has nearly doubled, and we've re-connected or replaced a number of substations and lines—some of which had not been operational since Hurricane Maria.

Still, there is a lot of work to be done. We have been heavily focused on accelerating the major capital projects to be executed under the various federal grant programs, which we will manage on PREPA's behalf. There are currently about 65 projects representing nearly \$2.8 billion dollars of work that have received approved initial Statements of Work and are going through various stages of engineering and environmental assessments today. An additional \$3.7 billion of projects has been vetted by PREB, and the initial Statements of Work have been submitted to FEMA. These investments are all tied to disaster recovery linked to Hurricanes Irma and Maria from 2017, and are critical to making the electric infrastructure sustainable and resilient. For these efforts, we are working collaboratively with PREPA as the subgrantee, as well as COR3 (Central Office for Recovery, Reconstruction, and Resiliency), FEMA, and experts from the Department of Energy and the national labs, to ensure that these programs are both compliant and are a prudent and effective use of federal funds. This is a unique opportunity to build back better, and doing so efficiently will be critical. Recognizing that the annual construction efforts work will be multiples above today's activity, we have also signed a Project Labor Agreement with the IBEW. This PLA ensures that the workers on the electric system will be safe, fairly compensated, and well trained. This PLA also enables access to high quality, craft skilled labor, mitigating the risk of delays to the electric infrastructure rebuild that Puerto Rico so desperately needs.

We thank this committee for its time and dedication to this important topic. As we continue to emphasize, LUMA is here to be a transparent, accountable partner that will deliver improved customer service, increased emergency preparedness, and a safer, more effective workforce, supporting the overall economic recovery and growth of the island. We have just begun and we remain committed to playing our critical role in transforming the electrical system in Puerto Rico.

QUESTIONS SUBMITTED FOR THE RECORD TO WAYNE STENSBY, PRESIDENT & CHIEF EXECUTIVE OFFICER, LUMA ENERGY PUERTO RICO

Questions Submitted by Representative Porter

Question 1. PREPA's testimony validates a rumor we heard about the real reason for one of the bigger blackouts—a transmission line failure that was managed by LUMA. Specifically: "The most significant generating unit outage involves the Costa Sur generating station. On August 22, a transmission line fault led to loss of two of the San Juan generating units and transmission system fluctuations that affected generating facilities in the south, including Costa Sur. Those fluctuations led to vibrations which eventually forced Costa Sur Unit 6 offline and damaged the steam turbine rotor."

According to PREPA's testimony, one of the biggest blackouts since LUMA took over was because of a failure of a transmission line that broke a turbine at the Costa Sur power plant.

Answer. To be very clear, transmission line failures do not damage or break steam turbine rotors.

The facts related to this event are as follows:

- Transmission line 38900, on the north side of the island suffered a phase to phase fault and tripped at approximately 12:25 on August 22. This transmission line connects two transmission substations and does not have a direct connection to a generating station. This trip caused a transmission system disturbance which was exacerbated by San Juan generating Units 5 & 6

tripping and also Palo Seco generating Unit 3 tripping. Throughout this event, Costa Sur Unit's 5 & 6 showed expected operation and were witnessed as operating normally.

- A separate and wholly unrelated event occurred at approximately 19:25 (~7 hours later) on August 22 when the generation output of Costa Sur 6 was manually decreased by Costa Sur operating staff. There were no transmission outages at or through this period. At 22:30 of August 22, Costa Sur 6 was tripped via plant operating staff.

(a) Is that line under the management of LUMA?

Answer. Yes, transmission line 38900 is operated by LUMA. Costa Sur generating plant is operated by PREPA.

(b) Did that outage contribute to the increased use of more expensive generating plants, possibly including peaker plants, to maintain sufficient supply of electricity?

Answer. The transmission outage early in the day is not related to the Costa Sur 6 outage.

LUMA dispatches energy based on availability and according to security-constrained economic principles to meet demand. Less expensive resources are generally dispatched first—these include available renewables and base load units. When base load capacity is insufficient to meet demand, LUMA shifts to other available sources—including peakers. The Costa Sur outage was one of many other unplanned outages that required the use of all available sources of generation in order to meet demand. Given the large shortfall of generation, caused by multiple unplanned outages across many PREPA generating units, there were many periods of insufficient supply of electricity which is what caused load shedding across Puerto Rico.

(c) Was the increased use of more expensive power plants a primary justification for LUMA's proposed rate increase?

Answer. The reduced availability (unplanned outages) of multiple lower cost plants in addition to rising global fuel prices led to the variation which prompted the Puerto Rico Energy Bureau (PREB) to issue a determination to revise and adjust the FCA factor to recover fuel costs. LUMA is required, on behalf of PREPA, to submit calculations for the component of tariffs used to recover fuel cost on a quarterly basis. When actuals vary materially from forecasts, that deficit or credit is applied to the forward-looking rates designed to recover fuel costs incurred by PREPA. LUMA does not set rates, nor does LUMA benefit when rates increase. All changes to electricity rates are adjudicated by the PREB.

(d) What was the cause of the failure of the transmission line?

Answer. Line 38900 suffered a phase to phase fault due to a faulty insulator.

(e) If the transmission line failure is determined to be the fault of LUMA's mismanagement, will LUMA be responsible for the costs or does LUMA intend on asking the ratepayers to pay for its mistakes?

Answer. The entire electricity system, both generation and transmission & distribution in Puerto Rico is in a very poor state. It's been well documented that this state of disrepair did not occur overnight, it occurred across more than a decade. The repair and restoration of the electricity system is exactly why Puerto Rico created Act 120 and then ultimately selected LUMA as the T&D operator. This is why LUMA exists.

LUMA did not cause the transmission fault, however we did respond and restore the line to service. This transmission failure is unrelated to the Costa Sur 6 failure.

Similar to other utilities in other jurisdictions, LUMA has operational liabilities established in the contract.

Questions Submitted by Representative Velázquez

Question 1. When LUMA and the government of Puerto Rico executed the agreement for the operation and management of the grid, LUMA made certain representations about hiring a firm that specialized in the management of Federal funds.

(a) Has such firm been hired? If so, at what cost?

Answer. As per the LUMA proposal to the Partnership Committee, IEM, an experienced and well-regarded federal funds manager, is indeed part of the LUMA

team and is compensated on a time and materials basis for work actually performed. IEM's rates for LUMA are comparable to IEM's negotiated rates on other contracts with the U.S. Government. IEM costs are paid by federal funds through FEMA's public assistance administration fees, which are capped by Congress at 5% of the project value.

Question 2. Please provide in writing how many of LUMA's VPs make more than \$200k a year and how many make more than \$500k a year.

Answer. LUMA's Executive Leadership Team consists of highly qualified, skilled professionals with years of experience in leading high performing teams within the industry. LUMA has a compensation philosophy that aligns with paying its employees market based rates, which includes a total compensation package over \$200,000 annually for five Vice President roles.

As per our contract, six senior executives, including the CEO are paid for by the owners of LUMA at no cost to customers. Only the CEO is paid more than \$500,000 per year.

Historically, PREPA's executive leaders also received total compensation in excess of \$200,000.

Questions Submitted by Representative González-Colón

Question 1. Can you please provide us a specific timeline for LUMA submitting project Scope of Work documentation for FEMA/COR3 projects?

Answer. The FEMA process consist of several steps with respect to the submission of project Scope of Work (SOW) documents. In Puerto Rico, the regulator has added an additional step wherein the regulator has directed proponents to submit any SOW for review and approval by the regulator prior to submitting to FEMA. The SOWs at this stage are high-level Initial SOWs. Once approved by the regulator, the Initial SOWs are submitted to FEMA for its review. At this point, FEMA provides a FEMA project number which initiates preliminary work by proponents toward the development of Detailed SOWs for issuance to FEMA for approval. In effect, it's a two-step SOW process. Upon receipt of the approval of the Detailed SOW, the proponent can then undertake final design work and ultimately construction activities.

To date, LUMA has received approval from the regulator for 132 Initial SOWs, of which 65 have received FEMA project numbers with the remaining 67 projects are expected to be processed shortly by FEMA. This step of the process enables LUMA to undertake the necessary work to develop the Detailed SOWs.

The timeline for the Detailed SOW submissions ranges from the end of October 2021 through 2022 and 2023, depending on the complexity of the project and sequencing consideration. Initial projects whose detailed SOWs are being completed at this time will be utilized to work through and establish processes/procedures for future submission.

Question 2. At last month's meeting in Puerto Rico, it was said that 37 PREPA projects totaling \$1 billion have already been placed in the hands of LUMA.

(a) You can tell us what they are and what the status is?

Answer. As noted in response (1) above, the 65 projects noted have received FEMA project numbers based on LUMA's Initial SOWs submission. These projects are now at various steps in the development phase toward completing Detailed SOWs for submission to FEMA. This work involves preliminary engineering work, environmental and historic preservation assessment work, and hazard mitigation work toward the potential for additional FEMA funding.

(b) If any of these projects have been awarded, who are the contractors, builders?

Answer. There are no projects that have been awarded for construction activities. As noted above the projects are at preliminary engineering, environmental and historic preservation assessment, and hazard mitigation assessment stage of development.

(c) Were any of those T&D projects that were already designed under PREPA, and can LUMA change the project design and specifications?

Answer. As of June 1, there was only one project that had material early engineering work underway. All other projects required LUMA to initiate preliminary engineering activities.

The one project in question has been progressed further including modifications based on direction received from FEMA. This is the project that is targeted for an October 2021 submission of its Detailed SOW to FEMA (refer to Q1 above).

Question 3. Is a grid that supports these community distributed renewables be incompatible with one that supports central power plants, or just more complicated?

Answer. These two ideas are not opposed, but rather complementary. Community distributed renewables requires a strong and well constructed basic electricity grid. The integration of distributed energy resources does require more complexity in terms of control systems and operational intelligence but this is overlaid on top of the basic electricity system backbone.

(a) What support will LUMA provide to these initiatives?

Answer. LUMA is supporting these initiatives with the following current and future activities:

- LUMA is actively connecting distributed renewables as we speak. There was a significant backlog when we commenced operation and we are presently connecting new customers at a pace that will clear the backlog by year end.
- Operate, maintain and restore the basic infrastructure (poles, wires, transformers, protective devices, etc.)
- Install and operate the more complex operating control system and field devices to implement a smart grid capable of incorporating community distributed renewables and optimizing the load and generation on the system.
- Replacement of current meters with smart meters (Advanced Metering Infrastructure—AMI) to allow consumers to become prosumers.

Question 4. Labor Issue:

(a) It was mentioned, that LUMA has required of its contractors and subcontractors a Project Labor Agreement modeled after its agreement with International Brotherhood Electrical Workers (IBEW) Local 222 of Tampa, FL. This has raised the following constituent concerns, for which we need clear Yes or No answers:

(i) Whether this means ALL electrical contractors/builders in PR who may want to do business with LUMA, will have to place ALL employees, not just who do line or substation construction work for LUMA, under the agreement.

Answer. No. LUMA will not require all employees of contractors doing work for LUMA to fall under the PLA. LUMA's priority is the safety and well-being of its employees and anyone working on the property. The PLA specifically outlines the scope of the agreement between LUMA, the IBEW and its contractors and it covers personnel directly working on electrical apparatus.

Safety is dependent on highly skilled trained workers. LUMA recognizes the necessity of improving safety through offering additional evaluation, education, and training of workers.

Of note, the parent companies of LUMA created the LUMA College for Technical Training at their own expense in order to train and develop skilled workers.

LUMA is actively working to train its own workforce, but it would be atypical and impractical for LUMA to do the same for the outside workforce. Therefore, to gain the highest standards of safety and skilled workers, LUMA requires contractors working on the electrical system to follow the Project Labor Agreement or PLA.

(ii) Whether in effect you are requiring anyone wishing to do this work with LUMA to become an IBEW Union Shop.

Answer. No. LUMA is not requiring any contractor to become an IBEW Union Shop.

(iii) Whether this means they would then become bound to follow the IBEW rates even when doing work for private entities that are NOT LUMA.

Answer. No. Contractors are able to do as they wish when working for other entities or customers. The PLA only applies to the Puerto Rico Transmission and Distribution system.

(iv) Does this conflict with observing prevailing market wages—where the market is Puerto Rico?

Answer. No. There are only three published wage determinations for Puerto Rico and all set out the *minimum* amounts that contractors must pay. The PLA enables all contractors to comply with this minimum.

(b) Was there any open-door public participation process, in leading to this PLA decision, and supporting this requirement? Were P3 or PREPA involved or consulted?

Answer. This was a labor strategy decision to ensure a safe, trained workforce and is typical for this quantity of work in other parts of the United States. Labor negotiations are historically private between the company and the employee's representative.

(c) What plans do you have to employ and use local contractors and suppliers? We note that FEMA funded PREPA's reconstruction of grid maintenance and repairs.

Answer. We plan to maximize the use of local contractors and suppliers. Given the magnitude of the reconstruction work necessary, labor will be in high demand and short supply. We will use all of the local contractors and suppliers who are able to comply with labor and procurement rules, policies and practices.

(d) What Federal mandates impact your use of local contractors?

Answer. While the Federal Government provides provisions within Appendix II to 2 CFR Part 200 restricting contractors from receiving contract awards for Debarment or Suspension as well as requiring compliance with a number of other mandates such as Equal Employment Opportunity, Davis Bacon Act, Byrd Anti-Lobbying Amendment and others, these Federal mandates do not address the use of local contractors.

(e) In hiring of personnel from outside of Puerto Rico, what provisions are in place for compliance with Puerto Rico laws that requires some occupations to be locally licensed and certified? What provisions if any are there regarding when to outsource?

Answer. LUMA is actively recruiting in Puerto Rico. We strive to hire experienced workers on island and ensure that those workers that are non-residents to Puerto Rico are meeting both federal and commonwealth employment regulations. Outsourcing contractors has been limited to primarily on island contractors to date.

(f) How do you respond to the statements by the Puerto Rico's Manufacturers, small business groups and the local Chamber of Commerce earlier this week accusing LUMA of coercing or forcing out local contractors to bring in a single union shop from outside Puerto Rico with higher costs?

Answer. We were disappointed to hear the views of the groups opposed to the PLA. There is no coercion involved here. We will be working with them to better explain the PLA, how it works, and how it can benefit all. PLAs are common elsewhere across North America, but have not been used before in Puerto Rico—we will continue to work and communicate with stakeholders directly. The volume of project work that is in the FEMA funded pipeline is unprecedented for Puerto Rico and so the approaches taken to effectively manage this work must consider this.

In order to ensure the large amount of work gets completed in a timely manner, it is important to have an agreement that prevents labor slowdowns and strikes. The PLA provides for the arbitration of any labor issues without resulting in strikes and walkouts. It puts customers first.

Question 5. Are there provisions in place governing competition and award of projects where the LUMA parent companies or other corporate affiliates within Quanta and ATCO would participate?

Answer. The T&D O&M Agreement requires that LUMA, with input from PREPA P3A, and COR3, prepare a manual to govern the procurement of any contract involving federal funding, as well a manual to govern non-federally funded capital improvements. Among other requirements, the manuals must address employee and organizational conflicts of interest ("OCI").

To this end, the Procurement Manual ("PM") was prepared by LUMA and approved by the P3A and COR3, as well as acknowledged by PREPA's Governing Board. The PM requires that LUMA implement a plan to identify, avoid or mitigate actual or potential OCI concerns and issues as early in the procurement process as possible, including the participation of a LUMA parent company, covered affiliate or subsidiary, in accordance with 2 CFR Part 200 (the Uniform Rules) and other applicable laws and regulations ("OCI Plan").

LUMA is in the process of developing and submitting for P3A and COR3 approval an OCI Plan which will include the engagement of an independent third-party to undertake key stages of the procurement process when a LUMA parent, covered affiliate, or subsidiary participates in the process. The independent third-party is expected to, among other responsibilities, review and approve the scope of work, requirements, and other bid documents, lead the RFP process whenever there's a

covered affiliate participation, as well as issue a recommendation for award of the contract. The P3A and COR3 are also expected to play a key role in the process.

(a) What is the LUMA company policy regarding procurement directed by LUMA staff, to businesses owned by LUMA shareholders and employees?

Answer. LUMA's company policy regarding the participation of businesses owned by LUMA shareholders in procurements conducted by LUMA is that such participation implies an OCI concern which requires the engagement of an independent third-party, as described above. Businesses owned by LUMA shareholders may not participate in any procurement conducted by LUMA in which an independent third-party has not been engaged.

LUMA's company policy regarding the participation of businesses owned by LUMA employees in procurements conducted by LUMA is that such a situation has the potential to constitute a conflict of interest under LUMA's Conflict of Interest Policy. LUMA's employees are prohibited from entering or continuing to participate in a situation that involves a conflict of interest unless it has been properly disclosed and approved in writing by LUMA's Director of Compliance and its Chief Executive Officer.

(b) Does your contract permit contracting your corporate parents or related companies?

Answer. As explained above, the T&D O&M Agreement requires the implementation of procurement manuals which address OCI. In accordance with federal funding requirements, the PM does not prohibit that LUMA contract corporate parents or related companies but does require the avoidance or mitigation of the OCI that such situation may entail, including the engagement of an independent third-party to undertake key aspects of the procurement process.

Question 6. As a contractor of the Puerto Rico government, under an exclusive contract enabled by the Puerto Rico Legislature, and performing projects financed with federal funds, to what extent is LUMA accountable to disclose information to the Puerto Rico Legislature or Congress regarding activities in which public funds were or will or may be used?

Answer. Under the Operation and Maintenance Agreement, LUMA is designated agent of PREPA for certain key functions, such as collection of System Revenues (defined term). System Revenues collected by LUMA are the property of PREPA as Owner. LUMA collects such revenues as an agent of PREPA. Thus, any System Revenues can be categorized as public funds as they continue to belong to PREPA per the OMA. In connection with System Revenues, LUMA appreciates that it is subject to all applicable law on public funds, including the jurisdiction under Applicable Law of Governmental Bodies such as the U.S. Congress and the Puerto Rico Legislative Assembly.

LUMA's role pursuant to the OMA regarding public funds is subject to oversight under Applicable Law. However, not all funds received or managed by LUMA are public funds under the definition of the Puerto Rico Government Accounting Act. Payments made to LUMA in payment for the services rendered, like with any other contractor to the government, they become private funds of LUMA. With regard to LUMA's private funds, LUMA is not subject to disclosure requirements applicable to public funds.

The CHAIRMAN. Thank you very much. The gentleman yields, and I appreciate your testimony.

Let me now invite the Executive Director of the Puerto Rico Public-Private Partnership Authority, P3A, Mr. Fermín Fontanés. Sir, you are recognized.

**STATEMENT OF FERMÍN FONTANÉS, EXECUTIVE DIRECTOR,
PUERTO RICO PUBLIC-PRIVATE PARTNERSHIP AUTHORITY
(P3A), SANTURCE, PUERTO RICO**

Mr. FONTANÉS. Good afternoon, Chairman Grijalva, Ranking Member Westerman, Congresswoman González-Colón, and Committee members. Thank you for the opportunity to appear before you. My name is Fermín Fontanés and I am the Executive

Director of the Puerto Rico Public-Private Partnerships Authority, an entity created pursuant to Act 29, and the government entity charged with transforming Puerto Rico's electricity system by securing private-sector partners to improve power generation, transmission, and distribution for Puerto Rico.

The P3 Authority is leading the efforts toward the transformation, and recently oversaw the process that resulted in the transfer of operations of the Puerto Rico Electric Power Authority's transmission and distribution system to LUMA. Under the agreement, LUMA will operate, maintain, and modernize Puerto Rico's transmission and distribution system for a 15-year term.

My testimony today will cover the following topics: the delineation of responsibilities within the government agencies; the P3 authority's role as a party to the agreement; and the next steps in the transformation of Puerto Rico's electrical system.

Responsibilities under the agreement are as follows: the P3 Authority is charged with overseeing the operators and PREPA's compliance with the terms of the agreement; the Energy Bureau is responsible for regulating, overseeing, and ensuring the operator's compliance with applicable law and public policy; the Energy Bureau oversees all operational and technical aspects of LUMA's performance; PREPA remains the owner of the system, and cooperates with the operator and the P3, so that it can perform its obligations under the agreement.

As the government agency responsible for overseeing the implementation of all public-private partnerships, the P3 Authority is committed to the success of the project, and fully focused on exercising its contractual oversight functions.

During the transition period, the P3 Authority played a pivotal role in ensuring that the operator was able to begin operating the system within the agreed time frame. The P3 authority was responsible for assisting in reviewing and/or approving plans, manuals, and budgets submitted by the operator.

Throughout their agreement, the P3 Authority is charged with reviewing and approving annual budgets, as well as the incentive fee, and exercising oversight in relation to the operator's compliance with budgets, its obligations under the agreement.

In order to ensure that the P3 Authority is able to properly execute its mandate, the operator is required to deliver monthly reports to the P3 Authority. As part of its oversight functions, the P3 Authority also reviews the operator's performance metrics file on a quarterly basis, with the Energy Bureau. In this first metrics report, it includes data collected by the operator for the first 3 months since it commenced operations.

In the 4 months since LUMA began performance under the agreement, outages continued to be a problem, and in some cases appeared to have worsened. However, during each outage, the P3 Authority has been in constant communication with LUMA and PREPA, leading to better alignment and delineation of corrective actions.

The next step in the transformation is the procurement of one or more private operators to assume the operation and maintenance functions of Puerto Rico legacy electrical generation facilities. LUMA and the selected operators will be legally bound to comply

with applicable law, including the mandates of Act 17 for the integration of renewable energy.

Puerto Rico's electrical system transformation will not be accomplished in the span of 4 months. However, with the government's oversight, we are confident that the operator will be able to achieve our goals. Transforming Puerto Rico's electric system is a process that will take time and effort. It is true that the outages continue to affect the residents of Puerto Rico, but we must not continue to come up with temporary solutions to a permanent problem.

The Government of Puerto Rico remains confident that the agreement is key to Puerto Rico's transition to a modern, affordable, resilient, and reliable system that will serve as a driver of economic recovery and growth.

Thank you. Thank you, Mr. Chairman.

[The prepared statement of Mr. Fontanés follows:]

PREPARED STATEMENT OF FERMÍN FONTANÉS GÓMEZ, EXECUTIVE DIRECTOR,
PUERTO RICO PUBLIC-PRIVATE PARTNERSHIPS AUTHORITY

Introduction

Chairman Grijalva, Ranking Member Bruce Westerman, Congresswomen Jennifer Gonzalez Colón and Committee Members, thank you for the opportunity to appear before you today to discuss the status of the Puerto Rico Energy and Power Authority ("PREPA") post implementation of the LUMA LUMA Energy LLC ("LUMA" or the "Operator") Transmission and Distribution Contract. My name is Fermín Fontanés Gómez and I am the Executive Director of the Puerto Rico Public Private Partnership Authority (the "P3 Authority").

The P3 Authority is a public corporation of the Government of Puerto Rico created pursuant to the Public-Private Partnership Authority Act, Act No. 29-2009 (as amended, "Act 29"), and is the government entity charged with transforming Puerto Rico's electrical system by securing private sector partners to improve power generation, transmission, and distribution for Puerto Rico. As Executive Director of the P3 Authority, I am leading the efforts related to the transformation, and I recently oversaw the process that resulted in the transfer of operations of PREPA's transmission and distribution system to LUMA. Under the agreement between the P3 Authority, PREPA and LUMA ("the O&M Agreement"), LUMA will operate, maintain, and modernize Puerto Rico's transmission and distribution for a 15-year term.

As you are aware, Puerto Rico's electrical system faces severe challenges as a result of years of underfunding, lack of maintenance and disrepair, the devastation caused by hurricanes Irma and Maria, and a series of earthquakes that struck Puerto Rico in December 2019 and January 2020. The transformation process has been further delayed by strict shelter-in-place measures and other restrictions to prevent the spread of COVID-19.

My testimony today will address the government framework for oversight of the transformation process, and will cover the following topics: (i) the regulatory background underlying the whole transformation process; (ii) the delineation of responsibilities between the government agencies tasked with effectuating the transaction for the transformation of the transmission and distribution system and the Operator; (iii) the status of the proposed reorganization of PREPA, and (iv) the next steps in the transformation of Puerto Rico's electrical system.

i. Regulatory Framework

The regulatory framework underlying the PREPA transformation rests on three main pillars—the Puerto Rico Electric Power System Transformation Act, Act No. 120-2018 (as amended, "Act 120"), the Puerto Rico Energy Public Policy Act, Act No. 17-2019 ("Act 17"), and the Puerto Rico Transformation and RELIEF Act, Act No. 57-2014 (as amended, "Act 57").

The Government enacted Act 120 with the objective of transforming Puerto Rico's electric system into one that is modern, sustainable, reliable, efficient, cost-effective and resilient to natural disaster. Further, to address the Legislative Assembly's concern that the Commonwealth's electric power and generation and distribution system was obsolete and hindered opportunities for economic development, Act 17 was enacted requiring PREPA to delegate or transfer operation of the electric power

generation, transmission and distribution, commercialization, and operation systems through contracts awarded and executed pursuant to Act 120 and Act 29, all to be done within certain specific milestones.

Created pursuant to Act 57, the Puerto Rico Energy Bureau (the “PREB”) is the government agency charged with regulating, overseeing and ensuring compliance with the public policy on energy of the Commonwealth of Puerto Rico. The PREB has served, and continues to serve, an important function in the transformation of PREPA, including the approval of the energy compliance certificate assuring that the O&M Agreement is consistent with Puerto Rico’s energy public policy.

ii. Delineation of Responsibilities Among the Relevant Parties

The parties to the O&M Agreement specifically allocated responsibilities among various Government agencies as required by the underlying regulatory framework. Specifically:

- the P3 Authority is charged with overseeing the Operator’s and PREPA’s compliance with the terms of the O&M Agreement;
- the PREB is responsible for regulating, overseeing, and ensuring the Operator’s compliance with applicable law and public policy on energy. As the Island’s independent regulator for the energy sector, the PREB oversees all operational and technical aspects of LUMA’s performance as operator of the transmission and distribution system; and
- PREPA continues to own the transmission & distribution system and is also required to reasonably cooperate with the Operator so that it can perform its obligations under the O&M Agreement.

Operations	PREPA	LUMA	P3A	PREB
Title / Ownership of T&D System	✓			
Right of Access	✓	✓	✓	✓
Provision of T&D Services		✓		
Billing and Collection		✓		
Capital Improvements		✓		
Oversight Rights			✓	✓
Employment of Workforce		✓		
Execution / Administration of Contracts & Procurement of Ancillary Services / Subcontracting		✓	✓	
Liaise with Regulator / Other Overseer(s)		✓		
Preparation & Retention of Records		✓		
Auditing Rights		✓	✓	✓
Maintenance of Insurance Coverage		✓		

Financial	PREPA	LUMA	P3A	PREB
Formulation and Submission of Budgets		✓		
Approval of Budgets			✓	✓
Federal Funding Sub-grantee	✓			
Federal Funding Eligibility and Process		✓		
Responsible for Financing Capital Projects and Pass-Through Costs (as owner of system revenues)	✓			
Approval of Operator-Owned Capital Improvements				✓
Establishment, Maintenance and Funding of Service Accounts	✓			
Payment of Fixed Fee	✓			
Approval of Incentive Fee			✓	
Payment of Incentive Fee	✓			

Miscellaneous Contractual Rights	PREPA	LUMA	P3A	PREB
Extend the Initial Term upon Mutual Agreement	✓	✓	✓	
Rights to Terminate the Agreement upon Event of Default		✓	✓	
Rights to Indemnity	✓	✓	✓	
Assignment Rights	✓	✓		
Waivers		✓	✓	
Consent Required for Amendment	✓	✓	✓	✓

a. Role of the Puerto Rico Public-Private Partnerships Authority

The P3 Authority is charged with overseeing Operator's compliance with the terms of the O&M Agreement. As the government agency responsible for overseeing the implementation of all public-private partnerships, the P3 Authority is committed to the success of the project, and fully focused on exercising its contractual oversight functions to achieve the Government's goals.

During the transition period leading to LUMA formally taking over the operation of the transmission and distribution system, the P3 Authority played a pivotal role in ensuring that the Operator was able to begin operation of the transmission and distribution system within the agreed timeframe. The P3 Authority was responsible for assisting in reviewing and/or approving the System Operation Principles, a System Remediation Plan, Performance Metrics, Initial Budgets, and Procurement Manuals, among others. The P3 Authority reviewed and commented on various drafts of these operating plans, which were required for handover, and participated in multiple working groups with the Operator to refine such plans. In addition, the P3 Authority oversaw the development and implementation of protocols for the review and validation of the Operator's invoices during the front-end transition period.

Throughout the term of the O&M Agreement, the P3 Authority is charged with: (i) reviewing and approving the Operator's annual budgets as well as any incentive fee payable to LUMA for achieving certain performance metrics; (ii) exercising oversight in relation to the Operator's compliance with budgets and its performance of its obligations under the contract; and (iii) cooperating with the Operator in its efforts to obtain and effectuate any required government approvals. In order to

ensure that the P3 Authority is able to properly execute its mandate and contractual obligations, the Operator is required to deliver monthly reports for the P3 Authority's review. Finally, the P3 Authority holds regular meetings and proactively engages in communication with LUMA in order to discuss matter pertaining to day-to-day execution of the O&M Agreement.

b. Role of the Puerto Rico Energy Bureau

As the independent regulator of the energy system, the PREB has the ultimate responsibility to regulate, monitor, and enforce the energy public policy of the Government. As part of its statutory mandate, the PREB is charged with ensuring that electric service in the Commonwealth of Puerto Rico is safe, reliable, and affordable. In accordance with the regulatory framework established by Act 120, the PREB and the P3 Authority collaborate in supervising LUMA's performance of the O&M Agreement. In addition, the P3 Authority and the PREB, together with PREPA, continue to work on a work plan to oversee the transaction and guarantee the optimum use of the resources of each entity without unnecessary duplicity or overlapping. As such, the PREB has been tasked with overseeing all technical and operational aspects of LUMA's performance under the O&M Agreement.

As part of its technical oversight functions, the PREB issued a Resolution and Order of May 21, 2021, directing the Operator to prepare quarterly reports with respect to certain performance metrics, including customer service metrics, customer average interruption duration, operational and capital expenses, and certain generation metrics. As further explained below, the first quarterly report covering the period from June 2021 to August 2021 was recently filed with the PREB on September 20th.

Among other responsibilities, PREB has the statutory responsibility to oversee rates charged to consumers. The O&M Agreement specifically states that nothing in the contract is intended to impair or restrict the PREB's right to approve final rates and charges to customers in accordance with applicable law. Therefore, the Operator is subject to regulatory oversight by the PREB and cannot increase rates without PREB's approval. No rate increases are contemplated in the Operator's Initial Budget approved by the PREB for 2022–2024.

c. Role of the Puerto Rico Electric Power Authority

As of today, PREPA has two distinct roles with respect to Puerto Rico's electric energy system: (i) it is the owner of the transmission and distribution system and, as such, is charged with cooperating with the Operator in its operation and management of the transmission and distribution system; and (ii) it is the owner and operator of the legacy base-load generation plants and gas turbine peaking plants located throughout the island of Puerto Rico.

Pending the completion of the procurement process to delegate the operation and maintenance functions of these generation facilities, PREPA remains responsible for operating the same to generate the electricity that is then transmitted and distributed by the Operator to the people of Puerto Rico.

d. Role of the Private Operator

As required by law, the P3 Authority conducted a procurement process that led to the signing of the O&M Agreement in June 2020, and then oversaw a one-year-long transition of operations to LUMA. The transition allowed the parties to prepare for the Operator's takeover of the transmission and distribution system by (i) developing the requisite operating plans, performance metrics, procedures and policies needed for a successful transaction; (ii) hiring employees to operate the transmission and distribution system; (iii) allowing the Operator to establish a presence on the Island; and (iv) refining the arrangements between LUMA as operator of the transmission and distribution system and PREPA as operator of the electrical generation facilities.

LUMA formally took over the operation of the transmission and distribution system on June 1, 2021. As the operator, LUMA is responsible for the day-to-day operation of the transmission and distribution system, which includes, among other things: (i) electric transmission, distribution and load servicing; (ii) asset management and maintenance; (iii) public and employee safety; (iv) managing and administering Federal funds; (v) human resources; (vi) information technology; (vii) customer services and communicating with the public; (viii) billing and collection; (ix) system planning and operations; (x) implementation and planning of capital improvements; (xi) accounting and financial services; (xii) communicating with, and appearing before, the PREB; (xiii) preparation of the Integrated Resource Plan; (xiv) emergency response; and (xv) communications with the Government, community and the media.

LUMA's first Quarterly Performance Metrics Report filed with the PREB includes data collected by the Operator for the first three months since it commenced operation of the transmission and distribution system on June 1st. The report includes an update on both transmission and distribution metrics and those that involve PREPA's generation using data that the Operator received from PREPA. Highlights from the report as well as trends over the initial three-month period are as follows:

Customer Service—

- the percentage of calls answered improved substantially from approximately 28% to 54% in comparison to PREPA's historical Fiscal Year 2020 data (used as baseline).
- the average wait time to answer calls improved substantially from approximately 26 minutes to approximately 9 minutes in comparison with PREPA's baseline.

T&D Reliability—The initial operating months had significant outages throughout all regions as the Operator worked to transition operations. The August data reflected the significant lack of PREPA's generation resulting in rotating load shedding by the Operator. With regards to specific indicators, the report shows as follows:

- SAIDI (System Average Interruption Duration Index) decreased by 85 minutes. This is still worse than both PREPA's baseline and the benchmark set by PREB in its May 2021 Resolution and Order.
- SAIFI (System Average Interruption Frequency Index) slightly increased. This is still better than both PREPA's baseline and the benchmark set by PREB in its May 2021 Resolution and Order.
- CAIDI (Customer Average Interruption Duration Index) overall customer average interruption time improved, although still worse than both PREPA's baseline and the benchmark set by PREB in its May 2021 Resolution and Order.

Human Resources—

- While absenteeism over the initial 3-month period of June–August increased from 1.1% to 1.9%, it is significantly better than PREPA's baseline of 13.1%. It is also better than the benchmark of 2.4% set by PREB in its May 2021 Resolution and Order.
- The OSHA Total Recordable Incident Rate (“TRIR”) worsened during the initial period with injuries reported in August being 8, which was up from 3 in June 2021. LUMA's August TRIR of 2.9% is slightly worse than PREB's benchmark of 2.3% but better than PREPA's baseline of 6.4%.

Power Generation—

- Power plant unit availability worsened by 17% from June to August for the larger base load power plant units.
- Forced Outage Hours increased by over 20% in August versus June 2021.
- The lack of generation/resource adequacy situation led to island-wide rotating load shedding in August and into September. The lack of base load generation also led to operating with the peakers units, which are less efficient and also resulted in fuel cost (\$74 million dollars over projections)

As noted above, in the four months since LUMA began performance under the O&M Agreement, outages continue to be a problem and, in some cases, appear to have worsened. However, during each outage, the P3 Authority has been in constant communication with PREPA and the Operator to seek explanations and facilitate dialogue to remedy the situation as quickly and efficiently as possible. Communication with all parties has been effective and has led to better alignment and delineation of corrective actions.

Also, it is important to point out that the operation and maintenance of the base-load generation plants and gas turbine peaking plants located throughout the island of Puerto Rico remain the responsibility of PREPA. Although the Operator is responsible for cooperating with the generators of electric energy, LUMA is not responsible for any of the operation, repair, replacement, maintenance or improvement of the legacy electrical generating facilities.

iii. PREPA Reorganization

As part of the transformation process, PREPA is currently undergoing a reorganization with the view toward creating two new subsidiaries—GridCo and

GenCo (the “PREPA Reorganization”). Upon completion of the PREPA Reorganization, ownership of PREPA’s transmission and distribution system will be transferred to GridCo and ownership of PREPA’s Legacy Generation Assets will be transferred to GenCo. One of the goals of the PREPA Reorganization is to comply with the public policy mandated in Act 17 which provides for the unbundling of Puerto Rico’s electrical system, the incorporation of the private sector in the operation of assets and the rendering of electric power services so to allow for the elimination of interventions fueled by party politics.

iv. Next Steps in the PREPA’s Transformation—Procurement of Generation Operator

The next step in the transformation of PREPA is the procurement of one or more private operators to assume the operation and maintenance functions of Puerto Rico’s legacy electrical generation facilities, as required by Act 17.

Following that mandate, the P3 Authority commenced a procurement process, which purpose is to delegate the operation and maintenance functions of these facilities. The currently ongoing procurement process began with the launch of a request for qualifications to which 15 private parties responded. In consultation with its financial, technical and legal advisors, the P3 Authority evaluated the statements of qualifications received from those private parties and submitted its analyses to the partnership committee established to oversee the process. The partnership committee short-listed eight private parties with best-in-class expertise and experience to participate in the request for proposals (“RFP”) phase.

On November 10, 2020, the P3 Authority launched the RFP phase with the issuance of the RFPs to the eight qualified parties. Since the issuance of the RFP, this process has advanced steadily. Currently, interested parties are conducting site visits and continuing to conduct due diligence and engage on the draft contract negotiations.

Upon award of the generation contract, the selected generation operator(s) and LUMA will work in parallel to operate Puerto Rico’s electric energy system.

Both the Operator and the generation operator(s) to be selected as part of this procurement process are and will be legally bound to comply with PREB’s regulations and orders and with the applicable legal framework that regulates the energy industry in Puerto Rico, including the mandates of Act 17 for the integration of renewable energy into the grid. Renewable energy objectives are one of many goals set by the Government to achieve the modernization of Puerto Rico’s electric system. The transformation is a multi-step process that will be accomplished over multiple years. The O&M Agreement is but the first step in this transformation and is aimed at repairing, remediating and strengthening the transmission and distribution system. Without that, Puerto Rico will never be able to develop a fully resilient energy infrastructure. The Government of Puerto Rico is committed to ensuring the creation on a sustainable electric system and creating the transmission and distribution system more capable to manage and incorporate cleaner sources of energy.

Conclusion

Puerto Rico’s electrical system transformation will not be accomplished in the span of four months. However, with the oversight of the P3 Authority, we are confident that the Operator will be able to achieve the goals the parties have set out to accomplish. Like any transition and as was expected, there have been certain challenges. From the moment the new transmission and distribution system operator was announced, naysayers have engaged in a campaign of misinformation aimed at frustrating and derailing the transaction. In addition to this, the Operator inherited a very frail electrical system as a result of years of lack of maintenance, underfunding and disrepair. Everyone knows that transforming Puerto Rico’s electric system is not going to happen overnight—it is a process that will take time and effort. It is true that outages continue to affect the residents of Puerto Rico but we must not continue to come up with temporary solutions to a permanent problem, and to that end, the Government of Puerto Rico is committed to ensuring that the Operator addresses the issues faced by the transmission and distribution system and brings it in line with industry standards.

Notwithstanding the challenges faced in the last few months, the Government of Puerto Rico remain confident that the O&M Agreement is an important part of Puerto Rico’s transition to a modern, affordable, resilient, and reliable electric energy system that will serve as a driver of economic recovery and growth.

QUESTIONS SUBMITTED FOR THE RECORD TO FERMÍN FONTANÉS GÓMEZ, EXECUTIVE
DIRECTOR OF THE PUERTO RICO PUBLIC-PRIVATE PARTNERSHIPS AUTHORITY

Questions Submitted by Representative Sablan

Question 1. Can you describe the relationship and responsibilities between PREPA and LUMA as defined in the existing contract? For example, if the AES Coal Plant were to close before 2028, would LUMA play a role in that decision? What changes to the contract, if any, do you think are needed?

Answer—

PREPA and LUMA’s Relationship and Responsibilities Under the O&M Agreement

PREPA has two distinct roles with respect Puerto Rico’s electric energy system under the O&M Agreement: (i) as required by the Puerto Rico Energy Policy Act of 2019, Act No. 17-2019 (“Act 17”), it is the owner of Puerto Rico’s transmission and distribution system (the “T&D System”) and, as such, is charged with cooperating with LUMA in its operation and management of the T&D System; and (ii) it is the owner and operator of the base-load generation plants and gas turbine peaking plants located throughout Puerto Rico (the “Legacy Generation Assets”), pending the completion of the procurement process to delegate its operation and maintenance responsibilities to one or more private operators. Accordingly, PREPA continues to be responsible for generating the electricity that is then transmitted and distributed by LUMA to the people of Puerto Rico.

LUMA’s role under the O&M Agreement is to act as the “Operator” of the T&D System. In its role as Operator, LUMA is responsible for the day-to-day operation of the T&D System, which includes, among other things: (i) electric transmission, distribution and load servicing; (ii) asset management and maintenance; (iii) public and employee safety; (iv) managing and administering Federal funds; (v) human resources; (vi) information technology; (vii) customer services and communicating with the public; (viii) billing and collection; (ix) system planning and operations; (x) implementation and planning of capital improvements; (xi) accounting and financial services; (xii) communicating with, and appearing before, the Puerto Rico Energy Bureau (the “PREB”); (xiii) preparation of the Integrated Resource Plan (the “IRP”) subject to approval by the PREB; (xiv) emergency response; and (xv) communications with the Government of Puerto Rico (the “Government”), community and the media (the “O&M Services”). Accordingly, LUMA is responsible for cooperating with PREPA (and, upon completion of the ongoing procurement for the Legacy Generation Assets, with operators of the Legacy Generation Assets) and the other generators of electric energy on Puerto Rico, but it is not responsible for any of the operation, repair, replacement, maintenance or improvement of the Legacy Generation Assets or any other privately owned generation asset.

In addition, under the O&M Agreement, prior to transferring to LUMA the operation of the T&D System on June 1, 2021 (the “Service Commencement Date”), LUMA and PREPA, along with various other government entities, including the P3 Authority, the Central Office for Recovery, Reconstruction and Resiliency (“COR3”) and the PREB, were required to work together to prepare for the transfer to LUMA of the T&D System, including by collaborating to (i) develop the requisite operating plans, performance metrics, procedures and policies needed for a successful transaction; (ii) hire employees to operate the T&D System; (iii) establish LUMA’s presence on Puerto Rico; and (iv) refine the arrangements between LUMA as operator of the T&D System and PREPA as operator of the Legacy Generation Assets.

AES Coal Plant Hypothetical

Under the O&M Agreement, LUMA is responsible for (i) acting as agent of PREPA in administering certain contracts relating to the operation and maintenance of the T&D System (“System Contracts”), including the power purchase and operating agreement (the “AES PPOA”) between PREPA and AES Puerto Rico (the “AES Operator”), the private operator of the AES Coal Plant, (ii) ensuring that the T&D System, Legacy Generation Assets and all generation assets not owned by PREPA operate in a reliable and economic fashion, and (iii) ensuring that sufficient generation capacity is available and maintained to meet resource adequacy goals (“Resource Adequacy”) in accordance with Puerto Rico’s energy public policy.

If the AES Coal Plant were to close before 2028, LUMA’s role under the O&M Agreement would be to prepare a risk assessment and analysis in support of Resource Adequacy concluding that the AES Coal Plant can be shut down at such time. In addition, prior to commencing any work in furtherance of such determina-

tion, LUMA would be required to obtain the PREB's approval to begin shutting down the AES Coal Plant.

Changes to the O&M Agreement

The P3 Authority is of the position that no changes to the O&M Agreement are needed at this time.

First, the O&M Agreement is part of the Government's broader public policy preference to depoliticize PREPA and incorporate the private sector in the operation of assets and the rendering of electrical power services. Such public policy aims to finance infrastructure projects and provide public goods and services through public private partnerships.

For years, Puerto Rico's dated and fragile electric system has faced significant operational and reliability challenges. In 2017, these challenges were both highlighted and significantly aggravated by Hurricanes Irma and Maria, two devastating hurricanes which struck Puerto Rico within two weeks of each other. The combined impact of Irma and Maria led to a complete failure of the electrical grid, resulting in the longest power outage in U.S. history. Irma left approximately 70% of Puerto Rico without power and, shortly thereafter, Maria, the strongest hurricane to hit Puerto Rico in close to 100 years, made landfall and left 100% of Puerto Rico's residents without power for significant periods of time. On average, households went 84 days without power, however it was approximately 11 months before power was restored to 100% of Puerto Rico's residents.

Confronted with this reality, the Government determined that a critical component of the transformation of Puerto Rico's energy sector was to bring in private sector operators who would be able to bring to bear their world-class expertise, experience, and know-how to execute on the transformation of the island's electric system.

Second, the O&M Agreement is the result of a two-year-long robust and transparent competitive procurement process, conducted pursuant to and in compliance with the requirements of the Puerto Rico Electric System Transformation Act, Act No. 120-2018, as amended ("Act 120"), and the Puerto Rico Public-Private Partnership Authority Act, Act No. 29-2009 ("Act 29"). Over the course of these two years, multiple drafts of the contract were distributed to the proponents, with each new draft reflecting the comments from the proponents that the partnership committee established for the O&M Agreement procurement process (the "Partnership Committee") had accepted. Specifically, the request for proposals required that each proponent (i) provide written comments to and markups of three drafts of the contract and (ii) meet with the P3 Authority and various other government entities, including the FOMB, to walk through and discuss the proponent's comments to each successive draft of the contract. In addition, there were over 700 diligence questions, more than 19 Partnership Committee meetings and over 15 diligence meetings. Accordingly, each provision of the O&M Agreement was carefully negotiated between the main stakeholders, which resulted in the best market terms and conditions.

Finally, the Government cannot amend the O&M Agreement unilaterally, as it can only be amended by written agreement between LUMA, PREPA and the P3 Authority. Furthermore, amendments to the O&M Agreement do not enter into effect until (i) the parties have obtained approval from the PREB and the FOMB (if then in existence), to the extent required by applicable law, and (ii) the P3 Authority has received the relevant tax opinions providing that the amendment in question does not jeopardize the tax-exempt status of the PREPA bonds.

In light of the above, it is not clear that reopening contract negotiations with LUMA or re-starting a procurement process would result in an agreement that is more favorable to the Government and the people of Puerto Rico.

Questions Submitted by Representative Velázquez

Question 1. How many employees within the P3 Authority are charged with providing oversight to the O&M Agreement?

Answer. It is important to point out that the PREB is the entity in charge of overseeing all technical and operational aspects of LUMA's performance under the O&M Agreement. The O&M Agreement acknowledges PREB's authority in all matters under its jurisdiction. The P3 Authority has a very specific role as the Administrator to the O&M Agreement, which is directed to making sure that LUMA complies with its obligations thereunder. Specifically, the P3 Authority's responsibilities as Administrator under the O&M Agreement are the following: (i) review and approve LUMA's budgets to ensure compliance with the rate orders issues by PREB from

time to time; (ii) review and approve the incentive fee payable to LUMA for a given contract year; (iii) cooperate with LUMA such that budgets and funds are sufficient in amount to enable LUMA to meet the Contract Standards and provide reasonable opportunity for LUMA to achieve the Performance Metrics, as both terms are defined by the O&M Agreement; (iv) exercise oversight in relation to LUMA's compliance with the budgets approved by the PREB, performance of its obligations under O&M Contract, and compliance with federal funding requirements; (v) respond within 30 days to all requests of LUMA with respect to matters requiring approval, review or consent of Administrator under O&M Agreement; (vi) cooperate with LUMA by providing information, data and assistance as may be reasonably necessary; (vii) declare an event of default and exercise remedies under O&M Agreement; (viii) coordinate any audits that the P3 Authority is entitled to perform with any audits being undertaken by PREPA and any other governmental body; and (ix) cooperate with LUMA to obtain and effectuate approvals of any governmental body.

To achieve such purposes, the P3 Authority currently has six employees responsible for overseeing LUMA and PREPA's performance of its contractual obligations. Also, the P3 Authority team communicates with LUMA on a daily basis, serving as liaison between Luma, other stakeholders and governmental agencies. The P3 Authority is in the process of interviewing candidates for the P3 Authority's office of administration of the O&M Agreement, which recruitment process must strictly comply with local administrative and human resources laws and regulations. Specifically, under local law, the P3 Authority is required to interview and give priority to all prospective candidates within the Government before announcing any job openings to the public and expanding its search beyond the Government.

Question 2. Did the P3 authority have to engage outside experts to help with the oversight of the O&M Agreement?

Answer. Yes, the P3 Authority has engaged outside experts to help with its oversight of the O&M Agreement.

Question 3. If so, can you share the names of those experts and the agreements for the members of this Committee?

Answer. The outside experts hired by the P3 Authority to help oversee the O&M Agreement are (i) FTI Consulting ("FTI"), (ii) Ximmena, LLC ("Ximmena"), (iii) Eclipse Management, LLC ("Eclipse"), and (iv) Scott Madden, LLC ("Scott Madden").

FTI assists with overseeing LUMA's technical and financial compliance with the O&M Agreement. Ximmena assists with overseeing the technical and regulatory compliance with the O&M Agreement. Eclipse Management assists with overseeing LUMA's compliance with certain financial obligations under the O&M Agreement. Scott Madden was hired to assist with the creation of the necessary administrative framework required to oversee the O&M Agreement. Copy of the Agreements with the named advisors are attached as Exhibit A herewith.

Questions Submitted by Representative González-Colón

Question 1. Multiple groups like UPR Resiliency Law Center and even Members of Congress have argued that:

- *The O&M Agreement should be canceled or amended.*
- *That FEMA should condition its recovery funds to immediate action being taken by the Puerto Rican Government, so a thorough investigation and report is produced on the O&M Agreement.*
- *That Congress and FEMA should ensure that federal funds are used to "move away from fossil fuels, advancing the use of renewable energy, protecting workers rights and improving the health of people and the environment."*

(a) How do you answer to that?

(b) How much would that drag on the already painfully slow recovery?

Answer—

Response to the Argument that the O&M Agreement Should be Canceled or Amended:

The P3 Authority is of the position that the O&M Agreement should not be canceled and does not require amendments. The O&M Agreement is the result of a two-year-long robust competitive procurement process, conducted pursuant to and in compliance with the requirements of Act 120 and Act 29. As such, the terms of the O&M Agreement were thoroughly negotiated between key stakeholders and sub-

ject to multiple rounds of the review and comment by, among others, technical experts, as well as experts in local law, environmental law, federal funding requirements, and the applicable regulatory framework which resulted in the best market terms and conditions.

In addition, the O&M Agreement is part of the Government's broader public policy preference to finance infrastructure projects and provide public goods and services through public private partnerships. Specifically, the O&M Agreement is the result of the Government's determination that a critical component of the transformation of Puerto Rico's energy sector would be to bring in a private sector operator who would be able to bring to bear its world-class expertise, experience and know-how to execute on the transformation.

Accordingly, it is not clear that reopening contract negotiations with LUMA or restarting the procurement process would result in an agreement that is more favorable to the Government and the people of Puerto Rico. What is certain is that reopening contract negotiations would result in further delays to Puerto Rico's recovery process, the envisioned transformation of the electric grid and significant expenses to the Government of Puerto Rico. Cancellation of the O&M Agreement would also bring the threat of protracted litigation.

Response to the Argument that FEMA Should Condition Recovery Funds:

Any use by LUMA of FEMA recovery funds is, in fact, subject to a number of terms and conditions. The O&M Agreement requires LUMA to fully comply with State and Federal requirements and procedures that govern FEMA recovery funds. Further, the specific projects to be built using these funds must meet FEMA eligibility criteria, including the environmental and historic preservation reviews that apply to any facility built or repaired with federal funds. In light of this, LUMA may only use FEMA funds as permitted by FEMA's Public Assistance Program and in accordance with all statutory and regulatory requirements applicable to projects funded by Public Assistance grants.

It is worth mentioning that FEMA does have the authority to impose conditions on a grant award that require funds to be used for a particular purpose or manner that is consistent with Federal statute, regulation, or Executive Order (*see* 2 C.F.R. §§ 200.100(a)(1) and 200.211 for information on how agencies can impose conditions on grant awards). Therefore, the applicable regulation provides for sufficient Federal intervention with respect to the use of the grant funds destined to Puerto Rico's power generation, transmission, and distribution.

Furthermore, the O&M Agreement includes certain requirements intended to provide additional assurance that any goods and services acquired by LUMA for federally funded projects are properly procured and administered. For example, under the O&M Agreement, prior to the Service Commencement Date, LUMA was required to prepare a procurement manual in collaboration with the P3 Authority and COR3 (the "LUMA Procurement Manual"), which LUMA must now use to manage the end-to-end procurement or purchasing of any third-party goods and services in connection with its performance of the O&M Services, including its performance of any O&M Services related to FEMA funded projects. Of note, the scope and contents of the Procurement Manual was the subject of multiple discussions with FEMA and the OIG Office to assure compliance with federal regulations.

Finally, because the argument that FEMA should condition its recovery funds on the Government taking immediate action to conduct a thorough O&M Agreement is similar to the Whitefish and Cobra contracts, it is worth noting two critical differences between the O&M Agreement, on the one hand, and the Whitefish and Cobra contracts, on the other. First, unlike the Whitefish and Cobra contracts, each of which was the result of a non-competitive procurement process for emergency restoration services conducted in the immediate aftermath of Hurricanes Irma and Maria, the O&M Agreement is the result of a two-year-long robust competitive procurement process conducted pursuant to and in compliance with the requirements of Act 120 and Act 29. Second, unlike the Whitefish and Cobra contracts, which were paid for using FEMA funds, the O&M Agreement is not a federally funded contract. Rather, payments made to LUMA in exchange for the O&M Services come out of the revenues from the tariff paid by PREPA's consumers.

Response to the Argument that Congress and FEMA Should Ensure Federal Funds Are Used to Advance Renewable Energy:

The Government is committed to increasing renewable energy in Puerto Rico. Act 17 establishes the Puerto Rico public policy for the execution of the Renewable Portfolio Standard. The Renewable Portfolio Standard requires, among other things, that the renewable portfolio for the Puerto Rico energy system increase to 20% by 2022, 40% by 2025, 60% by 2040 and 100% by 2050. Act 17 also requires that

LUMA implement energy efficiency programs to obtain 30% energy efficiency savings by 2040.

Under the O&M Agreement, LUMA's role is limited to the operation of the T&D System and does not include power generation. In other words, the O&M Agreement does not authorize LUMA to purchase or contract for power generation. What is more, the O&M Agreement requires LUMA to comply with Act 17 and to ensure Resource Adequacy in accordance with the Puerto Rico energy public policy.

Given that the PREB is the public entity generally responsible for the oversight and correct execution of Puerto Rico's energy public policy, by making the PREB entity responsible for overseeing LUMA's compliance with Puerto Rican law and public policy on energy, including renewable energy policy such as the Renewable Portfolio Standard, the O&M Agreement ensures that LUMA will perform the O&M Services in furtherance of the Government's goals with respect to the advancement of renewable energy in Puerto Rico.

Regarding the Impact on Puerto Rico's Already Painfully Slow Recovery if the Government Were to Capitulate to Any of the Preceding Three Arguments

Capitulating to any of the three arguments outlined above will ultimately hurt the people of Puerto Rico by further delaying the Government's mission to transform Puerto Rico's electric grid and promote economic recovery and growth following the devastation caused by Hurricane Irma and Hurricane Maria. Specifically, if the O&M Agreement is terminated, the people of Puerto Rico will never be able to reap the benefits of the significant amount of time and resources that have already been invested into the transaction by the Government. In addition, if Congress and/or FEMA were to take actions to further delay the disbursement of federal funds to PREPA, Puerto Ricans who, at this point, have been waiting for FEMA to approve a permanent power grant for four years will have to continue waiting, which will, in turn, foment further public distrust in both the Government and the Federal Government.

Question 2. How much would it cost to rescind the O&M Agreement? What would be the difference between doing it for cause, vs. as a policy decision? What would be the impact on the recovery and mitigation action plan for the electric system of a reset of the whole process?

Answer—

Cost of Rescinding the O&M Agreement

The O&M Agreement can be terminated by LUMA and/or the Government prior to the end of the term of the agreement under a number of circumstances, including, among others, bankruptcy, failure to pay undisputed amounts owed under the O&M Agreement and a representation and warranty of a party being proved to be false or inaccurate in any material respect when made and thereby materially and adversely affects the legality of the O&M Agreement or LUMA's ability to carry out its obligations. However, the O&M Agreement only requires the Government to pay LUMA a termination fee (the "Termination Fee") in the event that the O&M Agreement is terminated under certain limited circumstances not due to LUMA's fault.

Specifically, the Government must pay the Termination Fee in the event that the O&M Agreement is: (i) terminated, revoked, nullified, canceled or otherwise rendered invalid by any duly enacted Puerto Rican law, as determined by a final non-appealable judgment by a court of competent jurisdiction; (ii) terminated by LUMA or the P3 Authority as a result of the T&D System being sold, transferred or assigned, in whole or in part, to a private entity; or (iii) terminated by LUMA as a result of any change, amendment or modification to any applicable Puerto Rican law or any adoption of, or change to, any administrative or judicial interpretation (having the force of law) of any such law or any regulation that (A) renders unenforceable or invalid, in whole or in part, any right or privilege granted to LUMA under the O&M Agreement, (B) subjects LUMA to rate or other substantive regulation by the PREB in a manner that materially and adversely affects LUMA's ability to perform its obligations under the O&M Agreement to the extent not otherwise mitigated by the terms thereof, or that constitutes a default by the FOMB under the terms of the FOMB Protocol Agreement (as such term is defined by the O&M Agreement), subject to certain exceptions, or (C) caps or has the effect of capping rates charged to customers, other than a temporary cap on rates to address an certain outage events.

The Termination Fee ranges between \$158 million and \$104 million, depending on when in the 15-year term such termination occurs. Accordingly, the Termination

Fee is only payable to LUMA under certain circumstances, which include termination on the basis of public policy but exclude termination for cause.

Impact of Rescinding the O&M Agreement

Considering the Termination Fee described above, terminating the O&M Agreement would not only be costly to the people of Puerto Rico, but it would also deprive the people of Puerto Rico from being able to reap the benefits of the significant amount of time and resources that have been invested into the transformation of the electric grid by the Government. This would ultimately hurt the people of Puerto Rico by further delaying the Government's mission to transform Puerto Rico's electric grid and promote economic recovery and growth following the devastation caused by Hurricane Irma and Hurricane Maria.

In addition, it is worth noting that rescinding the O&M Agreement would undo many of the benefits LUMA has been able to achieve to date in its capacity as operator of the T&D System. For example, virtually no permanent restoration projects had been submitted to FEMA before LUMA undertook the operation of the T&D System. Since Commencement Date, LUMA has successfully submitted more than 65 projects to FEMA. Further, LUMA has another 29 projects in the pipeline that are expected to be submitted to FEMA before 2022. Additionally, during their first 100 days, LUMA's Net Energy Metering Program and Distributed Generation Interconnection teams processed over 23,000 applications, seven times PREPA's historical monthly average. LUMA has also been able to make an electric connection in a Culebra community that had been without electric power for more than 15 years. These are just a few of the multiple achievements LUMA has had since June 1, 2021.

Question 3. On the LUMA Project Labor Agreement issue that was brought up, where LUMA has required of its contractors and subcontractors a Project Labor Agreement (PLA) modeled after its agreement with IBEW Union:

(a) Does P3 Authority have any involvement or authority in that process and with its effect to consumers and ratepayers as well the economic impact in the general reconstruction?

Answer. When the O&M Agreement was signed, LUMA stepped into PREPA's position in negotiating collective bargaining agreements including agreements with contractors and subcontractors for services to be provided in connection with the O&M Services. As such, LUMA was able to bring the experience and expertise of ATCO Ltd and Quanta Services, Inc. in negotiating similar contracts with unions to bear in its capacity as operator.

The P3 Authority was not involved in the negotiation between LUMA and the International Brotherhood of Electrical Workers, Local Union 222 ("IBEW") regarding the Project Labor Agreement ("PLA"). Per LUMA's representations to the P3 Authority and the Government of Puerto Rico, the main purposes of the PLA are to (1) stabilize wages, hours and working conditions to encourage close cooperation between the parties; (2) enhance cooperative effort for the timely completion of work without interruption or delay; (3) satisfy the need for a substantial number of workers with craft possessing skills and qualifications which are vital to succeed; (4) avoid undue delays in the completion of the construction work as the Contractors agree to not engage in lockout and IBEW agrees to not engage in strike, slow-down, or other disruptions or interferences.

(b) If the answer [is] it does, is there any involvement in a prior public participation process, or in reviewing impact on economic development reconstruction of such company decisions? If the answer is yes, then what would be the procedure for cases such as this?

Answer. See answer to 3(a) above.

(c) Has P3 reviewed the complaint of various private sector organizations, that this Agreement in effect extends LUMA's labor terms to the rest of the local private sector? Does that in any way violate the letter or spirit of the agreement or of the enabling law?

Answer. The P3 Authority is aware of the complaints raised by various sector organization and has met with their representatives in order to discuss their concerns. Per LUMA's representations to the P3 Authority and the Government of Puerto Rico, the PLA will only apply to new construction and maintenance of electrical transmission lines, distribution lines, catenary and trolley facilities, switch yards and substation in Puerto Rico on PREPA's property as specifically defined in the PLA. Further, the PLA will only apply to the following category of workers:

general foreman, foreman, journeyman lineman, heavy equipment operator, operator, cable splicer, groundman-truck driver, and apprentice lineman.

Question 4. Future Generation:

(a) What is the current status of the Renewable Energy and Storage RFPs?

Answer. The P3 Authority is not currently managing any RFPs for Renewable Energy and Storage. Those RFPs are currently managed by PREPA.

(b) What is the status of proposals for privatizing the legacy generation fleet?

Answer. The currently ongoing procurement process to delegate the operation and maintenance functions of the Legacy Generation Assets began with the launch of a request for qualifications to which 15 private parties responded.

The P3 Authority evaluated the statements of qualifications received from those private parties and submitted its analyses to the partnership committee established to oversee the process. The partnership committee short-listed eight private parties with best-in-class expertise and experience (the “Proponents”) to participate in the request for proposals (“Generation RFP”) phase. On November 10, 2020, the P3 Authority launched the Generation RFP phase with the issuance of the Generation RFPs to the Proponents.

Since the issuance of the Generation RFP, this process has advanced steadily. The P3 Authority has shared with Proponents a draft operation and maintenance agreement and held multiple videoconferences with Proponents to clarify certain business and legal elements of the agreement, as well as various regulatory features of the project in general. Currently, interested Proponents are conducting due diligence on the opportunity and engage on the draft contract.

The P3 Authority expects that a proponent will be selected by the end of December 2021.

Question 5. Is there any entity in Puerto Rico that has the legal power to unilaterally command the elimination or non-use of a system or a power plant, NOT due to imminent security/safety problems or for causes listed in the law and regulation, but simply as a matter of choice or policy?

Answer. Ultimately, the decision to eliminate or cease use of a system or power plant is a matter of public policy. As the island’s independent regulator, PREB is the entity with jurisdiction to implement the public policy in the energy sector and approves the IRP which establishes the energy generation sources. The O&M Agreement, in conjunction with the Puerto Rico Power Authority Act of 1941, Act 83-1941, requires that LUMA submit an IRP to the PREB, which must include, among other things, an evaluation of the existing electric power plants or facilities of PREPA that takes into account the improvements in the operations efficiency of plants, the useful life of existing plants, and the retirement date and decommissioning costs thereof. Once received, the PREB reviews the submitted IRP and issues findings and orders related to, among other things, the retirement date and decommissioning costs of existing plants.

The following document was submitted as an attachment to Mr. Fontanés’ responses. This document is part of the hearing record and is being retained in the Committee’s official files:

—Exhibit A: Agreements with Named Advisors

Available at page 12 in the following link:
<https://docs.house.gov/meetings/II/II00/20211006/114107/HHRG-117-II00-Wstate-FontansF-20211006-SD001.pdf>

The CHAIRMAN. Thank you very much, sir.

And let me now ask the Executive Director of the Central Office of Recovery, Reconstruction, and Resiliency, Mr. Manuel Laboy, for your comment, sir.

**STATEMENT OF MANUEL LABOY, EXECUTIVE DIRECTOR,
CENTRAL OFFICE OF RECOVERY, RECONSTRUCTION, AND
RESILIENCY (COR3), SAN JUAN, PUERTO RICO**

Mr. LABOY. Thank you. In the interest of time, if I may, I will skip several paragraphs of my written testimony.

Dear Chairman Grijalva, Ranking Member Westerman, Congresswoman González, and Members of Congress, in Puerto Rico, the devastation caused by Hurricanes Irma and Maria paved the way for a historic obligation of Federal funds from the public assistance program of the Federal Emergency Management Agency, FEMA, including approximately \$10.5 billion destined for permanent reconstruction work related to the Puerto Rico Electric Power Authority, PREPA. We expect a significant amount of funds from public assistance hazard mitigation measures and FEMA's Hazard Mitigation Grant Program, a total allocation of \$4 billion in Federal funding, for mitigation measures related to Hurricane Maria, of which about \$1 billion are expected to be assigned for PREPA projects.

As related to FEMA PA and hazard mitigation funding for Hurricane Maria, it is very important to point out that non-Federal cost share requirements will be covered by CDBG-DR or CDBG-MIT.

To manage this enormous sum of Federal monies and ensure not only adequate project execution, but full transparency, accountability, and compliance with applicable laws and regulations, the Government of Puerto Rico created the Central Office for Recovery, Reconstruction, and Resiliency, COR3, which, in turn, acts as the recipient of FEMA PA and hazard mitigation monies.

Furthermore, COR3's Executive Director also serves as the Governor's authorized representative. Accordingly, after the occurrence of a major disaster and subsequent Presidential declaration, FEMA awards PA and/or hazard mitigation funds to COR3 as a recipient, while COR3 enters into subaward agreements with subrecipients, and serves as a pass-through entity to provide funding to carry out part of the PA or hazard mitigation activities.

As recipient, COR3 is also responsible for providing technical assistance, and ensuring that subrecipient activities are carried out in full compliance with FEMA and other Federal, state, and local requirements. On the other hand, subrecipients are responsible for actual procurement and project execution, pursuant to applicable Federal, state, and local regulations, which in most cases mandate a full and open competition process.

The fact that LUMA is an agent of PREPA for disaster recovery has required for everyone involved to familiarize with the basic terms of this transaction at the O&M contract.

The qualified O&M agreement, where PREPA's transmission and distribution and other assets remain their own, is something that was consulted with FEMA and carefully carved as part of the P3 procurement and contracting process, inasmuch as they had to remain as PREPA assets for purposes of receiving the above-mentioned disaster recovery funding. Thus, PREPA remains the applicant and subrecipient of Federal funds before FEMA and COR3.

At this point, we are immersed in what is known as the post-award process, which requires individual project obligation before moving forward with actual construction work. To comply with FEMA policies for PA projects obligated under what is known as the FEMA Accelerated Award Strategy, or FAASt, LUMA and PREPA filed a joint 90-day work plan, which covers project execution for such period, and the work plan must be updated and filed every 90 days before FEMA and COR3, and all relevant parties frequently meet to discuss and resolve pending issues.

Although the FAASt \$10.5 billion obligation for PREPA occurred on September 24, 2020, the reality is that it only represents a fixed PREPA reconstruction work budget for said amount. Currently, only funds for architectural and engineering design services are authorized to be utilized for purposes of submitting scopes of work for FEMA review and approval. The aforementioned amount does not consider what could potentially be millions of dollars in additional funding for hazard mitigation measures, as allowed by the PA program under the Stafford Act.

We are currently working with FEMA, PREPA, and LUMA to address preconstruction disbursements, hazard mitigation evaluation and budget allocation for PREPA projects under the FAASt obligation, and several other issues surrounding this post-award process, including those related to the evaluation and compliance with FEMA Environmental and Historic Preservation requirements, which, in turn, concerns several Federal regulatory agencies.

At this stage, another key player, known as the Puerto Rico Energy Bureau, our independent state regulator for all energy-related matters, is deeply involved in the reconstruction process, inasmuch prior approval of every single project in the pipeline must be approved by the regulator to ensure consistency with applicable state laws and regulations.

While most damages caused by Hurricane Maria were on the transmission and distribution system, including buildings, posts, substations, transmission lines, and other assets, which is, in turn, represented in the distribution of the \$10.5 billion FEMA obligation for permanent work, there are also several projects to be funded under FEMA PA and hazard mitigation programs that will impact generation assets.

Furthermore, yet-to-be-completed obligations related to the 2020 earthquake disaster are sure to positively impact the generation side of PREPA's operations.

Our mission at COR3, as recipient and administrator of the FEMA PA and hazard mitigation funds, and our inherent responsibility over efficiency, compliance, and transparency of the Federal funds flowing to the subrecipients, is to provide all the technical assistance required for LUMA and PREPA, in furtherance of the obligation and execution of their recovery and reconstruction projects.

Current projections show that procurement and a number of impactful projects shall begin during 2022. Moving forward, we expect to continue improving disbursement processes and collaborating with all relevant parties and other Federal agencies to build

back a better, more resilient Puerto Rico energy infrastructure. Thank you.

[The prepared statement of Mr. Laboy follows:]

PREPARED STATEMENT OF MANUEL A. LABOY RIVERA, PE, MBA, COR3 EXECUTIVE DIRECTOR, GOVERNOR'S AUTHORIZED REPRESENTATIVE

I. INTRODUCTION

This country is no stranger to natural disaster chaos, having directly experienced massive storms such as Hurricane Katrina in 2005, Hurricane Sandy in 2012, and most recently Hurricane Ida during the summer of 2021, all of which impacted several jurisdictions in the contiguous United States. In Puerto Rico, the devastation caused by Hurricane Irma,¹ and even more so, Hurricane Maria,² both only a couple of weeks apart in September 2017, paved the way for a historic obligation of federal funds from the Public Assistance (PA) program of the Federal Emergency Management Agency (FEMA), currently set at over \$24 billion,³ and approximately \$9.5 billion of that amount is destined for reconstruction works related to the Puerto Rico Electric Power Authority (PREPA).⁴

The extent of federal aid being distributed to Puerto Rico, both during the emergency period after the impact of Hurricane Maria, and for purposes of permanent reconstruction work, is as historic as the destruction that preceded it, and just as the amount of PA program funding for Puerto Rico as a jurisdiction is the largest in the history of FEMA, so is PREPA's individual subrecipient obligation of funds for permanent work. We expect this amount to increase as hazard mitigation measures under the PA program are incorporated into PREPA reconstruction projects.

In addition to the abovementioned and yet to be seen hazard mitigation funding under the PA program, we expect a significant amount of funds from FEMA's Hazard Mitigation Grant Program (HMGP) total allocation of \$3 billion in federal funding for mitigation measures related to Hurricane Maria,⁵ of which about \$1 billion are expected to be assigned for PREPA mitigation works, including energy generation initiatives. It should be noted that while the PA program is focused on attending to damages caused by a disaster, HMGP funding is used to provide protection to undamaged parts of a facility or to prevent or reduce damages caused by future disasters.

II. THE NEED TO CREATE COR3 TO MANAGE THE RECOVERY PROCESS

To manage this enormous sum of federal moneys and ensure not only adequate project execution, but full transparency, accountability and compliance with applicable laws and regulations, the Government of Puerto Rico created the Central Office for Recovery, Reconstruction and Resiliency (COR3),⁶ which in turn acts as Recipient of FEMA PA and HMGP moneys. Furthermore, COR3 Executive Director also serves as the Governor's Authorized Representative for purposes of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act).⁷ Accordingly, COR3 has a prominent role in the recovery process, along with FEMA and each subrecipient, including municipalities, certain private non-profit entities, and state agencies and public corporations and instrumentalities, such as PREPA. After the occurrence of a major disaster and subsequent Presidential declaration, FEMA awards PA and/or HMGP funds to COR3 as Recipient, while COR3 enters into subaward agreements with subrecipients and serves as pass-through entity to

¹The major disaster declaration for Hurricane Irma is identified as FEMA-DR-4336-PR.

²The major disaster declaration for Hurricane Maria is identified as FEMA-DR-4339-PR.

³The PA program is authorized by Sections 406 (traditional) and 428 (alternate procedures) of the Stafford Act, 42 U.S.C. §§ 5172 and 5189f. PREPA PA projects are covered under Section 428 as per FEMA requirements.

⁴See Appendix 1. The federal cost share for Hurricane Maria permanent work obligations under the FEMA PA program, including the PREPA obligation, is set at 90%, and the corresponding non-federal cost share is set at 10%. The total PREPA PA obligation, including federal and non-federal share amounts, is set at \$10.5 billion. As will be discussed later on, the non-federal share for Hurricane Maria PA projects shall also be covered by federal funding.

⁵HMGP is authorized by Section 404 of the Stafford Act, 42 U.S.C. § 5170c. Cost-share requirements for HMGP consists of a 75% federal share and a 25% non-federal cost share. For Hurricane Maria, HMGP non-federal cost share requirements will be covered by federal funding, as further explained below.

⁶COR3 was created by Executive Order No. 2017-065, as subsequently amended, as a division of the Puerto Rico Public-Private Partnerships Authority (P3A).

⁷Pub. L. No. 100-707, 102 Stat. 4689.

provide funding to carry out part of the PA or HMGP activities. As Recipient, COR3 is responsible for providing technical assistance and ensuring that subrecipient activities are carried out in full compliance with FEMA and other federal, state, and local requirements. On the other hand, subrecipients are responsible for actual procurement and project execution pursuant to applicable federal, state and local regulations, which in most cases mandate a full and open competitive process.

After its inception, and as required by the federal government, COR3 contracted experienced disaster recovery professional firms to ensure that it had all necessary resources to manage a very complex recovery process, considering the magnitude of the damages caused by Hurricane Maria. These firms assisted with the development of a long list of policies and procedures that govern all of COR3's processes related to FEMA awards, known as the COR3 Disaster Recovery Federal Fund Management Guide, which is divided into 14 chapters and covers everything related to the PA process, from initial inspections, damage assessments, and project formulation and obligation, to reimbursement processes, compliance, fraud prevention and sub-recipient monitoring procedures, appeals and arbitrations, and the project closeout process. Notably, Chapter 7 of the Guide specifically covers the disbursement process between COR3 and subrecipients under the PA program, which was recently revisited to ensure a more streamlined and effective reimbursement review and validation process, while still complying with a 100% validation requirement as exclusively required by FEMA for Puerto Rico disaster recovery activities, which we further explain below. These policies and procedures were also required by the federal government for purposes of eventually transferring related FEMA processes to COR3.

Regarding disbursements, after Puerto Rico received a major disaster declaration for Hurricane Maria, FEMA implemented a manual drawdown process for eligible PA projects that restricted COR3 from exercising the responsibilities normally authorized for Recipients under the Stafford Act and the governing regulations.⁸ This was highly unusual and is only authorized by the applicable regulation if a Recipient is formally declared as high risk by FEMA, which was not the case of Puerto Rico. The manual drawdown process, referred to as the "270 process," required a detailed review by FEMA of the documents provided in support of a request for reimbursement ("RFR") prior to disbursing funds to a subrecipient. During the manual drawdown process, FEMA's validation review prior to reimbursement, entailed performing a 100% completeness review and a 20% compliance review prior to the approval of any disbursement. Even though FEMA was not conducting a 100% validation (completeness and compliance review), in order to eliminate the 270 process, which had proven to be lengthy and failed to address the cash-flow needs of the subrecipients, FEMA required Puerto Rico to implement a reimbursement process which required the performance of a 100% validation review (100% completeness and 100% compliance review) prior to any reimbursement. However, FEMA and COR3 came to an agreement that for low risk subrecipients Puerto Rico would be able to perform a 100% completeness review and expedite disbursement of no more than 75% of the RFR and then perform a 100% compliance review prior to reimbursing the remaining 25% of the RFR. This requirement was formalized in what was referred to as the 270 Agreement or 2019 Agreement, which became effective on April 1, 2019. Prior to this date, all reimbursements were reviewed and disbursed directly by FEMA.

As such, on April 1, 2019, Puerto Rico began performing the aforementioned review for low risk subrecipients. However, prior to disbursing any funds to high risk subrecipients, COR3 would have to perform a 100% validation review (100% completeness and 100% compliance review) prior to the disbursement of any funds. Nonetheless, on July 1, 2021, COR3 implemented a revised reimbursement policy wherein the completeness and compliance review are combined to be performed simultaneously, thereby considerably reducing the review time and therefore the rate in which funds are disbursed. Although this process still requires the performance of a 100% validation review prior to any disbursement, combining the completeness and compliance review has made the process much more efficient. Furthermore, we note that FEMA recently informed that the 2019 Agreement would be left without effect, thus granting a related petition from the Government of Puerto Rico requesting the same treatment as other U.S. jurisdictions and allowing for additional revisions to speed up COR3's reimbursement process and accelerate the reconstruction process.

For purposes of adequately tracking compliance with applicable policies, laws and regulations, FEMA implemented the Validate As You Go ("VAYGo") pilot program to test PA and certain other disaster grant expenditures for Hurricanes Harvey,

⁸See 44 C.F.R. Part 206 and 2 C.F.R. Part 200.

Irma, and Maria in response to appropriations act provisions and Office of Management and Budget guidance that agencies implement additional measures to identify and address improper payments for disaster programs expending more than \$10 million in any one fiscal year. As part of VAYGo, FEMA reviews project documentation for a sample of funds as they are drawn down by recipients and conducts testing to verify whether the project funding was appropriately expended by the subrecipient. One goal of VAYGo is to identify potential problems earlier, allowing FEMA and recipients—including PA recipients—to correct or mitigate issues earlier in the process instead of waiting until grant closeout. As informed by the FEMA, the primary goal of VAYGo is to test for ineligible costs, which can serve as a gateway for the agency to be on notice of issues of fraud, waste, or abuse in the PA program. FEMA's improper-payments-testing methodology tests payments from FEMA to PA recipients and recipients to subrecipients. VAYGo, however, looks to see whether the subrecipient properly expended funds. For FEMA's VAYGo team to successfully report a Recipient's expenditure of Federal funding has been proper, all documentation associated with the expended amount must be available for review by the VAYGO team.

In 2019, FEMA implemented the VAYGo program in Puerto Rico. To date, we have participated in two (2) VAYGo reviews for fiscal years 2018 and 2019 and have taken significant strides with subrecipients to validate most of the sampled disbursements. It should be noted that VAYGo audits for fiscal year 2019 mostly correspond to disbursements done directly by FEMA (as per the manual drawdown process that was previously discussed), while the entirety of the 2020 VAYGo process and any future audit will take into account that COR3 manages the reimbursement process. FEMA has informed that it intends for the VAYGo process to occur on a quarterly basis.

In response to Presidentially declared disasters, Congress may appropriate additional funding for the Community Development Block Grant (CDBG) Program as Disaster Recovery grants to rebuild the affected areas and provide crucial seed money to start the recovery process. Since CDBG Disaster Recovery (CDBG-DR) assistance may fund a broad range of recovery activities, the U.S. Department of Housing and Urban Development (HUD) can help communities and neighborhoods that otherwise might not recover due to limited resources. In Puerto Rico, the Department of Housing is the Recipient of these funds. As related to FEMA PA and HMGP funding for Hurricane Maria, it is very important to point out that non-federal cost share requirements under both programs, that is, the out-of-pocket money that the state and/or subrecipient must provide to receive federal assistance, will be covered by CDBG-DR or CDBG-MIT funds that had been previously allocated by Congress, also because of Hurricane Maria, as allowed by HUD.

III. LUMA AS AGENT OF PREPA FOR DISASTER RECOVERY PURPOSES

The reconstruction process of an already ailing and fragile PREPA electric power infrastructure, exacerbated by a government-wide bankruptcy process under Title III of the Puerto Rico Oversight, Management, and Economic Stability Act of 2016 (PROMESA),⁹ including PREPA, and a profound financial and economic crisis and, of course, the impact of devastating natural disasters, encompasses building back a better and more resilient Puerto Rico by making use of existing FEMA policies and procedures and the enactment of the Bipartisan Budget Act of 2018 (BBA).¹⁰ As the federal government is well aware, four (4) years after these disastrous hurricanes, these conditions not only still exist but have been further aggravated by the passing of two (2) additional Presidentially-declared major disasters, the 2020 seismic activity that impacted the southern region of Puerto Rico,¹¹ including important PREPA generation assets in the area where most of our island's energy generation takes place, and the global pandemic, health crisis and consequential economic issues caused by COVID-19.¹²

The above-mentioned numbers and the unsurmountable federal support received by our island are certainly significant, but the execution of reconstruction works that will benefit the over 3 million American citizens living in Puerto Rico are not without challenges that are also significant in nature. One of these challenges—although a positive one in terms of what the island needs for its short, medium and long-term recovery and sustainability of its energy infrastructure—is the public-private partnership (P3) transaction for the Operation and Maintenance (O&M) of

⁹ 130 Stat. 549, 48 U.S.C. § 2101 *et seq.*

¹⁰ Pub. L. No. 115-123, 132 Stat. 64.

¹¹ The major disaster declaration for the 2020 earthquakes identified as FEMA-DR-4473-PR.

¹² The major disaster declaration for COVID-19 is identified as FEMA-DR-4493-PR.

PREPA's Transmission and Distribution (T&D) assets and other customer-centric services between the Government of Puerto Rico,¹³ through the Puerto Rico Public Private-Partnerships Authority (P3A), PREPA, and a consortium of two well-known and reputable companies who are experts in the energy sector, known as LUMA Energy LLC.¹⁴ Although more details of the O&M transaction, including its robust procurement process, and how it affects the daily operations of PREPA and its long list of residential and commercial customers, will be shared by P3A's Executive Director for the benefit of this Committee, it is important to mention that for matters covered in the qualified O&M agreement—which includes managing a capital improvement plan and budget funded with disaster recovery moneys—and before FEMA and COR3, LUMA acts as an agent, on behalf of PREPA.

The fact that LUMA is an agent of PREPA for disaster recovery purposes is a novelty and has required for everyone involved in the reconstruction process to familiarize with the basic terms of the O&M transaction, even before LUMA took over as PREPA's T&D operations on June 1, 2021. The qualified O&M agreement, where PREPA's T&D and other assets remain their own, is something that was consulted with FEMA and carefully carved as part of the P3 procurement and contracting process inasmuch they had to remain as PREPA assets for purposes of receiving the above-mentioned disaster recovery funding. Thus, even now, PREPA remains the applicant and subrecipient of FEMA funds before said federal entity and COR3.

Among other conditions precedent prior to formally commencing operations on such date, LUMA had to prepare a procurement manual for all purchases to be made by LUMA as agent of PREPA, including those to be made with federal funds, which in turn had to be approved by P3A and COR3, and consequently acknowledged by the PREPA Board of Directors. Although not a party to the O&M agreement, FEMA and the Office of the Inspector General of the Department of Homeland Security also reviewed the procurement manual for consistency with federal procurement standards. After June 1, 2021, and LUMA having formally entered the playing field as agent of PREPA, the private consortium is now responsible for planning and executing recovery and reconstruction projects on behalf of PREPA as subrecipient, and LUMA's Manual will govern the procurement processes for FEMA-funded projects carried out by LUMA in accordance with its responsibilities as operator of the T&D system under the O&M agreement. A crucial part of the procurement manual effectively attends to any actual or potential conflict of interest when a LUMA affiliate company participates in any procurement process. In these cases, procurement must be done externally, and P3A and COR3 intervene to make sure guidelines are followed and potential organizational conflicts of interest are avoided.

IV. STATUS OF LUMA/PREPA RECOVERY PROJECTS

At this point, we are immersed on what is known as the post-award process, which requires individual project obligation before moving forward with actual construction work. In order to comply with FEMA policies for PA projects obligated under what is known as the FEMA Accelerated Award Strategy (FAASt), LUMA and PREPA filed a joint 90-day Workplan which covers project execution for such period, and the workplan must be updated and filed every 90 days before FEMA and COR3.¹⁵ In addition, to comply with FAASt project guidelines, LUMA, PREPA, COR3 and FEMA hold weekly and monthly meetings at all levels of their respective organizations, for purposes of ensuring alignment, identifying and resolving issues, and overall speeding the recovery of our energy system.¹⁶ Furthermore, the government parties are constantly involved in productive discussions with LUMA executives and other state entities as part of the Steering Committee created by Governor Pedro R. Pierluisi under Executive Order No. 2021-012 to ensure the successful

¹³We note that a separate competitive process is currently being conducted by P3A for a similar transaction concerning PREPA's energy generation assets and operation.

¹⁴LUMA is a joint venture between U.S. based Quanta Services, Inc., and ATCO Ltd., which is based in Canada. In addition, and Innovative Emergency Management, Inc. (IEM), an expert in disaster recovery, serves as LUMA contractor for such purposes and appeared as part of the consortium during the competitive process for the T&D O&M contract.

¹⁵In addition, and although not required by FEMA nor COR3, PREPA presented a 10-year Infrastructure Plan, which was last updated as of June 2021. We further note that although IEM is a COR3 contractor for HMGP projects, we use a separate contractor for matters related to PREPA as to avoid any potential or actual conflict of interest.

¹⁶As to the recurrence of the meetings, we note that on July 29, 2021, COR3 sent a letter to FEMA leadership suggesting rethinking the schedule to promote more efficient discussions and avoid work interruption and discussing other concerns regarding the FAASt post-obligation process.

implementation of the O&M agreement and transition of T&D, customer support and other services from PREPA to LUMA. Also, relevant state entities, including COR3, P3A and PREPA, continuously hold meetings with Governor Pierluisi regarding reconstruction works, and with other members of the cabinet and the Office of the Governor, as part of the Reconstruction Council created by the Governor under Executive Order No. 2021-011.

As would have been the case even if LUMA were not in the equation, at COR3 we are fully focused on project obligation and execution. However, LUMA and their T&D expertise, along with disaster recovery in-house and contractor support, are poised to smooth the edges of an incredibly complex and long-term project. Although the FAAsT \$10.5 billion obligation for PREPA occurred on September 24, 2020,¹⁷ the reality is that it only represents a fixed PREPA reconstruction work budget for said amount based on an innovative statistical sampling method. Currently, only funds for architecture and engineering design services (A&E) are authorized to be utilized, for purposes of submitting a Scope of Work (SOW) for FEMA review and approval. Notably, the aforementioned amount does not consider what could potentially be millions of dollars in additional funding for hazard mitigation measures as allowed by the PA program under the Stafford Act, and such measures will be part of each project SOW to be developed. Accordingly, we are currently working with FEMA, PREPA and LUMA to address preconstruction disbursements, hazard mitigation evaluation and budget allocation for PREPA projects under FAAsT, and several other issues surrounding the FAAsT post-award process and what is known as the FEMA Post-Fixed Cost Estimate Obligation Course of Action Guide, which hinder program and project execution, such as meeting necessity and recurrence, concerns regarding evaluation and compliance with Environmental and Historic Preservation (EHP) (which involves various federal agencies), subrecipient identification of all locally adopted construction codes and standards and/or FEMA-approved industry standards instead of allowing design firms to provide said information, A&E reimbursement processes, and flooding zone code requirements in light of the fixed budget.

The fourth and latest iteration of the 90-day Workplan was submitted by LUMA and PREPA on September 23, 2021. While PREPA is still in charge of recovery projects in the Generation and Dams, Hydro, and Irrigation asset categories, LUMA is responsible for projects in the Transmission, Distribution, Substations, IT/Telecom, Buildings, and Environmental asset categories (T&D Projects). Firms that will provide A&E have already been procured and selected, and LUMA and PREPA are working on the SOWs to be submitted for COR3 and FEMA review, a process that has been continuously emphasized by COR3 and FEMA leadership in order to move forward with projects.

Furthermore, at this stage another key player, known as the Puerto Rico Energy Bureau (PREB), our state (and PREPA's) regulator for all energy-related matters, is deeply involved in the reconstruction process inasmuch prior approval of every single project in the pipeline must be approved by the regulator to ensure consistency with applicable laws and regulations, most notably the Integrated Resource Plan (IRP) and its clean and renewable energy targets, prior to formally submitting each project to COR3 and FEMA for obligation.¹⁸ Certainly, prior PREB approval is also relevant for HMGP projects. As such, careful coordination must take place between LUMA, PREPA, COR3 and the PREB to ensure that projects are compliant from an IRP and regulatory perspective and expeditiously approved.

As of today, the PREB has approved 112 projects, for an amount of over \$8 billion, while 9 other projects representing an amount of \$100 million are currently submitted and remain under PREB evaluation.¹⁹ On the other hand, there is currently another batch of 45 projects that will be soon submitted by LUMA/PREPA to the PREB, totaling \$800 million. In addition, there are several projects in A&E development, including 15 T&D projects, and another 18 T&D projects are projected to kick-off development in mid-October; 2 water asset projects; and 2 generation projects. While most the damages caused by Hurricane Maria were to the T&D system—including buildings, posts, substations, transmission lines, and other assets—which is in turn represented in the distribution of the \$10.5 billion FAAsT obligation for permanent work, there are also several projects to be funded under FEMA PA and HMGP programs that will impact generation assets. Furthermore, yet to be completed project formulation and obligations related to the 2020 earthquakes disaster and the damages caused to the important PREPA generation plant

¹⁷ Project Worksheet No. 6099 under FEMA-DR-4339-PR.

¹⁸ PREB approves projects via resolutions & orders that are publicly available on the internet.

¹⁹ See Appendix 2.

known as Costa Sur are sure to positively impact the generation-side of PREPA's operations.

Specifically, as to projects to be funded under the HMGP, we are currently working with PREPA, FEMA and the PREB to develop two generation projects (San Juan area Generation and Simple Cycle Turbines) that had already been approved by FEMA but are still facing some regulatory concerns, and other projects such as seismic retrofit for and Early Warning System for PREPA-owned dams, as well as a number of alternate project submissions in the pipeline. In relation to the foregoing, the U.S. Department of Energy is currently conducting a technical study for purposes of assisting Puerto Rico's clean and renewable energy efforts, with a focus on resiliency and hurricane preparedness, which will help align HMGP projects with federal and state regulations. The current deadline to submit HMGP proposals related to Hurricane Maria is October 31, 2021, but the Government of Puerto Rico requested a time extension to allow for the DOE study to be completed and taken into account for energy related HMGP projects and to ensure that available funding is maximized.

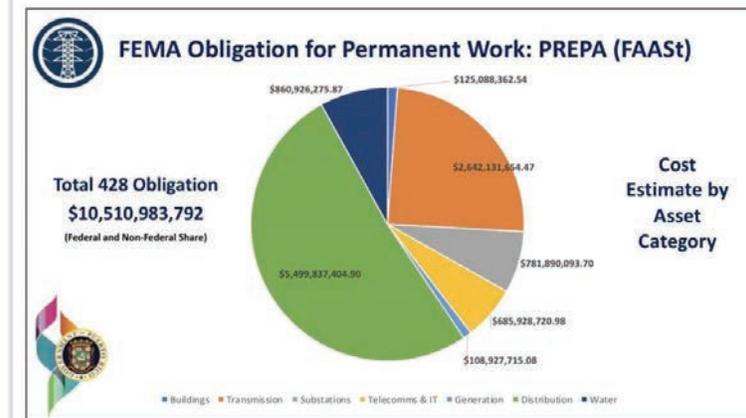
V. NEXT STEPS FOR THE PREPA RECOVERY PROCESS

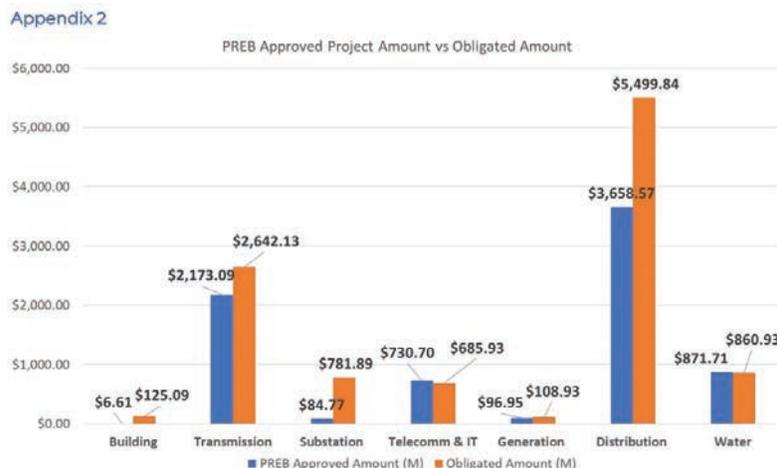
Our mission at COR3, as Recipient of FEMA PA and HMGP funds and our inherent responsibility over compliance and transparency of the federal funds flowing to subrecipients, is to provide all required technical assistance to LUMA and PREPA in furtherance of the obligation and execution of their recovery and reconstruction projects, which will allow for a better, more resilient Puerto Rico, a stable energy system, and the opportunity to lower dependency on fossil fuels, reduce costs and create better economic opportunities for our citizens, all of which are goals that we are confident are shared by FEMA, this Congress, and the rest of the federal government.

Current projections show that procurement and a number of impactful projects should begin during 2022. Moving forward, we expect to continue improving disbursement processes and collaborating with all relevant parties and other federal agencies to build back a better, more resilient Puerto Rico critical energy infrastructure. As authorized by the BBA, we expect LUMA and PREPA to use available FEMA tools such as Improved, Alternate and Consolidated Projects, which will allow LUMA and PREPA to maximize available PA funding and invest in projects that are forward-looking and which effectively mitigate any future disasters, are more efficient and environmentally and climate change conscious, and allow for long-term economic growth and job creation.

On behalf of the entire COR3 team, we thank Congress and the U.S. Government for their continued support toward a better life for everyone in Puerto Rico.

Appendix 1





QUESTIONS SUBMITTED FOR THE RECORD TO MANUEL A. LABOY RIVERA, PE, MBA,
COR3 EXECUTIVE DIRECTOR, GOVERNOR'S AUTHORIZED REPRESENTATIVE

Questions Submitted by Representative González-Colón

Question 1. About FEMA Projects:

(a) *What have been the major problems with getting FEMA obligations flowing?*

(i) *Has there been any special difficulty or challenge with knowing what FEMA considers a completed Scope of Work submission?*

(ii) *How does the status of PREPA projects compare with that of COR3-related projects in general?*

(iii) *Are there any actions you would recommend to accelerate FEMA project approval?*

(b) *Do we know and can you provide us what are the current timelines for submitting project Scope of Work documentation to FEMA?*

Answer. The Public Assistance ("PA") program of the Federal Emergency Management Agency ("FEMA") works on a reimbursement basis. Ordinarily, once a project has gone through all steps of the FEMA National Delivery Model and is thus considered as "obligated" by FEMA, the subrecipient may present a Request for Reimbursement ("RFR") before COR3 in relation to non-federal funds that have already been expended by the subrecipient with regards to the obligated project. Thereafter, after a comprehensive evaluation of compliance with all applicable federal, state, and local laws and regulations, COR3 approves, partially approves, denies, or requests additional information to validate the RFR, as the case may be.

In the case of the Puerto Rico Electric Power Authority ("PREPA"), as related to the damages caused by Hurricane Maria in 2017 (identified as FEMA-DR-4339-PR) and subsequent presidential major disaster declaration, an initial project obligation was made using an innovative statistical sampling method known as the FEMA Accelerated Award Strategy ("FAASt").¹ The purpose of the FAASt initiative was to allow PREPA and other subrecipients¹ to perform a thorough evaluation of their facilities and develop a master plan to rebuild while better addressing the needs of the people of Puerto Rico, instead of just restoring them to pre-disaster conditions. Given that PREPA provides critical services as defined in Section 406(a)(3)(B) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 ("Stafford

¹The other subrecipients under the FAASt initiative are the Puerto Rico Department of Education (PRDE), and the Puerto Rico Aqueduct and Sewer Authority (PRASA).

Act”)² projects are meant to include the disaster-damaged components to restore the function of the facility or system to industry standards, without regard to its pre-disaster condition, and to restore components not damaged by the disaster when necessary, as authorized by Section 20601 of the Bipartisan Budget Act of 2018 (“BBA”).³ Furthermore, the FAAS strategy was meant to reduce the administrative burden on all parties and expedite the FEMA project formulation process.

To execute the FAAS strategy, FEMA established that its Cost and Analysis Validation team (“CAV Team”) would be in charge of developing the Statistical Sampling Methodology (“SSM”) to reduce the number of sites requiring inspections, Damage, Description and Dimensions (“DDD”), scopes of work (“SOW”), and cost estimates, all of which are traditional components of a FEMA PA Project Worksheet. The SSM provided FEMA with a robust statistical approach to expeditiously generate reliable cost estimates for entire sample populations, to formulate the fixed cost estimate (“FCE”) required under Section 428 (Alternative Procedures) of the Stafford Act and the master recovery budget for PREPA.⁴ As with other Section 428 projects, PREPA projects under FAAS can be used toward a Consolidated Project, an Improved Project or an Alternate Project as allowed under applicable FEMA policies and procedures. In the case of Alternate Projects, they must still include a critical service and must be constructed to an approved industry standard. FEMA will evaluate the proposed use for reasonableness to ensure funds are used in an appropriate manner, and with the intent to improve the resiliency of such critical services.

Under the FAAS initiative, a main, single project obligation was initially done by FEMA on September 24, 2020, based on the SSM of damaged PREPA facilities throughout the island, which resulted in a total, fixed project amount of approximately \$10.5 billion, of which \$9.5 billion correspond to the federal share,⁵ with a \$1 billion non-federal cost share requirement.⁶ The foregoing amount allows PREPA to repair damages related to the following types of facilities:

- buildings (101)
- substations/transmission centers (404)
- distribution lines/conductors (3,249 miles overhead & underground)
- streetlights (342,569)
- transmission lines (3,254 circuit miles)
- poles and hardware (397,843)
- transformers (18,812)
- mega generators (4)
- soil stabilization (708 locations)
- telecommunications sites (49)
- generation plants (9)
- Black Start generators (4)
- sediment removal (from 11 reservoirs)
- hydroelectric power plants (10)
- dams (19)
- irrigation channels (9)
- water conveyance systems (7)
- telecommunications infrastructure

²Pub. L. No. 100-707, 102 Stat. 4689.

³Pub. L. No. 115-123, 132 Stat. 64. See also FEMA Recovery Policy FP-104-009-5 Version 2 (BBA), Implementing Section 20601 of the 2018 Bipartisan Budget Act through the Public Assistance Program.

⁴The PA program is authorized by Sections 406 (traditional) and 428 (alternate procedures) of the Stafford Act, 42 U.S.C. §§ 5172 and 5189f. PREPA PA projects are covered under Section 428 as per FEMA requirements.

⁵PREPA allocated \$193,746,436 of its anticipated insurance proceeds as part of the permanent work Project Worksheet (PW) under the FAAS strategy, amount which must be subtracted from the total fixed cost estimate of \$10,704,730,227.54 as per FEMA requirements. Therefore, the exact amount of federal funding for PREPA under the PA program, as per the FAAS obligation, is \$9,459,885,412.39.

⁶Notably, the non-federal cost share requirement for PA permanent work related to Hurricane Maria, including PREPA, will be covered by Community Development Block Grant—Disaster Recovery (CDBG-DR) funds as allowed by the U.S. Department of Housing and Urban Development (“HUD”). The Puerto Rico Department of Housing (“PRDOH”) is the recipient of CDBG-DR funds assigned to Puerto Rico after Hurricane Maria.

The cost estimate per sector is divided as follows:

1. Buildings—\$ 125,088,362.54
2. Transmission—\$ 2,642,131,654.47
3. Substations—\$ 781,890,093.70
4. Telecommunications and Information Technology—\$ 685,928,720.98
5. Generation—\$ 108,927,715.08
6. Distribution—\$ 5,499,837,404.90
7. Water Assets—\$ 860,926,275.87

Given that these categories are allocated in a single PW obligation, LUMA/PREPA have the flexibility to use the funds as needed. In other words, the funds can be transferred from one sector to another, with prior approval from COR3 and/or FEMA, by using available FEMA tools for Section 428 projects as outlined above.

FEMA established a period of performance for five (5) years from the date of PW obligation, as set forth in 44 CFR 206.204(c). However, unlike regular PA projects, FAASSt projects would not be processed through the FEMA National Delivery Model nor the Atlantic Consolidated Resource Center (“CRC”) to develop the cost estimates. Thus, we are currently immersed in what is known as the post-award process, which requires individual subproject obligation under the FEMA National Delivery Model before moving forward with actual construction work. In order to obligate such individual projects, on November 18, 2020, FEMA developed a Post-Fixed Cost Estimate Obligation Course of Action Guide (COA Guide), for purposes of defining the procedures to develop individual subprojects. Among other things, the COA Guide requires PREPA to submit a 90-day Workplan—to be updated every 90-day period—and to hold monthly meetings and weekly working sessions with FEMA, COR3 and LUMA Energy, LLC (“LUMA”), to discuss the workplan and subprojects in the pipeline. Furthermore, PREPA must specify locally adopted construction codes and standards and/or FEMA-approved industry standards to be used and describe how they are going to be incorporated in the construction project.

In addition, the COA Guide requires subrecipients to submit a proposed SOW for each facility, for the review of FEMA and COR3. This is particularly important because SOWs for subprojects must be submitted prior to commencing any construction works, to ensure that there is sufficient time for FEMA to complete PA eligibility assessments and Environmental and Historic Preservation (“EHP”) compliance reviews. However, to prepare a SOW, architecture and engineering (“A&E”) design services must be procured and relevant studies and designs must be conducted for each subproject. At this juncture we must note that the abovementioned \$10.5 billion budget does not take into account what could represent millions in potential additional funding from mitigation measures under Section 406 of the Stafford Act, inasmuch these measures would be part of the SOW of each subproject. To date, we are working with FEMA to agree upon a standard methodology to incorporate Section 406 mitigation works in proposed SOWs.

As can be inferred from the discussion above, FAASSt projects differ from traditional PA project obligation in that the FAASSt obligation only represents a master recovery budget, as every subproject must be thereafter obligated following FEMA’s National Delivery Model and the COA Guidelines. Furthermore, in the case of PREPA, the road to subproject obligation has an additional complexity, that is, all projects must count with prior approval from the Puerto Rico Energy Bureau (“PREB”), our independent state energy industry regulator, prior to submitting to FEMA and COR3. Among other things, the PREB evaluates projects for compliance with what is known as the Integrated Resource Plan (“IRP”), a comprehensive document that was approved by the PREB pursuant to state Act No. 17-2019, as amended, known as the Puerto Rico Energy Public Policy Act, with ample participation from the public which sets forth a roadmap for meeting aggressive renewable energy generation targets for the next couple of decades. Thus, proper alignment must be found between all relevant parties—including FEMA, COR3, PREB, PREPA, and as of June 1, 2021, LUMA—in order to move forward with all necessary approvals and commencing the construction phase of a specific PREPA subproject.

COR3 is engaged in continuous discussions with FEMA, PREPA, LUMA, and the PREB for purposes of accelerating subproject formulation, obligation and execution. On July 29, 2021, we sent a letter to FEMA expressing various concerns with the FAASSt post-obligation process and the COA Guide.

Although FEMA has not yet responded, we have had multiple discussions and have made progress after the July 29, 2021 letter, most notably with the Puerto Rico Aqueduct and Sewer Authority (“PRASA”). However, there is still areas of

opportunity that are under discussion with FEMA to continue improving the FAASt post-obligation process.

Considering all of the above, the process for formulating and obligating each specific PREPA project under the general FAASt obligation is as follows. The first step is for LUMA (as agent of PREPA for Transmission & Distribution and related assets) or PREPA (for generation-side assets) must first submit a project before the PREB. After the PREB considers and approves a project, the project description is submitted by LUMA/PREPA to COR3 and FEMA, and the project is created and assigned a number on Grants Portal, FEMA's proprietary digital system which must be used by subrecipients during the project formulation process. Thereafter, project A&E development starts, with support from COR3 and FEMA for purposes of policy and program eligibility guidance. Once the minimum required A&E percentage is met for a project, LUMA/PREPA may submit the "Detailed SOW" into Grants Portal for Environmental and Historic Preservation (EHP); Cost scoping; 406 Hazard Mitigation proposal; and Regular, Improved or Alternate project review.

As soon as the steps outlined in the preceding paragraph are completed, FEMA obligates the project, and only then is the subrecipient authorized to initiate construction activities as per the current COA Guide. As mentioned earlier, there are several issues surrounding SOW development that have a significant impact on subproject obligation, which in turn represent construction delays.

Notwithstanding the above, as of October 14, 2021, LUMA expects to submit detailed SOWs before COR3 and FEMA as per the timeline set forth in Appendix 1. As for PREPA, they expect to submit detailed SOWs as per the timeline set forth in Appendix 2.

Question 2. While we work toward the 100% renewables target and even once it is in effect, is it not true that on-demand base and peak capacity is still necessary to have? Can storage batteries alone assure this?

(a) Can the generation side provide resiliency in case of another catastrophic hurricane, without installation of on-demand climate-independent units such as LNG generators?

(b) FEMA funds include \$2.4 Billion for Transmission and \$4.9 Billion for Distribution.

(i) The recipient of these funds is PREPA as the public owner of the assets, but LUMA is the operator of T&D: how is the process expected to be managed to minimize bureaucratic steps?

(ii) Who is going to answer for maximizing the use of those funds to build a system that people can trust?

Answer. As mentioned in our response to Question No. 1 above, the PREB, as our state energy industry regulator, must evaluate and approve each LUMA/PREPA subproject prior to submitting to FEMA and COR3. Among other things, the PREB evaluates projects for compliance with the IRP and state Act No. 17-2019 and the IRP, which set forth the mandate for renewable energy targets.

As Recipient of FEMA PA and HMGP grants, COR3's responsibilities are limited to providing technical assistance for ensuring that subrecipient activities are carried out in full compliance with FEMA PA and HMGP program requirements, and other federal, state, and local laws and regulations. Any technical questions related to the on-demand base, peak capacity, and battery storage, and any other similar questions of technical nature, should be addressed by LUMA, PREPA, or any other party with the required technical expertise in energy utilities and projects.

A very relevant party with technical expertise in the energy sector is the U.S. Department of Energy ("DOE"), who is currently working on a study focused on feasible alternatives to the 400 MW Combined Cycle HMGP project in Palo Seco, to serve load when cross-island transmission lines are unavailable after a disaster or other event that compromises the energy grid. This study encompasses three major efforts: defining threats and needs; evaluating the capacity of potential for alternative generation and creating candidate scenarios, including Liquefied Natural Gas ("LNG"); and finding optimized energy generation portfolios which maximize priority metrics. Once this portfolio is available, COR3 will be able to determine which alternatives comply with HMGP requirements for resiliency, mitigating future blackouts in the northern area of the island, and which has a Benefit-Cost Analysis (BCA) greater than one (1).

As explained in our written statement and testimony, PREPA's recovery process is unique in that additional key players are engaged in the process. In addition to prior approval from the PREB, we must also consider the particularities of the public-private partnership ("P3") transaction for the Operation and Maintenance

(“O&M”) of PREPA’s Transmission and Distribution (T&D) assets and other customer-centric services between the Government of Puerto Rico,⁷ through the Puerto Rico Public Private-Partnerships Authority (“P3A”), PREPA, and a consortium of two well-known and reputable companies who are experts in the energy sector, known as LUMA Energy LLC.⁸ After June 1, 2021, the date LUMA formally took over PREPA’s T&D operations, the private entity also acts as PREPA’s agent for recovery purposes, including those related to FEMA and COR3. As per the qualified O&M agreement, PREPA’s T&D and other assets remain their own, which is something that was consulted with FEMA and carefully carved as part of the P3 procurement and contracting process inasmuch they had to remain as PREPA assets for purposes of receiving PA and HMGP disaster recovery funding from FEMA. Thus, even now, PREPA remains the applicant and subrecipient of FEMA funds before said federal entity and COR3, even if LUMA is an agent for T&D and other related non-generation assets.

In relation to its responsibilities as agent of PREPA for recovery purposes, LUMA had to prepare a procurement manual for all purchases to be made by LUMA as agent of PREPA, including those to be made with federal funds, which in turn had to be approved by P3A and COR3, and consequently acknowledged by the PREPA Board of Directors. Although not a party to the O&M agreement, FEMA and the Office of the Inspector General of the Department of Homeland Security also reviewed the procurement manual for consistency with federal procurement standards. After June 1, 2021, and LUMA having formally entered the playing field as agent of PREPA, the private consortium is now responsible for planning and executing recovery and reconstruction projects on behalf of PREPA as subrecipient, and LUMA’s Manual will govern the procurement processes for FEMA-funded projects carried out by LUMA in accordance with its responsibilities as operator of the T&D system under the O&M agreement. A crucial part of the procurement manual effectively attends to any actual or potential organizational conflict of interest when a LUMA affiliate company participates in any procurement process, and any mitigation plans to avoid such conflicts must be approved by P3A or COR3 prior to implementation.

It is important to note that all FEMA PA and HMGP requirements—including FAASt requirements such as the 90-day workplan and frequent meetings required under the COA Guidelines—are applicable to all subrecipients, including PREPA, and regardless of whether LUMA is involved in the equation or not. Therefore, when acting as agent of PREPA for recovery purposes, LUMA must comply with every rule that would otherwise be applicable to PREPA as subrecipient. In this sense, the O&M transaction and LUMA’s role as agent does not add any additional bureaucracy to the recovery process. However, as outlined in our response to Question No. 1 above, COR3 has identified several issues surrounding the FAASt post application process, and is continuously engaged with FEMA, PREPA, LUMA and the PREB to find opportunities to make the recovery process more efficient and providing technical assistance, while complying with applicable laws and regulations, and promoting full accountability and transparency in the use of federal funds.

COR3 was created after Hurricane Maria to manage FEMA PA and HMGP moneys, and ensure not only adequate project execution, but full transparency, accountability and compliance with applicable laws and regulations.⁹ Furthermore, COR3 Executive Director also serves as the Governor’s Authorized Representative for purposes of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act).¹⁰ Accordingly, COR3 has a prominent role in the recovery process, along with FEMA and each subrecipient, including PREPA. After the occurrence of a major disaster and subsequent Presidential declaration, FEMA awards PA and/or HMGP funds to COR3 as Recipient, while COR3 enters into subaward agreements with subrecipients and serves as pass-through entity to provide funding to carry out part of the PA or HMGP activities. As Recipient, COR3 is responsible for providing technical assistance and ensuring that subrecipient activities are carried out in full compliance with FEMA and other federal, state, and local requirements. On the other hand, subrecipients are responsible for actual procurement and

⁷We note that a separate competitive process is currently being conducted by P3A for a similar transaction concerning PREPA’s energy generation assets and operation.

⁸LUMA is a joint venture between U.S. based Quanta Services, Inc., and ATCO Ltd., which is based in Canada. In addition, and Innovative Emergency Management, Inc. (IEM), an expert in disaster recovery, serves as LUMA contractor for such purposes and appeared as part of the consortium during the competitive process for the T&D O&M contract.

⁹COR3 was created by Executive Order No. 2017-065, as subsequently amended, as a division of the Puerto Rico Public-Private Partnerships Authority (P3A).

¹⁰Pub. L. No. 100-707, 102 Stat. 4689.

project execution pursuant to applicable federal, state and local regulations, which in most cases mandate a full and open competitive process.

As Recipient and administrator of PA and HMGP grants, COR3 is responsible for reimbursements and 100% validation (completeness and compliance) thereof, audits (including FEMA Validate As You Go (VAYGo)), subrecipient monitoring, and the closeout process. During all of these steps, COR3 provides technical assistance to ensure subrecipients are aware of and comply with all program requirements, to minimize risk and avoid de-obligations.

Question 3. Do the terms for the Obligation of the FEMA funds in any way compel any of the entities that they must or must not install one or another form of generation? That is, does the FEMA funding in any way mandate preference for installing renewables or LNG units, or conversely or forbid it?

Answer. The FEMA funds under COR3's purview, specifically, funds derived from the PA and HMGP programs, are different in nature. On one hand, PA funds are tied to damages suffered by facilities of a subrecipient as a consequence of a major disaster declaration. Thus, generally, PA funds are used to restore damaged facilities to their pre-disaster condition. In PREPA's case, since it provides critical services as defined in the Stafford Act, the BBA authorizes PREPA (and LUMA, as its agent) to include the disaster-damaged components of a facility to restore the function of the facility or system to industry standards, without regard to its pre-disaster condition, and to restore components not damaged by the disaster when necessary. This way, and through the use of FEMA tools available for projects formulated under the Alternative Procedures set forth in Section 428 of the Stafford Act, through careful planning PREPA can maximize available (and capped, save for 406 hazard mitigation funding) PA funding under the FAASt initiative by taking advantage of Improved, Alternate or Consolidated project mechanisms, to effectively build back a better, more resilient energy infrastructure for Puerto Rico. It should be noted that when using these mechanisms, which imply redistribution of available capped funds, PREPA must make sure that there is enough money left to attend to all damaged facilities identified as part of the FAASt SSM, for purposes of complying with FEMA requirements.

On the other hand, after the occurrence of a major disaster and subsequent Presidential declaration, HMGP may be authorized under Section 404 of the Stafford Act.¹¹ Generally, while PA is tied to damaged facilities, HMGP funds are used toward long-term and cost-effective mitigation measures that reduce the risk of loss of life and property from future disasters, regardless of whether the facility was damaged or not.¹² HMGP may fund projects for structure elevation, floodwater prevention, structural and utility retrofits, slope stabilizations, drainage improvements, construction of safe rooms, and emergency power generators for critical facilities such as fire stations, hospitals, and water and sewer treatment facilities, and green infrastructure projects, among other mitigation measures as allowed under applicable FEMA guidance and regulations. Specifically, as to PREPA projects to be funded under the HMGP, we are currently working with PREPA, FEMA and the PREB to develop two generation projects (San Juan area Generation and Simple Cycle Turbines) that had already been approved by FEMA but are still facing some regulatory concerns, and other projects such as seismic retrofit for and Early Warning System for PREPA-owned dams, as well as a number of alternate project submissions in the pipeline. As with PA projects, all PREPA/LUMA HMGP projects must also count with prior approval from the PREB pursuant to Act No. 17-2019 and the IRP.

With regards to implementation of renewable energy sources or other, cleaner alternatives for our current diesel backed PREPA generators, such as LNG, it is imperative to reiterate that state Act No. 17-2019 and the IRP, which set forth the mandate for renewable energy targets, are applicable to PREPA and, thus, also to LUMA. As such, regardless of FEMA or other federal statutes or regulations that may be applicable, state law itself mandates PREPA to incorporate renewables and meet aggressive targets toward a completely renewable energy power grid by the year 2050. Precisely, this is the reason why PREPA/LUMA recovery projects must first be approved by the PREB.

¹¹ 42 U.S.C. §5170c. Current cost-share requirements for HMGP consists of a 75% federal share and a 25% non-federal cost share. For Hurricane Maria, HMGP non-federal cost share requirements will be covered with CDBG-MIT funds through the Global Match Program.

¹² Damaged facilities or components thereof should take advantage of Section 406 Hazard Mitigation measures and funding. COR3 works with PREPA and other subrecipients to maximize available funding under both PA and HMGP.

In addition, as mentioned before, the DOE is conducting a study that shall, among other things, help PREPA and the PREB to determine whether transitioning to LNG at this point in time would be beneficial in the long run for renewable energy efforts, which would impact PA and HMGP projects in the pipeline. The fact that the DOE is conducting this study to help Puerto Rico in the reconstruction process while achieving renewable energy targets should not surprise anyone, given the strong public policy of President Biden's Administration toward renewable energy and initiatives to tackle climate change.¹³ Furthermore, and although not strictly required, FEMA fosters climate change adaptation in their policies and procedures. These, tied with Act No. 17-2019, IRP and other PREB requirements, make a strong case for renewable and clean energy implementation during the PREPA recovery process.

Question 4. Is LUMA expected or required to (and if so, have they) provide you an estimated impact regarding increased labor cost from the proposed PLA with the IBEW and how it affects the original Reconstruction cost estimates prepared by PREPA as to skilled labor infrastructure reconstruction and ability to comply with FEMA's programs in place for revitalizing local enterprises post Hurricane Maria?

Answer. PREB requires LUMA and PREPA to present cost estimates for consideration and approval of projects. Furthermore, as per FEMA requirements, SOW development must include cost estimates for each subproject under the FAAsT obligation, which we mentioned functions as a fixed-cost estimate and budget for all PREPA projects under the PA program. Certainly, the foregoing includes all T&D and related infrastructure PA projects within the purview of LUMA as per the qualified O&M agreement, as well as PREPA's generation-side PA projects. On the other hand, as Recipient and subrecipient, COR3 and PREPA are responsible for grant management and compliance with applicable policies, procedures, laws, and regulations.

In any case, COR3 is not, and would not be a party to any Project Labor Agreement ("PLA") to be executed between LUMA, any other contractor, and a labor union, and how PLAs may impact FCEs for Section 428 projects is yet to be seen. At this point, and recognizing potential issues that may arise, COR3 continues to work with all relevant parties, including FEMA, P3A as administrator of the qualified O&M agreement, LUMA and PREPA in order to minimize any risks stemming from PLA implementation or any other matter that may unexpectedly increase cost estimates for capped projects or somehow impact local businesses, while keeping in mind that all facilities identified in the FAAsT SSM as damaged need to be addressed in order to comply with FEMA policies.

Question 5. What would be the impact on the recovery and mitigation action plan to rescind the LUMA contract and reset the whole changes in the electric system?

Answer. The administrator of the O&M agreement for PREPA's T&D system is the P3A, and not COR3. Therefore, any contract-related questions should be addressed by P3A. As we have reiterated, COR3 is responsible, as Recipient of PA and HMGP grants, for managing funds assigned to Puerto Rico after the devastation caused by Hurricane Irma, Maria, the 2020 earthquakes, COVID-19, and other disasters, and providing related technical assistance to PREPA and other subrecipients to maximize available funding while ensuring compliance with applicable laws and regulations and providing for full transparency and accountability in the management of such federal funds.

Pursuant to the above, we respectfully ask the Committee to redirect this question to the P3A.

Question 6. More in general terms, as a way of framing this in the greater Puerto Rico scope—what is the status today of recovery projects in general that have been approved by COR3 vs. how many applications are still outstanding? How is going the progress on the pace of reviewing and approving recovery projects that are shovel ready, and which can take advantage of already appropriated money, but that are

¹³See Executive Order 13990 of January 20, 2021, titled "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis"; Executive Order 14007 of January 27, 2021, titled "President's Council of Advisors on Science and Technology"; Executive Order 14008 of January 27, 2021, titled "Tackling the Climate Crisis at Home and Abroad"; Executive Order 14027 of May 7, 2021, titled "Establishment of the Climate Change Support Office"; Executive Order 14030 of May 20, 2021, titled "Climate-Related Financial Risk"; H.R. 3684—Bipartisan infrastructure bill titled "Infrastructure Investment and Jobs Act" (which is still pending before Congress); and FEMA Press Release-Biden Administration Commits Historic \$3.46 Billion in Hazard Mitigation Funds to Reduce Effects of Climate Change—August 5, 2021.

awaiting COR3 approval? Is there a list or portal where that can be accessed? What would help accelerate FEMA’s project approval?

Answer. As of October 20, 2021, the PREB has approved 120 projects related to the PREPA FAASSt obligation and HMGP, for an amount of over \$8 billion. Of these, 118 projects are from the FAASSt PA obligation, of which 96 projects are related to T&D and managed by LUMA, which represent an amount of almost \$7 billion, while the other 22 projects are generation and water assets managed by PREPA and represent an amount of approximately \$968 million. The remaining two (2) projects approved by the PREB are PREPA generation side HMGP projects and represent an amount of over \$665 million.

Many of the above-mentioned projects are already in the A&E design phase for the development of the detailed SOWs, which together sum 42 projects and a total project amount of over \$1.8 billion. These include 37 T&D projects under FAASSt (representing an amount of approximately \$1 billion), 3 generation-side projects under FAASSt (representing approximately \$138 million), and the 2 generation-side projects under HMGP that were mentioned above. Notably, last week, COR3 disbursed an initial \$7.1 million for A&E work necessary to develop and submit SOWs for four PREPA recovery projects. Current projections show that procurement and/or initial construction for about 65 projects representing an investment of \$2.8 billion should occur during 2022.

So far, there have been a total of 89 projects submitted to FEMA via Grants Portal, of which 73 are LUMA T&D related projects and 16 are PREPA non-T&D projects. We note that these numbers differ from the PREB total approved projects because PREB approves some projects as bundles or programs.

While most the damages caused by Hurricane Maria were to the T&D system—including buildings, posts, substations, transmission lines, and other assets—which is in turn represented in the distribution of the \$10.5 billion FAASSt obligation for permanent work, there are also several projects to be funded under FEMA PA and HMGP programs that will impact generation assets. Furthermore, yet to be completed project formulation and obligations related to the 2020 earthquakes disaster and the damages caused to the important PREPA generation plant known as Costa Sur are sure to positively impact the generation-side of PREPA’s operations.

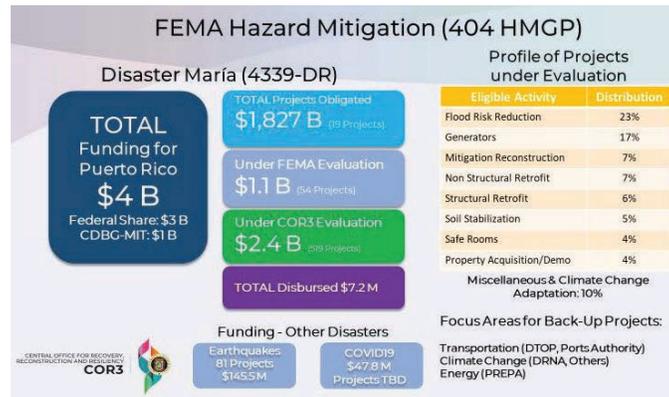
In general terms, since the beginning of the current term on January 2021, COR3 has undertaken several initiatives to accelerate the recovery process and take advantage of the incredible amount of federal funding available for such purposes, specifically through the FEMA PA and HMGP programs. The initiatives in COR3’s strategic plan may be summarized as follows:



As of October 18, 2021, the following represents general FEMA PA obligation status, including emergency work (FEMA PA Categories A and B for debris removal and emergency protective measures, respectively, of which a large part was assigned for PREPA emergency work), and permanent work obligations and disbursements. As for permanent work, we note that this process is only just beginning, and we expect disbursement to accelerate as more competitive processes, A&E studies and SOW development are conducted, and construction work initiates in 2022.



As for HMGP, current available funding and project status is available below. It should be pointed out that the current deadline to submit letters of intent for HMGP projects for the Hurricane Maria grant is set to expire on October 31, 2021, but COR3 timely requested an extension of time which is currently under FEMA's evaluation. Although the time extension, if granted, would allow us to work with applicants to provide more detailed LOIs, as well as additional time to consider energy generation project alternatives which in turn take into account the DOE study that was previously discussed, COR3 is ready to submit remaining LOIs by the October 31 deadline if needed, for purposes of securing available funding.



Please refer to COR3's prior answers for additional information and insight regarding the recovery process and our role in general.

Questions Submitted by Representative Moore

Question 1. You mentioned that Puerto Rico is the largest recipient of FEMA disaster dollars. Can you describe for us how this funding is being used to ensure resiliency so that future storms are not as disruptive?

Answer. We respectfully direct this Committee to our answers to Questions No. 1, 2, 3, and 6 from Rep. González-Colón above, which together we understand effectively answer this question from Rep. Blake Moore. If needed, we can elaborate a separate, similar response for purposes of meeting Committee requirements.

Question 2. Can you compare the effectiveness of renewables and fossil fuels in the context of disaster preparedness and recovery?

Answer. As per Act No. 17-2019, public policy pertaining to the energy sector is under the PREB's jurisdiction, and there is a state law mandate to incorporate renewable energy generation for the next couple of decades, which is reflected on

the PREB's IRP. This, in turn, is the reason why all PREPA/LUMA recovery projects must be approved by the PREB prior to submitting before FEMA and COR3.

COR3 cannot comment or compare with regards to the effectiveness of renewables and fossil fuels, as our role is limited to managing PA and HMGP funds as Recipient, and assisting subrecipients, such as PREPA, through the recovery process, while ensuring compliance with applicable laws and regulations, in an accountable and transparent manner. As such, technical questions related to energy sources should be directed to the PREB, LUMA, PREPA, or any other party with technical expertise on energy matters. We also reiterate that the DOE is currently conducting a technical study that will help relevant parties implement measures that resilient before future disasters, including whether or not LNG implementation is viable at this point.

For additional information regarding this topic, please refer to COR3's answers to Questions No. 1, 2 and 3 from Rep. González-Colón.

Once again, we thank this Committee for the opportunity to comment on this crucial issue for the people of Puerto Rico. We are available to provide additional insight or discuss our previous answers at your convenience.

APPENDIX 1

LUMA Timeline for Submission of Detailed SOWs

Project Title	Estimated Project Cost	Estimated Date to Submit Detailed SOW
FAAST Transmission Access Roads (Environmental)	\$15,130,000.00	Requires Further Discussion
FAAST-Substation 3801 Culebra (Substation)	\$1,200,000.00	February 2022
FAAST - Line 5400 - Rio Blanco HP to Daguao TC to Punta Lima TO to Vieques 2501 to Culebra 3801 (Transmission)	\$73,060,000.00	April 2022
FAAST-Substation 2501 Vieques (Substation)	\$2,300,000.00	February 2022
FAAST - Vieques Feeders 2501-01, 2501-02, 2501-03 and Culebra Feeders 3801-01, 3801-02 (Distribution)	\$28,810,000.00	April 2022
FAAST Rio Grande Estate Substation CH-2306 (Substation)	\$ 3,500,000.00	February 2022
FAAST San Juan 115kV Underground Transmission Loop (Transmission)	\$ 10,000,000.00	February 2022
FAAST - Taft - MC 1105 (Substations)	\$4,000,000.00	February 2022
FAAST - Line 8200 - San Juan SP to Catano Sect Line (Transmission)	\$8,070,000.00	February 2022
FAAST [Palo Seco SP to Catano Sect Line-9500] (Transmission)	\$6,710,000.00	April 2022
FAAST Transmission Line 37100 Costa Sur ST - Acacias TC (Transmission)	\$91,900,000.00	October 2022
FAAST Arecibo Regional Office Building (Building)	\$1,800,000.00	July 2022
FAAST Arecibo Electric Service Center (Building)	\$2,310,000.00	July 2022
FAAST Aguadilla Electric Service Center (Building)	\$2,500,000.00	July 2022

FAAST - Line 36200 - Monacillos TC to Juncos TC (Transmission)	\$42,740,000.00	December 2022
FAAST Transmission - Line 50100 - Cambalache CP TC to Manati TC (Transmission)	\$43,470,000.00	February 2023
FAAST - Line 36400 - Dos Bocas HP to Ponce TC (Transmission)	\$87,440,000.00	June 2023
FAAST - Llorens Torres MC 1106 - Equipment Repair & Replacement - (Substations)	\$4,000,000.00	February 2022
FAAST Centro Medico 1327/1359 Equipment Repair & Replacement (Substation)	\$11,800,000.00	February 2022
FAAST Substation - Viaducto TC - MC 1100 - Equipment Repair & Replacement (Substation)	\$4,000,000.00	March 2022
FAAST - Bayamon TC - MC-BKRS-Y1 (Substation)	5,300,000.00	February 2022
FAAST - Costa Sur SP TC - Equipment Repair and Replacement (Substation)	\$3,700,000.00	February 2022
FAAST - Line 51300 - Ponce TC to Costa Sur SP TC (Transmission)	\$26,080,000.00	July 2022
FAAST - Line 36100 - Dos Bocas HP to Monacillos TC (Transmission)	\$115,490,000.00	September 2022
FAAST Garzas 1 HP to Garzas 2 HP - Line 1100 (Transmission)	\$3,580,000.00	February 2022
FAAST Ponce TC to Jobos TC - 100 & 200 (Transmission)	\$156,550,000.00	February 2022
FAAST Aguirre TC - BKRS (Substations)	\$2,300,000.00	February 2022
FAAST Cachete - MC 1526 (Substations)	\$4,000,000.00	February 2022
FAAST Guaragao TC to Comerio TC Line-4100 (Transmission)	\$25,280,000.00	March 2022
FAAST Transmission - Line 40100 & 40200 - Aguirre	\$31,960,000.00	Moved to Mid Term

SP TC to Jobos TC (Transmission)		
FAAST-Line 37800 - Jobos TC to Cayey TC & Cayey TC to Caguas TC (Transmission)	\$52,000,000.00	August 2022
FAAST - Line 39000 - Aguas Buenas TC to Caguas TC (Transmission)	\$9,700,000.00	June 2022
FAAST Transmission Line 37800 Caguas TC to Monacillos TC (TRANSMISSION)	\$33,400,000.00	February 2022
FAAST - Substations - Tapia CIS Rebuilt - Equipment Repair & Replacement	\$23,000,000.00	February 2022
FAAST Caridad Substation - XFMR MC 1714 (Substation)	\$4,000,000.00	February 2022
FAAST - Catano-Rebuild 1801(Substation)	\$11,000,000.00	October 2021
FAAST - Manati TC - BRKS 230 kV - (Substation)	\$670,000.00	February 2022
FAAST - Line 36800 - Sabana Llana TC to Canovanas TC to Palmer-Fajardo TC (Transmission)	\$70,310,000.00	April 2022

* We note that these LUMA T&D and related projects and dates for detailed SOWs submission are current as of October 14, 2021 and may change as of the date of this response letter and moving forward, depending on project progression, including but not limited to timing of PREB approvals, initial SOW submission before COR3/FEMA, development of detailed SOWs by A&E firms, and alterations to project schedule and planning.

**In addition to these projects, LUMA expects to submit multiple final detailed SOWs on November 2021 before COR3 and FEMA related to "Street Lights" and "Pole Replacements".

APPENDIX 2

PREPA Timeline for Submission of Detailed SOWs

Project Title	Estimated Project Cost	Estimated Date to Submit Detailed SOW
Patillas Dam - Seismic Retrofit (Dams, Hydro, & Irrigation)	\$558,000,000.00	2022 Q2
FAAST - Rio Blanco Hydroelectric System (Dams, Hydro, & Irrigation)	\$48,100,000.00	2022 Q2
Early Warning System (Dams, Hydro, & Irrigation)	\$100,000,000.00	2023 Q3
New Black Start System at Costa Sur - 404 EG (Generation)	\$45,200,000.00	2022 Q1
New Simple Cycle Gas Turbines at Yabucoa - 404 EG (Generation)	\$45,500,000.00	2022 Q2
New Combined Cycle Planning and Studies (Generation)	\$5,000,000.00	N/A

* We note that these PREPA generation-side projects and dates for detailed SOWs submission are current as of October 14, 2021 and may change as of the date of this response letter and moving forward, depending on project progression, including but not limited to timing of PREB approvals, initial SOW submission before COR3/FEMA, development of detailed SOWs by A&E firms, and alterations to project schedule and planning.

**The list does not include additional emergency projects that are currently being evaluated by PREPA.

The CHAIRMAN. Thank you. And let me now recognize Ms. Ruth Santiago, Community and Environmental Attorney.

The floor is yours. You are recognized, Ms. Santiago.

Ms. SANTIAGO. Thank you. Good afternoon, Chair Grijalva and all.

I am about to find my statement. OK, so sorry about this.

[Pause.]

Ms. SANTIAGO. For some reason I can't find it. Sorry about that.

The CHAIRMAN. Would you like us to go to another witness, and come back to you?

Ms. SANTIAGO. Sure, that would be great. Thank you.

The CHAIRMAN. OK, thank you. Let me now recognize Professor Agustín Irizarry, Professor of Electrical Engineering at the University of Puerto Rico.

Professor, you are recognized for 5 minutes. Thank you.

STATEMENT OF AGUSTÍN IRIZARRY, PROFESSOR OF ELECTRICAL ENGINEERING, UNIVERSITY OF PUERTO RICO AT MAYAGUEZ (UPRM), MAYAGUEZ, PUERTO RICO

Dr. IRIZARRY. Thank you. Chair Grijalva and members of the House Committee on Natural Resources, I appreciate the opportunity to testify and submit written comments on PREPA post-implementation of the LUMA transmission and distribution contract. I am Dr. Agustín Irizarry, and I have been studying and working with electric power systems, in general, and the Puerto Rico power system in particular, for over 25 years.

I believe LUMA Energy's operation of our electric system has been detrimental to the well-being of hundreds of thousands of residents of Puerto Rico. I will join Ruth Santiago's message to this Committee to urge the Federal Government to earmark the FEMA funds allocated for the Puerto Rico electric system to be used for rooftop solar and battery systems, and energy efficiency programs that will provide resilient electric service, sustainability, and economic benefits to the residents of Puerto Rico, as shown by many studies.

Under LUMA, we have experienced longer and more frequent outages and widespread problems with severe voltage fluctuations. LUMA publishes on its website, under service interruption, a table indicating the number of clients without service, updated every 10 minutes. Note that the client is a meter, not a person. Thus, the number of people without electricity is three to four times the numbers of clients without electricity. After processing the data, we estimate that the average number of clients without service at any moment during September 2021 was 4,943. This estimate does not include load shed days or outliers. The almost 5,000 average clients without service is two to three times worse than it was during 2012 and 2014, when I was an elected member of PREPA's Governing Board. By then, the average number of clients without service, on an ordinary day, was between 1,500 and 2,000.

And service is also much worse than it was compared to the period directly prior to LUMA's takeover of the system. According to reliability indices filed by LUMA with the Puerto Rico Energy Bureau, the time it takes to restore electric service after an interruption has increased significantly in all regions of the island

under LUMA. The average system-wide time to restore electric service after an interruption increased from 2 hours and 18 minutes during March, April, and May 2021, with PREPA, to 5 hours and 23 minutes during June, July, and August 2021, under LUMA.

Why is this happening? I believe the problem fundamentally stems from a shortage of skilled and experienced workers. On June 1, 2021, 3,119 PREPA workers were transferred to other government agencies. How many linemen has LUMA hired to replace the ones that left? How well trained are these workers? How much experience, if any, did they have with the Puerto Rico electric system prior to June 1?

We do not know the answer to these questions, even though the Puerto Rico Legislature asked LUMA weeks ago. LUMA refused to answer and went to court to not answer. All courts in Puerto Rico, including the Puerto Rico Supreme Court, have ordered LUMA to answer. We are still waiting for a resolution on the second reconsideration LUMA filed before the Puerto Rico Supreme Court.

In my opinion, a well-trained workforce is the most important part of any infrastructure. Poles, conductors, switches, and generators are all bought with money. People must be hired and trained, and this is a process that takes more than money. It takes well-trained people to train the newly hired, and training takes time. Human capital cannot be replaced in a few months, and in the case of specialized positions such as power system dispatchers and high-voltage linemen, it will take years of training for a person to become truly proficient. Is the lack of well-trained and enough people the cause of worse reliability and voltage surges? I believe it is.

I am part of the Queremos Sol multi-sectoral coalition of Puerto Rican community, environmental, and labor organizations that put forward in 2018 a policy proposal for the renewable energy transformation of Puerto Rico's electrical system under a reformed public ownership model. The proposal emphasized efficiency and distributed renewable electric energy, particularly rooftop solar and behind-the-meter storage, as a strategy to provide resilience to households, to reduce the impact on agricultural and ecologically valuable lands from utility-scale renewable energy projects, and to reduce the island's dependence on imported fossil fuels and extensive transmission systems.

In early 2021, we completed a study where we used advanced modeling tools to make detailed simulations of the electrical grid and modeled, probably for the first time, most of the distribution system. We used data obtained from PREPA to perform an in-depth modeling of the scenarios with increasing penetration of renewable energy, up to 75 percent (with over half of that from residential installations) of total electricity consumption by 2035.

Our study shows that a grid with distributed generation based on rooftop solar and storage for homes and businesses can operate safely and reliably, saving money and stabilizing prices. The distribution system can support high levels of penetration of such systems with minimal investments.

In conclusion, for the reasons summarized in this testimony, we urge the Committee to investigate PREPA's agreement with LUMA

Energy and, in particular, the lack of trained personnel to properly operate the electric system. We request that the House Committee on Natural Resources include an inquiry on the status of FEMA funds for Puerto Rico electric system work, to ensure that the funds are used in a cost-effective manner to provide affordable, distributed, renewable, and resilient electric energy for Puerto Rico.

Thank you.

[The prepared statement of Mr. Irizarry follows:]

PREPARED STATEMENT OF AGUSTÍN A. IRIZARRY-RIVERA, PROFESSOR OF ELECTRICAL ENGINEERING, UNIVERSITY OF PUERTO RICO AT MAYAGÜEZ

I appreciate the opportunity to testify and submit written comments on PREPA Post Implementation of the LUMA Transmission and Distribution Contract. I am Dr. Agustín Irizarry and I have been studying electric power systems, in general, and the Puerto Rico power system in particular for over 25 years. I believe LUMA Energy's operation of our electric system has been detrimental to the well-being of hundreds of thousands of residents of Puerto Rico.

I join Ruth Santiago's message to this Committee to urge the Federal government to earmark the FEMA funds allocated for the Puerto Rico electric system to be used for rooftop solar and battery systems and energy efficiency programs that will provide resilient electric service, sustainability and economic benefit to the residents of Puerto Rico as shown by many studies.¹

I. Deterioration of Electric Service Under LUMA Energy

Under LUMA we have experienced longer and more frequent outages and widespread problems with severe voltage fluctuations.

LUMA publishes on its website,² under “service interruption”, a table indicating the number of clients without service, updated every 10 minutes. Note that a “client” is a meter not a person, thus the number of people without electricity is 3 to 4 times the number of clients without electricity.

After processing the data, we estimate that the average number of clients without service at any moment during September 2021 was 4,943.³ This estimate does not include load shed days or outliers. The almost 5,000 average clients without service is two to three times worse what it was during 2012–2014 when I was an elected member of PREPA's Governing Board. By then the average number of clients without service, on an ordinary day, was between 1,500 and 2,000.

And service is also much worse than it was compared to the period directly prior to LUMA's takeover of the system. According to reliability indices filed by LUMA with the Puerto Rico Energy Bureau, the time it takes to restore electric service after an interruption has increased significantly in all regions of the island under LUMA. The average system-wide time to restore electric service after an interruption increased from 2 hours and 18 minutes during March, April and May with PREPA to 5 hours and 23 minutes during June, July and August 2021 under LUMA.

Why is this happening? I believe the problems fundamentally stem from a shortage of skilled and experienced workers. On June 1st, 2021 3,118 PREPA workers were transferred to other government agencies. How many linemen has LUMA hired to replace the ones that left? How well trained are these workers? How much experience, if any, did they have with Puerto Rico's electrical system prior to June 1?

We do not know the answer to these questions even though the Puerto Rico Legislature asked LUMA weeks ago. LUMA refused to answer and went to court

¹Puerto Rico Low-to-Moderate Income Rooftop PV and Solar Savings Potential, National Renewable Energy Laboratory (NREL), 2020, Puerto Rico Low-to-Moderate Income Rooftop PV and Solar Savings Potential (nrel.gov); We Want Sun and We Want More (Summary), Fact Sheet, Puerto Rico Distributed Energy Resource Integration Study: Achieving a Renewable, Reliable, and Resilient Distributed Grid—Telos Energy, Puerto Rico Distribution Modeling—EE Plus, Puerto Rico Distributed Energy Resource Integration Study: Load, Energy Efficiency, and System Cost—Energy Futures Group, Sol + Techos—Página principal (cambiopr.org); Achievable Renewable Energy Targets (“ARET”), https://www.uprm.edu/aret/docs/Ch_4_Solar_resource_and_solar_thermal.pdf.

²<https://miluma.lumapr.com/outages/outageMap>.

³During the first half of September, Sept 1st thru 15th, the average number of clients without service was 4,804 and during the last half of September, Sept 16th thru 30th, it was 5,098.

to not answer. All courts in Puerto Rico, including the Puerto Rico Supreme Court, have ordered LUMA to answer. We are still waiting for a resolution of the second reconsideration LUMA filed before the Puerto Rico Supreme Court.

In my opinion a well-trained workforce is the most important part of any infrastructure. Poles, conductors, switches, generators are all bought with money. People must be hired and trained and this is a process that takes more than money; it takes well-trained people to train the newly hired and training takes time. Human capital cannot be replaced in a few months and in the case of specialized positions such as power system dispatchers and high-voltage linemen it will take years of training for a person to become truly proficient. Is the lack of well-trained, and enough, people the cause of worse reliability and voltage surges? I believe it is.⁴

II. The Solution We Propose: Queremos Sol Proposal and Integration Study of Distributed Solar Energy on Rooftops with Storage

I am part the Queremos Sol (“We Want Sun”), multi-sectoral coalition of Puerto Rican community, environmental and labor organizations, that put forward in 2018 a policy proposal for the renewable energy transformation of Puerto Rico’s electrical system under a reformed public ownership model. The proposal emphasized efficiency and distributed renewable electric energy, particularly rooftop solar and behind-the-meter storage, as a strategy to provide resilience to households, to reduce the impact on agricultural and ecologically valuable lands from utility-scale renewable energy projects, and to reduce the island’s dependence on imported fossil fuels and extensive transmission systems.⁵

In early 2021 we completed a study where we used advanced modeling tools to make detailed simulations of the electrical grid and modelled, probably for the first time, most of the distribution system. We used data obtained from PREPA, to perform in depth modelling of scenarios with increasing penetration of renewable energy, up to 75% (with over half of that from residential installations) of total electricity consumption by 2035. The results were used to estimate the costs of achieving the Queremos Sol goals.⁶

Our study shows that a grid with distributed generation based on rooftop solar and storage for homes and businesses CAN OPERATE SAFELY AND RELIABLY, SAVING MONEY AND STABILIZING PRICES. The distribution system can support high levels of penetration of such systems with minimal investment.

The main results of our study show:

- **100% household resiliency can be achieved** with 2.7 kW rooftop solar systems and 12.5 kWh batteries and with commercial installations. This will reduce household and community vulnerability after hurricanes;
- **It is cost-effective to use \$9.6 billion in federal funds to implement this plan**, which would reduce electric system costs to less than 15 cents/kWh by 2035;
- Puerto Rico could achieve 75% renewable energy in 15 years and **spend only \$430 million annually on fuel** (fuel costs exceed \$1.4 billion in 2019 and 2020);
- **There is no need for investment in new fossil fuel-based power plants** or conversion of existing plants to natural gas;
- **CO₂ emissions can be reduced nearly 70%, placing Puerto Rico at the forefront** of addressing climate change with urgency;
- **It is possible to retire fossil fuel-based generation**, starting with the AES coal plant;
- **With modest investments in the distribution system—\$650 million—the grid can support the reliable integration of 75% rooftop renewable energy and battery storage;**

⁴And we have seen it happening for a good while now. In 2016 a report was presented, by Fisher and Horowitz, to the Puerto Rico Energy Bureau (in case no. CEPR-AP-2015-0001) on problems PREPA was facing. From page 30 of the report, on the subject of staff availability and competence:

“Ms. Miranda’s panel discusses that forced outages are due, in part to “skilled labor leaving operational roles and not being replaced.” PREPA’s own internal documentation backs up and expands this contention, blaming the outages on a “loss of significant number of experienced personnel,” and that “new employees do not have the required expertise and knowledge.”

⁵ <https://www.queremosolpr.com/>.

⁶ <https://cambiopr.org/solmastechos/>.

- **The proposal is more economical** than PREPA’s proposed plans such as the Integrated Resource Plan (and the cost of the current system).

III. Conclusion

For the reasons summarized in this testimony, we urge the Committee to investigate PREPA’s Agreement with LUMA Energy, LLC and in particular the lack of trained personnel to properly operate the electric system. We request that the House Committee on Natural Resources include an inquiry on the status of FEMA funds for Puerto Rico electric system work to ensure that the funds are used in a cost-effective manner to provide affordable, distributed, renewable and resilient electric energy to Puerto Rico.

—End of oral testimony

—Written testimony continues—

IV. Comparison of Reliability Indices as Reported by LUMA to the Puerto Rico Energy Bureau

Reliability metrics—SAIDI, SAIFI and CAIDI—reported by LUMA to the Puerto Rico Energy Bureau show the deterioration of the system under LUMA’s management.

SAIDI is the “System Average Interruption Duration Index”. SAIDI is the average, non-momentary,⁷ outage duration for each customer served over a defined period of time (usually 1 year) and is usually measured in minutes or hours. The average SAIDI during 2019 for U.S. electric utilities was 92 minutes. This SAIDI does not consider major interruption events caused by hurricanes, earthquakes, etc.

LUMA reported, from June thru August 2021, a SAIDI which is worse than the one reported by PREPA from March thru May 2021. LUMA’s performance is worse than PREPA’s, in most cases by a factor of 2, in every distribution system region in Puerto Rico.

SAIFI is the “System Average Interruption Frequency Index”. SAIFI is the average number of interruptions that a customer would experience over a defined period of time (usually 1 year) and is usually measured in interruptions per customer. In the U.S. the average SAIFI is 1.1 interruptions per year without including major events.

During June thru August 2021 LUMA reported that fifteen (15) out of 26 distribution system regions experience more interruptions under LUMA.

CAIDI is the “Customer Average Interruption Duration Index”. CAIDI gives the average outage duration that any given customer would experience over a period of time, usually 1 year. CAIDI can also be viewed as the average restoration time, the time it takes to the electric utility to restore service once an interruption occurs. In the U.S. the average CAIDI is about 82 minutes (81.6 minutes).

Again, for all distribution system regions, the restoration time after an interruption increased significantly during June thru August 2021 under LUMA. The average system-wide time to restore electric service after an interruption increased from 2 hours and 18 minutes during March, April and May with PREPA to 5 hours and 23 minutes during June, July and August 2021 under LUMA.

V. The LUMA Contract, Even if Properly Executed, Will Create a 20th Century Utility, We Want a 21st Century Utility

Puerto Rico Law 120 was enacted with the objective to “transform the Puerto Rico energy system into a **modern, sustainable, reliable, efficient, cost-effective, and resilient system**”. The contract between LUMA and PREPA on its Recitals quotes the purpose of this Law 120 that gives rise to the contract:

WHEREAS, in accordance with Act 120, Owner⁸ desires to transform Puerto Rico’s energy system into a modern, sustainable, reliable, efficient, cost-effective and resilient system;

In a traditional, 20th century, electric power system the architecture was based on large-scale generation; centralized, a one-way control strategy of the system; and passive loads. The traditional system was not designed to meet many emerging trends, such as greater adoption of relatively low inertia generation sources, increasing penetration of distributed generation resources, and the need for greater resilience.

⁷ A momentary service interruption last for less than 5 minutes.

⁸ In the contract PREPA is identified a “Owner”.

A modern electric power system must be flexible, robust, agile. It must have the ability to dynamically optimize grid operations and resources, rapidly detect and mitigate disturbances, integrate diverse generation sources, on both the supply and demand sides, integrate demand response and energy-efficiency resources, enable consumers to manage their electricity use, and provide strong protection against physical and cyber risks.⁹

A modern electric power system must include more distributed control, two-way flows of electricity and information, more energy storage, more energy justice, more sustainable sources of energy, and consumers as energy producers thru assertive deployment of resilient and distributed renewable energy resources and as participants of demand management and efficient use of electricity programs.¹⁰

Even a casual read of the LUMA contract shows that the contract aims at achieving, if LUMA performs admirably—a condition that is not happening—a 20th century utility.

VI. Generation Problems

In recent weeks, Puerto Rico has experienced a series of problems at its power plants—including both those owned by PREPA and privately owned plants—that have led to large-scale power outages. These outages come on top of the worsened reliability of the transmission and distribution system, as described above.

The problems at PREPA’s power plants result from a long-standing failure to adequately fund the maintenance of the plants. An expert report to the Puerto Rico Energy Bureau in 2016 described the “reliability crisis” that the power plants were already experiencing five years ago. The report noted that the outage rate of PREPA’s power plants had increased directly in proportion to the decline in spending on operation and maintenance.¹¹ PREPA’s budgets for generation system maintenance have not increased since that time. In the most recent 13 weeks for which data is available from the Puerto Rico Fiscal Agency and Financial Advisory Authority (from mid-June to mid-September), PREPA has apparently spent only 51% of its maintenance budget.¹²

I am deeply concerned that the privatization of PREPA’s power plants—the solution proposed by the government of Puerto Rico—will not resolve the generation problems. What is needed is a financial commitment to improve the reliability of the plants, which the ratepayers of Puerto Rico will pay for regardless of whether the plants are publicly or privately owned. Indeed, if privatization results in the loss of competent and experienced workers and mid-level managers at the plants, similar to what has occurred with the LUMA contract, there is every reason to expect plant availability to deteriorate further.

This testimony is presented by Agustín A. Irizarry Rivera as his testimony and it does not represent the testimony of the Universidad de Puerto Rico, employer of Dr. Irizarry Rivera.

QUESTIONS SUBMITTED FOR THE RECORD TO AGUSTÍN A. IRIZARRY-RIVERA,
PROFESSOR OF ELECTRICAL ENGINEERING, UNIVERSITY OF PUERTO RICO AT
MAYAGÜEZ (UPRM)

Questions Submitted by Representative Sablan

Question 1. How do you think LUMA and PREPA can best prevent blackouts in the future? How much would such efforts cost? Would a transition to renewable energy sources help improve power reliability for Puerto Rico long term?

⁹ Quadrennial technology review: An assessment of Energy Technologies and research opportunities, Chapter 3: Enabling Modernization of the Electric Power System, US Department of Energy, September 2015.

¹⁰ International Energy Agency. “Technology Roadmap: Smart Grid.” OECD/IEA. Paris, France, 2011. http://www.iea.org/publications/freepublications/publication/smartgrids_roadmap.pdf.

¹¹ Expert Report of Jeremy Fisher and Ariel Horowitz, Puerto Rico Energy Bureau Case No. CEPR-AP-2015-0001, November 23, 2016, pp. 11 and 30.

¹² Fiscal Agency and Financial Advisory Authority. PREPA 13-Week Cash Flow Updates dated May 19, July 21 and September 15, 2021.

Answer. The widespread outages experienced recently in Puerto Rico are due to two causes: (1) LUMA Energy's inability to properly manage the transmission and distribution system; and (2) many years of deferred maintenance of Puerto Rico's power plants.

Fundamentally, as stated in my testimony, the longer outage times experienced under LUMA are due to the company's lack of skilled and experienced labor. This situation could be resolved by amending or canceling the LUMA contract in order to restore the thousands of displaced ex-PREPA workers to their former positions in the transmission and distribution system.

A transformation to distributed (i.e. rooftop) solar and storage is key to improving power reliability in Puerto Rico. Locating power generation close to consumption would dramatically reduce Puerto Rico's dependence on the south-to-north transmission system that failed during Hurricane Maria. Rooftop solar and storage has been proven to be able to continue to provide power to households and meet critical loads during a grid emergency. According to detailed grid modeling of Puerto Rico's electrical system, the island could achieve 75% penetration of distributed renewable energy, including equipping every home on the island with a small-scale solar and storage system, by 2035 with modest improvements to the island's distribution system infrastructure. If \$9.6 billion of the FEMA and CDBG funds allocated for Puerto Rico's electrical system were used to further this transformation, it would result in a stable average rate of 15 cents per kWh, as well as transforming the resiliency situation of Puerto Rican households. For more details, see: Vila Biaggi, Kunkel and Irizarry, *We Want Sun and We Want More: 75% Distributed Renewable Generation in 15 Years in Puerto Rico is Achievable and Affordable*, 2021.

The CHAIRMAN. Thank you, the gentleman yields. Let me now return to Ms. Santiago.

Ms. SANTIAGO. Yes.

The CHAIRMAN. You are recognized for 5 minutes, thank you.

STATEMENT OF RUTH SANTIAGO, COMMUNITY AND ENVIRONMENTAL ATTORNEY, SALINAS, PUERTO RICO

Ms. SANTIAGO. Thank you, Chair Grijalva. And hello again, good afternoon.

On behalf of the Puerto Rico and stateside groups joining in this testimony, we appreciate the opportunity to testify on the PREPA post-implementation of the LUMA transmission and distribution contract. The groups joining in this testimony have substantial concerns with both the LUMA operation of the electric system, and the control that LUMA wields over Federal funds for electric system work in Puerto Rico.

We ask this Committee to investigate the LUMA contract, and to urge the Federal Government to earmark the FEMA funds for on-site and rooftop solar and battery systems, and similar alternatives that will provide lifesaving electric service to the residents of Puerto Rico.

Multiple studies have shown the viability, reliability, and economic benefits of rooftop solar and storage. The Government of Puerto Rico has \$9.6 billion allocated by FEMA at its disposal to solve the current energy crisis by deploying rooftop solar and storage. The Federal Government must ensure that taxpayer funds are invested in accordance with Federal laws and policies that promote cost effectiveness, tackling the climate crisis, and centering environmental justice. Solar energy deployment in Puerto Rico is expected to create nearly 20,000 jobs by 2030.

Since LUMA took over operation of the system, Puerto Rico has suffered constant power outages, destructive voltage fluctuations,

fires caused by electric malfunctions, where hundreds of thousands of residents and businesses have been deprived of electric service for extended periods of time. People are now referring to the constant outages as Hurricane LUMA.

Lately, LUMA has alleged that the outages are attributable to lack of generation from PREPA plants. LUMA's numbers do not add up, and I implore you to look at the specific numbers in my written testimony. The documented evidence disproves LUMA's excuses. An Emergency Management KPI Dashboard report shows that Puerto Rico has hundreds of megawatts of available capacity above maximum demand.

Under the contract, LUMA is responsible for determining which plants inject or dispatch energy into the T&D system. The malfunction of part of the PREPA fleet still leaves enough generation available to supply demand. Another alternative that LUMA has to avoid outages is to work with large customers to use their own generation units, totaling about 234 megawatts. That is additional to what is in the PREPA system.

Why has LUMA failed to dispatch the available PREPA units or use demand response alternatives? Does the fact that dispatching peaker units increases costs have something to do with LUMA's decision? Does the fact that the Government of Puerto Rico has asked FEMA to fund new gas plants or plans to sell the plants to private investors have anything to do with not dispatching the existing units?

PREPA's maintenance budget has been decreasing in the past few years. We asked the commission to investigate the role of the FOMB, which controls PREPA's budget.

LUMA is even delaying interconnection of rooftop solar for the few residents that can afford them, which could also contribute to alleviating energy demand, and thus reduce the incidence of outages.

The investment by PREPA of Federal funds for rooftop solar and storage achieves three goals: (1) access to energy resilience, equity, and justice, especially for lower-income sectors; (2) establish a uniform procedure where the public corporation, with local talent and organized communities, accelerate renewable energy deployment; and (3) break the cycle of repeated destruction and reconstruction of the transmission system that often disrupts service, and avoid the waste of taxpayer funds on transmission that will be devastated by future hurricanes.

Because PREPA is in bankruptcy, FEMA funds are the only viable way to achieve renewable energy goals and accessible electric rates. Financing PPOAs with PREPA as a credit counterparty would entail prohibitively high interest rates and costs.

The Stafford Act requires FEMA to determine the cost effectiveness of projects, reduce the risk of, or increase the resilience to, future damage, hardship, loss, or suffering.

The electricity crisis manufactured by LUMA and the Government of Puerto Rico not only inflicts economic costs, it can also cost lives. The LUMA contract grants LUMA control over Federal funds, and points to conflicts of interest and potential self-dealing by LUMA.

Lastly, we urge the Committee to investigate the LUMA contract and the role of FOMB in its imposition and in the electric crisis. We ask this Committee to urge the Federal Government to earmark FEMA funds for on-site and rooftop solar and battery systems, and similar alternatives that will provide the lifesaving electric service, and include an inquiry on the proposed use of FEMA funds to ensure that they are invested in a cost-effective manner to provide affordable, renewable, reliable, and resilient electric energy.

The use of this historic amount of funds allocated for the electric system will determine the viability of Puerto Rico for generations to come. Thank you.

[The prepared statement of Ms. Santiago follows:]

PREPARED STATEMENT OF RUTH SANTIAGO, COMMUNITY AND ENVIRONMENTAL
ATTORNEY, SALINAS, PUERTO RICO

On behalf of the groups listed in the attachment to this letter, we appreciate the opportunity provided by the House Committee on Natural Resources to testify and submit written comments on the PREPA Post Implementation of the LUMA Transmission and Distribution Contract. As further explained below, the groups joining this testimony have substantial concerns with both the LUMA Energy operation of the electric system and the control that LUMA Energy proposes to wield over federal funds for electric system work in Puerto Rico.

We urge the House Committee on Natural Resources to investigate PREPA's Transmission and Distribution System Operation and Maintenance Agreement with LUMA Energy, LLC and the role of the Federal Oversight and Management Board in the imposition of the LUMA contract and the Puerto Rico electric crisis. We ask this Committee to urge the Federal Government to earmark the historic and once-in-a-lifetime amount of Federal Emergency Management Agency ("FEMA") funds allocated for the Puerto Rico electric system for on-site and rooftop solar and battery systems and energy efficiency programs that will provide life-saving electric service to the residents of Puerto Rico. Multiple studies have shown the viability, reliability and economic benefits of rooftop solar and storage in Puerto Rico.¹ Last year, the National Renewable Energy Laboratory concluded that is rooftop solar more than sufficient to power local areas, solar energy sited on rooftops are offsets and reduce the overall amount of energy needing transmission and distribution. According to that study, Puerto Rico has the potential to produce four to five times as much solar energy than is needed to meet its current residential demand. More than a decade ago, the University of Puerto Rico found that solar is "the least environmentally intrusive." Because Puerto Rico followed the Los Angeles model of development and urbanization, with housing sprawl and shopping malls, we have what we call "rooftop resource." The report recommended generating power locally through solar and, in certain cases, creating microgrids, such as for high-rise buildings. More recently, Cambio PR and the Institute for Energy, Economics and Financial Analysis set out

¹ Meghan Mooney & Katy Waechter, *Puerto Rico Low-to-Moderate Income Rooftop PV and Solar Savings Potential*, National Renewable Energy Laboratory (2020), <https://www.nrel.gov/docs/fy21osti/78756.pdf>; *Estudio de Integración de Recurso Solar Distribuido en Puerto Rico, Sol + Techos*, Cambio PR (2021), <https://cambiopr.org/solmastechos/#downloads>; Ingrid M. Vila Biaggi et al., *We Want Sun and We Want More (Summary)* (2021), https://cambiopr.org/wp-content/uploads/2021/03/Modeling-Study-Fact-Sheet-03_21.pdf; *Puerto Rico Distributed Energy Resource Integration Study: Achieving a Renewable, Reliable, and Resilient Distributed Grid*, Telos Energy (December 2020), <https://cambiopr.org/wp-content/uploads/2021/03/Puerto-Rico-Distributed-Energy-Resource-Integration-Study-Telos-Energy.pdf>; *Puerto Rico Distribution Modeling, EE Plus* (2021), <https://cambiopr.org/wp-content/uploads/2021/03/Puerto-Rico-Distribution-Modeling-EE-Plus.pdf>; *Puerto Rico Distributed Energy Resource Integration Study: Load, Energy Efficiency, and System Cost*, Energy Futures Group (2021), <https://cambiopr.org/wp-content/uploads/2021/03/Puerto-Rico-Distributed-Energy-Resource-Integration-Study-Energy-Futures-Group.pdf>; *Achievable Renewable Energy Targets ("ARET") ch. 4 Solar Resource*, https://www.uprm.edu/aret/docs/Ch_4_Solar_resource_and_solar_thermal.pdf; Agustín A. Irizarry-Rivera et al., *Achievable Renewable Energy Targets ("ARET")* (2008), <https://bibliotecalegalambiental.files.wordpress.com/2013/12/achievable-renewable-energy-targets-fo-p-r.pdf>.

a plan to achieve 75 percent renewable power generation in 15 years. Solar energy deployment in Puerto Rico is expected to create nearly 20,000 jobs by 2030.²

The Government of Puerto Rico has \$9.6B allocated by FEMA at its disposal to solve the current energy crisis in Puerto Rico by deploying rooftop solar and storage. Instead, in the 10 Year Infrastructure Plan, the Government of Puerto Rico is requesting around \$14B in federal funds for the electric system, most of which would be for transmission and new gas-fired plants and nothing for renewables.³

I. “Hurricane LUMA”, LUMA’s Generation Numbers Don’t Add Up

The Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement dated June 22, 2020 between the Puerto Rico Electric Power Authority as Owner, the Puerto Rico Public-Private Partnerships Authority as Administrator, Luma Energy, LLC as ManagementCo, and Luma Energy Servco, LLC as ServCo (the LUMA contract) is a long, expensive and exclusive scheme that creates a private monopoly over energy transmission, distribution, generation dispatch, customer service, planning and all other electric system functions with the exception of operation of the generation plants. Under the contract, PREPA must use ratepayer funds to pay LUMA a service fee that ranges from \$83 million to \$125 million per year, in addition to LUMA’s costs, so-called Operator T&D Pass-Through Expenditures, some capital expenses and expenses during outage events. LUMA has no obligation to invest its own funds. LUMA has already exceeded its budget and is recently requested a rate hike notwithstanding its deficient service. Puerto Rico ratepayers have already shouldered four rate increases this year alone.⁴

Since LUMA Energy took over the operation of the electric system, Puerto Rico has suffered constant power outages, destructive voltage fluctuations, fires caused by electric malfunctions where hundreds of thousands of Puerto Rico electric consumers have been deprived of electric service for extended periods of time.⁵ People

² Interstate Renewable Energy Council (IREC), Solar Workforce Development (2021), <https://irecusa.org/programs/puerto-rican-solar-business-accelerator/solar-workforce-development/>.

³ Updated 10-Year Plan, submitted July 6th in PREB docket NEPR-MI-2021-0002, p. 15. <https://energia.pr.gov/wp-content/uploads/sites/7/2021/07/20210706-Joint-Motion-Submitting-Updated-10-Year-Infrastructure-Work-Plan.pdf>.

⁴ *Últimos ajustes por compra de combustible y energía: un ABC*, Microjuris, Oct. 1, 2021, <https://aldia.microjuris.com/2021/10/01/que-significa-el-ajuste-por-compra-de-combustible/>.

⁵ Partial list of articles published in Puerto Rico media on LUMA:

Yaritza Rivera, *LUMA reconoce que sus plataformas digitales están abrumadas y no funcionan correctamente*, June 4, 2021, https://www.elvocero.com/gobierno/luma-reconoce-que-sus-plataformas-digitales-est-n-abrumadas-y-no-funcionan-correctamente/article_194d6304-c4cb-11eb-b464-df919d17eb73.html.

Primeros dos meses de Luma: retrasos, daños y servicio deficiente, Sin Comillas, Aug. 16, 2021, <https://sincomillas.com/primeros-dos-meses-de-luma-retrasos-danos-y-servicio-deficiente/>.

Paciente de esclerosis múltiple clama a LUMA Energy por servicio de electricidad, Cybernews, June 15, 2021, <https://www.periodicolaperla.com/paciente-de-esclerosis-multiple-clama-a-luma-energy-por-servicio-de-electricidad/>.

Alcalde de Ponce emplaza a LUMA Energy por deficiencias en el servicio eléctrico que afecta a residentes y comerciantes, Redacción Digital, June 11, 2021, <https://www.periodicolaperla.com/alcalde-de-ponce-emplaza-a-luma-energy-por-deficiencias-en-el-servicio-electrico-que-afecta-a-residentes-y-comerciantes/>.

José Rafael Hernández, *Reclaman a LUMA Energy atienda los problemas de electricidad en Caguas*, June 17, 2021, <http://www.presenciapr.com/reclaman-a-luma-energy-atienda-los-problemas-de-electricidad-en-caguas/>.

Luis Penchi, *Municipio de San Juan activa brigadas ante problemas con LUMA*, July 12, 2021, <https://www.elforodepuertorico.com/municipio-de-san-juan-activa-brigadas-ante-problemas-con-luma/>.

Alcalde de Villalba alega que no logra comunicación efectiva con LUMA, Telemundo, Aug. 15, 2021, <https://www.telemundopr.com/noticias/puerto-rico/alcalde-de-villalba-alega-que-no-logra-comunicacion-efectiva-con-luma/2248393/>.

PIP pide investigar deficiencias operativas de LUMA, Noticel, June 11, 2021, <https://www.noticel.com/legislatura/ahora/pip/politica/20210611/pip-pide-investigar-deficiencias-operativas-de-luma/>.

Istra Pacheco, *LUMA confronta problemas con la facturación a clientes*, Sept. 29, 2021, https://www.elvocero.com/gobierno/agencias/luma-confronta-problemas-con-la-facturaci-n-a-clientes/article_adee728a-1c11-11ec-a567-470d7815aba2.html.

Cathy Kunkel, *Retrasos, daños y mal servicio: los dos primeros meses de LUMA Energy ponen de relieve los defectos de la privatización*, Aug. 16, 2021, <https://ieefa.org/retrasos-danos-y-mal-servicio-los-dos-primeros-meses-de-luma-energy-ponen-de-relieve-los-defectos-de-la-privatizacion/>.

Elián, Martínez, *Apagones empeoraron desde la entrada de LUMA, reconoce un documento de la empresa*, Sept. 30, 2021, <https://periodismoinvestigativo.com/2021/09/apagones-empeoraron-desde-la-entrada-de-luma-reconoce-un-documento-de-la-empresa/>.

have taken to calling the frequent and extended outages, “Hurricane LUMA”. Lately, LUMA has alleged that the outages are attributable to lack of generation from the PREPA power plants. The documented evidence disproves LUMA’s excuses about its deficient service. On January 29, 2021, the Puerto Rico Electric Power Authority (“PREPA”) filed a report with the Puerto Rico Energy Bureau that provides a breakdown of electricity generation resources and energy demand. The report, titled Emergency Management KPI Dashboard, reflects that electricity demand was at 1960 MW, compared to the maximum capacity of the generating units in service of 3,361 MW with installed capacity of the units at 4596 MW. Moreover, according to the report, PREPA has additional units that could be placed into service with an extra maximum capacity of 935 MW and with an installed capacity of 1,722 MW.⁶ We are aware that many of the plants no longer function at the original-installed capacity. Considering only functional capacity of the plants, a simple mathematical exercise shows that PREPA’s excess generating capacity of at least 1401 MW, plus 935 MW from the units that were not in service but are functional. Although demand is higher in the summer months, PREPA still has excess generation capacity and sufficient reserves. Puerto Rico has about twice the available electricity capacity compared to peak (maximum) energy demand.

In a motion dated September 8, 2021, LUMA Energy submitted a report to the Energy Bureau that indicates that available capacity was 3245 MW.⁷ While the figure is less than PREPA’s earlier filing this year it is still more than enough generation to cover peak demand which LUMA estimates is 2750 MW.

⁶Más de 270,000 abonados sin servicio eléctrico en Puerto Rico, EFE, Sept. 28, 2021, <https://www.diariolibre.com/usa/actualidad/mas-de-270000-abonados-sin-servicio-electrico-en-puerto-rico-EI29036772>.

⁷Investigan el origen de la explosión que produjo apagón en Puerto Rico, EFE, June 11, 2021, <https://www.swissinfo.ch/spa/p-rico-apag%C3%B3n-resumen-investigacion-el-origen-de-la-explosi%C3%B3n-que-produjo-apag%C3%B3n-en-puerto-rico/46699210>.

Cynthia López, *Alza en tarifa de la luz es cuestión de tiempo, Luma dice que tuvo pérdidas de \$80 millones*, Sept. 9, 2021, <https://jayfonseca.com/alza-en-tarifa-de-la-luz-es-cuestion-de-tiempo-luma-dice-que-tuvo-perdidas-de-80-millones/>.

Aseguran que LUMA es responsable de problemas recientes con el sistema eléctrico, Radio Isla, June 17, 2021, <https://radioisla.tv/aseguran-que-luma-es-responsable-de-problemas-recientes-con-el-sistema-electrico/>.

LUMA pone en peligro vidas y propiedades de residentes a través de la isla, Redacción Digital, June 28, 2021, <https://www.periodicolaperla.com/luma-pone-en-peligro-vidas-y-propiedades-de-residentes-a-traves-de-la-isla/>.

Yaritza Rivera, *Reconocen problemas de LUMA Energy*, El Vocero, Aug. 3, 2021, https://www.elvocero.com/gobierno/reconocen-problemas-de-luma-energy/article_307e48bc-f48d-11eb-b865-ef16ecc194b3.html.

Siguen los problemas con LUMA: Tras apagones, restablecen el servicio de energía, Sala de Redacción, Aug. 23, 2021, <https://www.elforodepuertorico.com/siguen-los-problemas-con-luma-tras-apagones-restablecen-el-servicio-de-energia/>.

Juan Marrero, *LUMA no revela querellas por enseres eléctricos dañados en apagones*, Sept. 16, 2021, <https://www.metro.pr/pr/noticias/2021/09/16/luma-no-revela-querellas-enseres-electricos-danados-apagones.html>.

Yennifer Alvarez, *Sin mecanismo para presentar reclamaciones clientes con enseres dañados por apagones*, June 16, 2021, <https://jayfonseca.com/sin-mecanismo-para-presentar-reclamaciones-clientes-con-enseres-danados-por-apagones/>.

Sofía Rico, *Aunque LUMA esté en transición, no es excusa para perjudicar los derechos del consumidor*, Noticel, July 12, 2021, <https://www.noticel.com/ahora/gobierno/20210712/aunque-luma-este-en-transicion-no-es-excusa-para-perjudicar-los-derechos-del-consumidor/>.

Luis Penchi, *Comisionada pedirá rendición de cuentas a LUMA y AEE por mala administración en el sistema de energía de Puerto Rico*, Sept. 17, 2021, <https://www.elforodepuertorico.com/comisionada-pedira-rendicion-de-cuentas-a-luma-y-ae-ee-por-mala-administracion-en-el-sistema-de-energia-de-puerto-rico/>.

Gerardo Alvarado, *Fallas en el sistema de facturación de LUMA Energy frenaron un aumento mayor para los consumidores*, Sept. 22, 2021, <https://www.elnuevodia.com/noticias/locales/notas/fallas-en-el-sistema-de-facturacion-de-luma-energy-frenaron-un-aumento-mayor-para-los-consumidores/>.

Vuelven los cacerolazos: protestan contra LUMA y constantes apagones, Telemundo, Sept. 28, 2021, <https://www.telemundopr.com/noticias/puerto-rico/vuelven-los-cacerolazos-protestan-contra-luma-y-constantas-apagones/2263504/>.

⁶See, Motion to Present Status and Final Progress Report and Request for Release of Order at 23; *Mocion-para-Presentar-Reporte-de-Estatus-y-Progreso-Final-y-Solicitud-de-Relevo-de-Orden-NEPR-AP-2020-0001-1.pdf*.

⁷See, Motion Submitting Slides Projected by LUMA During Technical Conference of September 3, 2021, *Motion-Submitting-Slides-Projected-by-LUMA-During-Technical-Conference-of-September-3-2021-NEPR-MI-2021-0014.pdf*.

Under the contract between the PREPA and LUMA Energy, LUMA is charged⁸ with determining which plants inject or dispatch energy into the transmission and distribution (T&D) system to provide electricity to customers and not leave any residence, business, industry, government agency or public lighting without electric service. The malfunction of part of the Palo Seco plant and Unit 1 of the Aguirre Power Complex, which has a maximum capacity of 400 MW (installed capacity of 450 MW), allegedly affected by sargassum, making them inoperative still leaves enough generation available to supply energy demand if the remaining PREPA units are placed in service. Another alternative that LUMA has at its disposal to avoid outages is to lower peak demand by working with large customers to use their own self-generation units, totaling about 234 MW, at peak times.⁹ Why has LUMA Energy failed to dispatch the available PREPA units as required by the contract or use demand response alternatives? Does the fact that dispatching peaker units increases costs have something to do with LUMA's decision? Does the fact that the Government of Puerto Rico has asked FEMA to fund new "natural" methane gas plants in Palo Seco and throughout Puerto Rico or the government's intention to sell the plants to private investors or both have anything to do with not dispatching the existing units?

This is analogous to the situation in 2020, when the earthquakes damaged the two large units at the Costa Sur (810 MW) and part of the EcoElectrica plant. The PREPA Executive Director at the time, Jose Ortiz claimed there was insufficient generation capacity in the system. The Energy Board approved the issuance of a request for proposals for temporary generation to be financed by FEMA. Civil society groups opposed the RFP as a waste of funds because PREPA had peaking units available to cover the demand. In the end, the case was withdrawn and no new temporary generation was required.¹⁰

We are aware that PREPA's maintenance budget has been decreasing in the past few years and that this may have led to lack of funds to maintain cooling water intake structures to prevent sargassum from clogging the filters at the Aguirre Power Complex.¹¹ We ask the Commission to investigate the role of the Federal Oversight Management Board (FOMB) which controls and must authorize changes in PREPA's budget.

Another way that LUMA could limit outages would be to expedite resolution of the pending interconnection requests for rooftop solar and storage made by the relatively few residents of Puerto Rico that can afford to finance the cost of these systems.¹² However, LUMA is delaying even those ready-to-go requests. These rooftop solar and storage installations, although only available to the privileged few could also contribute to alleviating energy demand from the centralized grid and thus reduce the incidence of outages. LUMA has exacerbated the crisis by failing to allow timely interconnections of rooftop solar systems; LUMA has a backlog of more than 5,000 systems still to be interconnected, and the Puerto Rico Energy Bureau is considering issuing daily fines of \$1,000 until LUMA clears the backlog.¹³

The electricity crisis manufactured by LUMA Energy and the government of Puerto Rico not only inflicts economic costs, it can also cost lives.

II. Disaster Recovery Funding

FEMA disaster recovery funds allocated to PREPA present a unique opportunity to provide a lifeline to Puerto Rico residents and businesses with rooftop solar and battery energy storage. The investment by PREPA of federal funds allocated to it for rooftop solar and storage systems through a transparent process for large-scale deployment of renewable energy technology achieves three primary goals: 1) provide access to energy resilience, equity and justice, especially for lower-income sectors of the population; otherwise, most people in Puerto Rico would not be able to obtain loans or leases for solar systems and batteries; 2) establish a uniform procedure

⁸The Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement, June 22, 2020 at 35, 42, 73, <https://www.p3.pr.gov/wp-content/uploads/2020/06/executed-consolidated-om-agreement-td.pdf>.

⁹PREPA estimated that large customers had 234 MW of self-generation in Slide 15 of PREPA's presentation during Panel A of the Integrated Resource Plan evidentiary hearing. See, Autoridad de Energía Eléctrica, January 2020 Earthquakes: Effect on Existing Resources, <https://app.box.com/s/fuvsx24ceblv64drllskvohiru8thsywt>.

¹⁰Expedientes—NEPR, NEPR-AP-2020-0001.

¹¹Laura M. Quinter,

¹²See, Máximo Solar Industries, Inc. Vs. Autoridad de Energía Eléctrica de Puerto Rico, Docket No. NEPR-QR-2020-0029, <https://energia.pr.gov/expedientes/?docket=nepr-qr-2020-0029>.

¹³Puerto Rico Energy Bureau Resolution & Order, August 6, 2021, Docket NEPR-MI-2019-0016, <https://energia.pr.gov/wp-content/uploads/sites/7/2021/08/20210806-MI20190016-Resolucion-y-Orden.pdf>.

through the public corporation, together with local talent and organized communities to accelerate the installation of solar and storage systems at or near the place of consumption/use; and 3) break the cycle of repeated destruction and reconstruction of the vulnerable long-distance transmission system that often disrupts power service in Puerto Rico and avoid the waste of federal taxpayer funds on a transmission system that will be devastated by future hurricanes.

Puerto Rico is at a crossroads with respect to its electric system. One of the main issues confronting the territory is whether to use FEMA funds to double down on rebuilding antiquated 20th century infrastructure or to embark on the creation and construction of a 21st century electric system, based on laws that require the Puerto Rican government to shift to renewable energy and enable Puerto Rico residents to participate in this essential public service. Over 97% of Puerto Rico's electric energy comes from burning fossil fuels.¹⁴ The Queremos Sol civil society proposal ("We Want Sun," queremosolpr.com), endorsed by the groups joining in this testimony vigorously calls for the transformation of the Puerto Rico electric system as a public service including PREPA governance and the technology that empowers citizen participation as "prosumers"—producers and consumers of energy to achieve resiliency to the more frequent and intense hurricanes brought on by the climate crisis. Civil society in Puerto Rico favors rooftop solar as opposed to land-based utility scale projects that impact scarce agricultural land, ecological sensitive areas and open spaces.

Because PREPA and the Commonwealth of Puerto Rico are in bankruptcy, FEMA funds are the only viable way in which Puerto Rico can achieve its Renewable Portfolio Standard, renewable energy goals, and attain accessible electric rates. Financing of new power purchase agreements with PREPA as a credit counterparty would entail prohibitively high interest rates and financing costs that would lead to skyrocketing of the already astronomical electric rates that are currently about double the average U.S. rate.

Section 404 ("Hazard Mitigation") of the Stafford Act, as amended by the Disaster Recovery Reform Act of 2018 (Public Law 115–254, Oct. 5, 2018), provides that "The President may contribute up to 75 percent of the cost of hazard mitigation measures which the President has determined are **cost effective and which substantially reduce the risk of, or increase resilience to, future damage, hardship, loss, or suffering in any area affected by a major disaster** or any area affected by a fire for which assistance was provided under section 420. Such measures shall be identified following the evaluation of natural hazards under section 5165 of this title . . . and shall be subject to approval by the President." Stafford Act Sect. 404(a); 42 USC 5170c(a). Some of the projects to rebuild Puerto Rico's electric grid are proposed as hazard mitigation measures that must be guided by the goal of minimizing future damage to that grid and the suffering that results from such damage. Accordingly, FEMA is required to perform a cost-effectiveness analysis prior to funding projects such as those proposed by the Government of Puerto Rico. The Cambio-IEEFA study cited above shows that rooftop solar and storage is more cost effective than the projects proposed by the Government of Puerto Rico.

The current plan for FEMA funds would not only perpetuate dependence on the existing fossil fuel plants, but actually fund construction of new fossil fuel plants in Puerto Rico: the very first three very first three "Notable Projects" in PREPA's Updated 10-Year Plan are new gas-fired plants.¹⁵ PREPA senior executives have indicated that the funds for methane gas infrastructure and the reconstruction of the current T&D system will come from federal sources. Implicit in this approach is the presumption that the people of Puerto Rico will be getting a "free lunch" and that they can request large sums for infrastructure of doubtful utility and security because it is paid by the federal government and ultimately, taxpayers. This reflects a mentality of dependence driven by the methane gas/LNG industry and corporations that sell fossil generation units. The "free" methane gas infrastructure would tie Puerto Rico to methane gas-burning plants for decades and endanger public health and safety, almost certainly requiring repeated injections of federal funds to restore transmission lines downed, time and again, by storms and earthquakes.

¹⁴U.S. Energy Information Administration (EIA), *Puerto Rico—Territory Profile and Energy Estimates Overview*, <https://www.eia.gov/state/?sid=RQ>.

¹⁵New Black Start at Costa Sur, Emergency Generation at Yabucoa, Thermal Generation Feasibility Study at Palo Seco. Updated 10-Year Plan, submitted July 6th in PREB docket NEPR-MI-2021-0002, p. 15. See, <https://energia.pr.gov/wp-content/uploads/sites/7/2021/07/20210706-Joint-Motion-Submitting-Updated-10-Year-Infrastructure-Work-Plan.pdf>.

A true understanding of three points: price, reliability, and resiliency leads to the conclusion that FEMA funds should be invested in rooftop solar and storage to provide ratepayers accessible, reliable, and resilient energy.

Price: Multiple studies, cited in this testimony have shown the economic viability and benefits of rooftop solar and storage in Puerto Rico. The avoidance of transmission system costs makes rooftop/on-site solar more viable than centralized generation. Transmission costs represent a huge opportunity cost that displaces investments in renewables. Furthermore, fossil-fired plant externalities are imposing costs on environmental justice communities and increasing the social cost of carbon in Puerto Rico.

Reliability: The studies cited in this testimony demonstrate that a grid powered by rooftop solar and storage is more resilient, reliable and affordable than one powered by large, centralized plants. In the meantime, PREPA's dashboard of its system showed generation capacity, enough to meet peak load with the necessary reserve margin—when dispatched properly. Puerto Rico does not need new gas-fired plants.

Resiliency: The Puerto Rico grid depends on vulnerable long-distance transmission to provide power to northern Puerto Rico, especially the San Juan metropolitan area. Electrons from the plants in the south did not reach San Juan for months after Hurricane Maria: this demonstrates the vulnerability of the T&D system vertical poles, lines, towers and substations to hurricanes and multiple other natural events.¹⁶ Rebuilding and hardening the T&D system will not provide the resilience of rooftop solar and storage. These alternatives also have the advantage of avoiding impacts to scarce agricultural land, ecological sensitive areas, and open spaces. These alternatives also have the advantage of avoiding impacts to scarce agricultural land, ecological sensitive areas and open spaces.

Law No. 550, the Land Use Plan Act, as amended by Law No. 6 of January 3, 2014, requires guaranteeing that a minimum of 600,000 acres of agricultural land are reserved. The Land Use Plan and all planning instruments must establish a process to ensure that land suitable for agricultural production and animal husbandry is preserved. Puerto Rico has lost about 133,000 acres of agricultural land every five years, according to census data between 2002 and 2007. Agricultural land in Puerto Rico was reduced from 584,987 cuerdas/acres in 2012 to 487,774 acres in 2018, equivalent to a loss of 17%, or an annual loss of 16,202 acres. According to Dr. David Sotomayor Ramirez, Professor of Soils at the College of Agricultural Sciences of the University of Puerto Rico, Mayagüez Campus, most countries dedicate at least 41% of the area to agriculture, compared to 22% of Puerto Rico.

III. LUMA Energy Control Over Federal Funds, Conflicts of Interests and Potential Self-Dealing

The LUMA contract grants LUMA Energy control over federal funds assigned for the Puerto Rico electric system as detailed below.

1. LUMA participates and has veto power in the selection of the federal funds grant manager. Contract Section 1.1, page 17.
2. LUMA can request changes or modifications to the federal funding, including modifications to, or reallocations between, the project worksheets related to the T&D System prepared by FEMA pursuant to Section 428 of the Stafford Act or the Integrated Resource Plan. Contract Section 4.3(j), Pages 50-1.
3. LUMA, in conjunction with the Administrator determines that capital improvements are done to maximize the potential realization of the federal funding anticipated or received. Contract Section 5.9, Page 70.
4. LUMA has “complete flexibility, subject to compliance with the Contract Standards and prior consultation with, but not subject to approval by, Administrator or PREB, to (i) reallocate, accelerate or postpone expenditures within the approved Operating Budget, (ii) reallocate, accelerate or postpone expenditures within the approved Capital Budget—Federally Funded, subject to the Federal Funding Requirements,” . . . Section 7.3, Page 89.

¹⁶In 2005, Congress determined that rebuilding these lines over and over was not a cost-effective strategy: “. . . electric power transmission and distribution lines in insular areas [including Puerto Rico] are inadequate to withstand damage caused by the hurricanes and typhoons which frequently occur in insular areas and such damage often costs millions of dollars to repair,” 48 U.S.C.A. § 1492(5).

5. LUMA and its subcontractor will “deal with federal funds management” to manage “longterm recovery using federal funding on behalf of the Owner”. Page Annex II-39, Page (pdf) 207.
6. LUMA Energy, LLC, was created by Quanta Services and ATCO, an affiliate of Canadian Utilities these companies are expected to benefit from the billions of dollars in federal funds. LUMA’s parent company, Quanta Services plans to “compete for work associated with Puerto Rico’s electric T&D system modernization efforts that are separate from its ownership interest in LUMA”, “expected to be funded by U.S. federal disaster relief agencies and managed by LUMA.”¹⁷
7. The contract states that the Operator (LUMA) will work with IEM (as its subcontractor) to manage federal funds.
8. LUMA establishes a governance framework to manage longterm recovery using federal funds on behalf of PREPA. (VII. Federal Funds Procurement Manual).
9. LUMA may request changes or modifications to federal funding (including modifications or reassignments between project worksheets related to the T&D system prepared by FEMA pursuant to Section 428 of Stafford Act) or the Integrated Resource Plan. (LUMA contract page II-39, pdf 207).
10. **Luma Energy objects to PREPA using funds allocated for the electric system by FEMA and other federal agencies to install rooftop solar systems and batteries.** LUMA and its affiliated companies Quanta and ATCO plan to use the funds for transmission projects. In a proceeding before the Energy Bureau, one of the LUMA Energy representatives, Lee Wood, falsely alleged that FEMA would not allow the use of funds for behind the meter generation, that is, located in the residence or business of the consumer, mainly rooftop solar.¹⁸ Several recent communications from Members of Congress belie LUMA’s allegations.¹⁹

IV. Environmental and Climate Justice

The LUMA contract establishes that the grid work must “align” with the Grid Modernization Plan, which is the Puerto Rico government’s proposal to rebuild the existing grid rather than transform the electric system to provide the resilience that would make the difference between life and death in the face of disaster and shock events. PREPA’s Transmission and Distribution System Operation and Maintenance Agreement with LUMA Energy promotes the operation of centralized generation that lacks the life-saving resiliency of distributed renewable energy and storage and perpetuates environmental injustice. Rebuilding the T&D system to connect to these plants perpetuates their operation.

In addition to Executive Order 12,898 on Environmental Justice, the Biden Administration’s Executive Order, “Tackling the Climate Crisis at Home and Abroad” provides a further foundation for environmental justice claims and states in part as follows:

To secure an equitable economic future, the United States must ensure that environmental and economic justice are key considerations in how we govern. That means investing and building a clean energy economy that

¹⁷“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.” 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, <https://investors.quantaservices.com/news-events/press-releases/detail/277/quantaservices-and-atco-led-consortium-selected-by-the>.

¹⁸In the recording of the proceedings before the Energy Bureau, Luma’s representative tries to argue that PREPA cannot use the FEMA funds assigned to it to install solar systems with batteries for its subscribers. See, <https://www.youtube.com/watch?v=oGYujWJ8S7s> (minute 1:49).

¹⁹José Delgado, Alexandria Ocasio Cortez, Nydia Velázquez y Charles Schumer reclaman priorizar la energía renovable en Puerto Rico, Feb. 25, 2021, <https://www.elnuevodia.com/corresponsalias/washington-dc/notas/alexandria-ocasio-cortez-nydia-velazquez-y-charles-schumer-reclaman-priorizar-la-energia-renovable-en-puerto-rico/>.

creates well-paying union jobs, turning disadvantaged communities—historically marginalized and overburdened—into healthy, thriving communities, and undertaking robust actions to mitigate climate change while preparing for the impacts of climate change across rural, urban, and Tribal areas.²⁰

The communities near the existing fossil-fired power plants, most of which are located in southern Puerto Rico, are overburdened by the operation of the plants. The Guayama region is an environmental justice community with high poverty rates and where the majority of residents are Afro-Puerto Ricans.²¹ According to the Toxic Release Inventory this region suffers the greatest contamination of any region in Puerto Rico. The Guayama region also has among the highest poverty, unemployment, and school dropout rates in Puerto Rico. Simultaneously, the region has experienced a sharp decrease in medical services available to this environmental justice community with the closure of two hospitals and only one hospital currently in operation.

The LUMA contract will exacerbate PREPA's current system vulnerabilities and harm public health and safety. Hurricanes Irma and Maria demonstrated that the 230kV and 115 kV lines that carry power from the large, centralized power plants in the south to the north were a key vulnerability of the system. The LUMA contract entails continued reliance on centralized fossil fuel combustion plants and these transmission lines, and even contemplates more large, centralized plants, also connected to the grid through the same vulnerable transmission lines. The south-to-north transmission lines are vulnerable to extreme weather events, vegetation growth, wildlife impacts, lack of investment in maintenance, and difficult access to servitudes and easements, among others. The seismic events of 2020 further demonstrated the vulnerability of large, centralized plants and the affiliated transmission system: Costa Sur and EcoElectrica were both damaged.

The U.S. Geological Survey has determined that the areas where the San Juan and Palo Seco plants are located present high risk of liquefaction in the event of earthquakes. The Great Southern Puerto Rico Fault Zone runs through the Jobs Bay area where the Aguirre Power Complex and the AES coal burning power plants are located.²² The Palo Seco plant, depot and accompanying infrastructure are in a tsunami flood area. The Federal Energy Regulatory Commission earlier this year issued an Order acknowledging that regulators have not sufficiently analyzed the risk impacts to powerplants from more frequent and intense earthquakes in Puerto Rico.²³

The operation of all fossil fuel plants in Puerto Rico emit multiple contaminants that adversely impact public health and the environment. The Applied Energy System (AES) Corporation coal-fired power plant and the Aguirre Power Complex, located in southeastern Puerto Rico are the two primary sources of toxic emissions in Puerto Rico and disproportionately impact some of the poorest communities. These two plants also extract large amounts of freshwater from the South Coast Aquifer and have contributed to the water scarcity that led to water rationing in summer 2019 and in previous years. The AES coal burning power plant in Guayama transmits electricity to northern Puerto Rico, including the San Juan metro area and accumulates hundreds of thousands of tons of coal ash waste at its plant site. The facility and its polluting practices already contaminated part of the South Coast

²⁰ See, Exec. Order No. 14008, 86 C.F.R. 7619, Executive Order on Tackling the Climate Crisis at Home and Abroad, Jan. 27, 2021, Section 219, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>.

²¹ Hilda Lloréns, *In Puerto Rico, Environmental Injustice and Racism Inflammate Protests over Coal Ash*, December 8, 2016. <http://theconversation.com/in-puerto-rico-environmental-injustice-and-racism-inflammate-protests-over-coal-ash-69763>; Hilda Lloréns, *Puerto Rico's Coal-Ash Material Publics and the Summer 2019 Boricua Uprising*, February 25, 2020. <https://www.societyandspace.org/articles/puerto-ricos-coal-ash-material-publics-and-the-summer-2019-boricua-uprising>; Catalina De Onis, *Energy Islands, Metaphors of Power, Extractivism, and Justice in Puerto Rico*, June 2021, <https://www.ucpress.edu/book/9780520380622/energy-islands>.

²² Bachhuber, Hengesh, & Sunderman, *Liquefaction Susceptibility of the Bayamon and San Juan Quadrangles, Puerto Rico*, at Figure 6, PDF p. 30 (2008), https://earthquake.usgs.gov/cfusion/external_grants/reports/03HQGR0107.pdf (noting very high susceptibility zones in areas along the Bayamon coastal plain, Bahia de San Juan, and Laguna San Jose); Hengesh & Bachhuber, *Liquefaction susceptibility zonation map of San Juan, Puerto Rico*, in Mann, P. (ed.), *Active tectonics and seismic hazards of Puerto Rico, the Virgin Islands, and offshore areas: Geological Society of America Special Paper 385*, at 249–262 (2005).

²³ Federal Energy Regulatory Commission Order Establishing Briefing, Docket CP95-35-000. "There has been an increase in frequency and intensity of earthquakes on Puerto Rico since 2003."

Aquifer, the sole source of potable water for tens of thousands of people in Puerto Rico.²⁴

The Costa Sur and EcoElectrica plants in southwestern Puerto Rico both burn imported methane gas and also transmit energy long distance. Gas combustion is the substitution of one group of contaminants for others. The myth that methane gas is a cleaner energy source is a fallacy.

The LNG imported to Puerto Rico must be stored under cryogenic conditions and revaporized/regasified before it can be used at the plants. These additional processes add to the total emissions of LNG use in a way that exceeds the CO₂ emissions of other fossil fuels. Methane gas combustion also emits increased Volatile Organic Compounds (VOCs) such as formaldehyde, benzene, toluene, hexane, and styrene.²⁵

Multiple scientific studies, including a Harvard University report found that, “A small increase in long-term exposure to PM_{2.5} leads to a large increase in COVID-19 death rate, with the magnitude of increase 20 times that observed for PM_{2.5} and all-cause mortality. to air pollution and COVID-19 mortality in the United States. The study results underscore the importance of continuing to enforce existing air pollution regulations to protect human health both during and after the COVID-19 crisis.” The specific findings demonstrate that, an increase of only 1 ug/m³ in PM_{2.5} is associated with a 15% increase in the COVID-19 death rate, at a 95% confidence interval.²⁶ Particulate matter is emitted by electric power plants, motor vehicles and other sources of air contamination. Continued reliance on these plants for energy transmission to San Juan and northern Puerto Rico is another climate disaster in the making.

Although the LUMA contract has especially ominous implications for environmental justice communities, the LUMA scheme does not bode well for the health and safety of the general population in Puerto Rico. LUMA can abandon the tasks required under the contract after PREPA has been dismantled and when reinforcements for the electric system are most needed and almost at any time. In an extended force majeure event, LUMA, as Operator has the right to terminate the contract, in the event that the force majeure event continues for a period longer than eighteen (18) consecutive months and materially interferes, delays or increases the cost of initial transition services (front-end) or operation and maintenance services (O&M). (LUMA contract page 125, pdf 132). In addition, according to the contract, “force majeure event” is defined so broadly that it excuses LUMA from performing the services required for almost any reason, including an interruption or blackout event (page 22, 29), computer sabotage or virus, quarantine, epidemic, or civil disobedience; any event that causes any Puerto Rico or federal government agency to declare any part of the geographical area of the T&D system as part of a “disaster zone”, “state of emergency” or any other similar declaration; and a change in the law. (LUMA contract pages 14-5, pdf 22. In sum, the definition of force majeure in the contract is very broad and allows LUMA to evade responsibility after receiving the benefits of the contract.

V. Conclusion

For the reasons summarized in this written testimony, we urge the House Committee on Natural Resources to investigate PREPA’s Transmission and Distribution System Operation and Maintenance Agreement with LUMA Energy, LLC and the role of the Federal Oversight and Management Board in the imposition of the LUMA contract and the Puerto Rico electric crisis. We ask this Committee to urge the Federal Government to earmark the historic amount of FEMA funds allocated for the electric system for on-site and rooftop solar and battery systems and similar alternatives that will provide life-saving electric service to the residents

²⁴ EPA, 2019 TRI Factsheet—Guayama, PR (Oct. 2020), https://enviro.epa.gov/triexplorer/tri_factsheet.factsheet?pzip=&pstate=PR&pcity=GUAYAMA&pcounty=&pyear=2019&pParent=TRI&pDataSet=TRIQ1; U.S. Dept. of Interior, USGS Water Use Data for Puerto Rico (2021), <https://waterdata.usgs.gov/pr/nwis/wu>; Jason Rodriguez, Acuífero del Sur: Retrocede la única Fuente de agua potable de 30 mil sureños, May 29, 2021, <https://www.periodicolaperla.com/acuifero-del-sur-retrocede-la-unica-fuente-de-agua-potable-de-30-mil-surenos1/>; Report On Corrective Measures Assessment Aes Puerto Rico—Agremax™ Staging Area Guayama, Puerto Rico Haley & Aldrich, Inc. (2019), <https://www.aespuertorico.com/sites/default/files/2021-02/Corrective-Measures-Assessment-English.pdf>; AES Puerto Rico Coal Combustion Residuals Rule Compliance Data and Information, <https://aespuertorico.com/ccr/>.

²⁵ Public Comments by Pediatric Environmental Health Specialty Unit (PEHSU), Mount Sinai Medical School, FERC Docket CP13-193-000 at 1-2. <https://elibrary.ferc.gov/ELibrary/file/download?fileid=01c6d80b-66e2-5005-8110-c31fac91712>.

²⁶ Wu, X., Nethery, R.C., Sabath, M.B., Braun, D. and Dominici, F., Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis *Science advances*, 6(45), p.eabd4049, (2020), <https://projects.iq.harvard.edu/covid-pm>.

of Puerto Rico and include an inquiry on the proposed use of FEMA funds for electric system work to ensure that they are invested in a cost-effective manner to provide accessible, affordable, renewable, reliable and resilient electric energy. The use of the historic amount of FEMA funds allocated for the electric system will determine the viability of Puerto Rico for generations to come.

Attachment

**List of Puerto Rico and Stateside Organizations
that join in the testimony on the
PREPA Post Implementation of the LUMA Transmission and Distribution
Contract
Presented by Ruth Santiago, Esq.**

Puerto Rico Organizations

1. Alianza Comunitaria Ambientalista del Sureste
2. Amigos del Río Guaynabo
3. Amnistía Internacional-Puerto Rico
4. Asociación de Empleados Gerenciales de la AEE
5. Asociación de Psicología de Puerto Rico
6. Boutique Comunitaria
7. Campamento Contra Las Cenizas en Peñuelas, Inc.
8. Ciudadanos en Defensa del Ambiente
9. Clínica Legal Psicológica
10. Coalición Organizaciones Anti Incineración
11. Colectivo Editorial Luscinia
12. Colegio de Profesionales del Trabajo Social de Puerto Rico
13. Comité Dialogo Ambiental, Inc.
14. Comité Yabucoño Pro-Calidad de Vida
15. Cuatro Costas
16. El Puente: Enlace Latino de Acción Climática
17. El Punto en la Montana
18. Frente Unido Pro-Defensa Del Valle De Lajas, Inc.
19. Hermanxs de la Calle
20. Hispanic Federation
21. Impacto Juventud
22. Intercambios Puerto Rico
23. JunteGente
24. Mayagüezanos por la Salud y el Ambiente
25. Proyecto Vida. Acción. Salud (VAS)
26. Red Continental Cristiana por la Paz
27. Sierra Club Puerto Rico
28. Surfrider Foundation Rincon
29. Taller de Psicología Social Comunitaria
30. Unión de Trabajadores de la Industria Eléctrica y Riego
31. Urbe A Pie

Stateside Organizations

1. 350 New Orleans
2. ANAD
3. Boricuas Unidos en la Diáspora (BUDPR)
4. Businesses for a Livable Climate
5. CA Businesses for a Livable Climate

6. Call to Action Colorado
7. Catholic Network US
8. Cleveland Owns
9. CO Businesses for a Livable Climate
10. CODEPINK Golden Gate Chapter
11. Community Power
12. Cooperative Energy Futures
13. Earthjustice
14. Fairbanks Climate Action Coalition
15. Hispanic Federation
16. I-70 Citizens Advisory Group
17. Labor Council for Latin American Advancement NYC Chapter
18. Local Clean Energy Alliance
19. Montbello Neighborhood Improvement Association
20. Network for a Sustainable Tomorrow
21. North Range Concerned Citizens
22. People Power Solar Cooperative
23. RapidShift Network
24. Redwood Energy
25. Renewable Energy Worcester
26. Roxanna Smith Communications
27. Sierra Club
28. Small Business Alliance
29. Solar United Neighbors
30. SolidarityINFOService
31. Soulardarity
32. System Change Not Climate Change
33. The Boricua Solidarity Movement
34. The Democracy Collaborative
35. The Green House Connection Center
36. Unite North Metro Denver
37. Wall of Women
38. Womxn from the Mountain

The CHAIRMAN. Thank you very much. Let me thank the witnesses for their valuable testimony, and now turn to the members of the Committee for their questions and comments.

I will forego my initial questioning, and turn to my colleague, the Chair of the Insular Affairs and Vice Chair of the Committee, Mr. Sablan.

You are recognized for 5 minutes, if you have any questions.

Mr. SABLAN. Yes, I do, Mr. Chairman, thank you very much.

I cannot seem to find Mr. Fernando Gil on my screen.

Mr. Gil, are you with us, sir?

Mr. GIL. Yes, sir. As I mentioned, we had technical difficulties in my testimony. That is why we are basically navigating without any type of visibility.

Mr. SABLAN. Can you hear me?

Mr. GIL. I can hear you, sir—

Mr. SABLAN. All right, thank you. And let's be mindful of my 5 minutes.

Mr. Gil, what involvement have you had, and what specific actions have you taken to ensure FEMA and CDBG monies are

invested in full alignment with the President's climate goals for Puerto Rico's renewables public policy?

And who do you believe is responsible for the persistent delays in the flow of funds, and what congressional action do you think would help?

Two questions in one.

Mr. GIL. Thank you for the question. For what I grasp about it, actually, in terms of a CDBG funding, right now we have—the Department of Housing, which I don't manage any more, or being there any more, has \$1.9 billion authorized for it. They are working on the action plan that actually goes through a process that tends to have community participation.

Regarding the FEMA funding, we have regular oversight from not only FEMA, but from the COR3. There is a plan in place for it, and that plan complies with the IRP and all the applicable—

In order to speed up the process, we actually—within the means that we have, we can see which kinds of projects actually can be accelerated in a more speedy way, and also see which other projects that are not as visible or important, in terms of IP technology and other things, can run parallel to, instead of waiting for other quarters to implement it.

Mr. SABLAN. Well, yes, thank you. But there have been, from what I have heard from testimonies, persistent delays in the flows of funds. So, who do you believe is responsible for these delays?

Mr. GIL. Sir, actually, the delay was basically put out there by the Office of Inspector General of HUD, and where basically it is determined that the HUD Administration may, more probably than not, back in the last administration, withheld funds.

And, obviously, from that time of having all the action plans approved to—the signature of that grant agreement that basically gives you the ability to execute all the programs, more than 300 days went by, and that is unacceptable, because then what happened was it takes you out from the planning process, and then keeps you navigating on a dark sea, in that sense, that you cannot see what is going to happen, because you are not aware, or you are not secure that that funding is secure there.

So, being that, I know that this Administration—

Mr. SABLAN. So, it is HUD. HUD has been responsible for the delay of the funds, in your opinion.

Mr. GIL. Well, in the funds, there was actually \$1.9 billion that was appropriated back in the supplemental of 2018. That \$1.9 billion related to the power energy—the notice came out recently, after the Biden administration took over.

Mr. SABLAN. Yes, thank you.

Chairman, I have other questions I will submit for the record.

The CHAIRMAN. Thank you, Mr. Sablan. Let me now turn to the gentlelady from Puerto Rico, Miss González-Colón.

You have 5 minutes. Thank you.

Miss GONZÁLEZ-COLÓN. Thank you, Mr. Chairman. I know this is a good panel, we have many people here. And with the situation on the island that today you have power, maybe tomorrow you will not, I think there are several questions that need to be answered.

The first—and I will submit some questions for the record, as well—but I think we are hearing here about—I see three major issues.

The first one, how good is our infrastructure right now? Is it going to handle any hurricane? Can it handle any other situation?

The second one, how reliable would that be, knowing that there is a goal of 2050 to have 100 percent renewables. But then Puerto Rico right now just got 2 percent of renewables happening.

And I know some of the witnesses established their goal, or their aspiration, to have Federal money be earmarked for renewable communities in terms of establishing that kind of reliable service. But my concern here is this is not just using batteries or solar panels. We are talking about industry. We are talking about commercial, residential. Are we ready to move completely to renewables today, without having the proper backups in terms of satisfying the demand?

I think we should be working to do both ends, in terms of looking to the renewable integration that should be achieved, but at the same time allowing stable energy on the island, certainty in terms of the energy that is provided for not just communities, but the industry itself.

So, my question will be to PREPA. It could be answered both by the Chairman of the Board or the current CEO of PREPA, Engineer Colón.

And the first one will be in terms of the grid itself. Is it in a condition to handle the load of PREPA's generation?

And second, how resistant is the infrastructure today to handle a hurricane?

And I would love if you can go directly to the point, and be mindful of the time.

Mr. GIL. Mr. Colón will answer that question, since it is a technical one.

Mr. COLÓN. Thank you, Madam Congresswoman. I am Josué Colón, I am the newly appointed CEO for PREPA. And my answer for your question is that the generation system of Puerto Rico, as today, is not as reliable as it should be.

As you should know, we were handling many outages on load shedding in the past 2 months. Right now, we are better handling the load the system is carrying out, but in general, our system is still fragile, and we are trying with the resources that we have to improve the fleet that we have, day by day.

Miss GONZÁLEZ-COLÓN. Question: how much integration of renewables can we really achieve by 2025?

I know the law mandates it, so I would like to know if it is possible. And with the results that you have in the current situation that is real, can you have at 2025, or even 2050, the complete goal of renewables?

Mr. GIL. OK, I will handle that question, based on the analyses we are running, Congresswoman González. Basically, there is a total of 3,750 megawatts that are being programmed for it, and we are running out of space for it. Like, already, the first phase is for 1,000 mega, with 500 of battery power, also.

And there is another one, other tranches that are coming up for 500 megawatts and 250 megawatts for storage capacity—six months of difference.

So, basically, before 2025, we are trying to achieve that goal. Obviously, there are other factors to consider, based on the grid. And actually, the new batteries that we have, or the existing batteries right now, as it is, our grid was designed to provide energy, not to receive it in that sense.

So, it is not that it is not feasible or it is not possible, but the grid, as it is right now, is not as efficient as it will be when the grid is ready.

Miss GONZÁLEZ-COLÓN. Answer me this question yes or no. The dozen or so LNG power units proposed in the PREPA and FEMA action plan, will these in any way prevent the continuance of the conversion to renewables?

Mr. COLÓN. Well, I am going to answer that question. In my personal opinion, the answer is yes.

Any modernization that can be accomplished to the actual fleet with new technology that uses natural gas are going to help PREPA help the system to handle it better, the introduction of new renewable energy sources. That is a matter of technical issues, and those kind of technologies are going to be more helpful for the system to handle new injection of renewable to the generation of PREPA.

Miss GONZÁLEZ-COLÓN. Thank you. My time is up, so I yield back, Mr. Chairman.

The CHAIRMAN. Thank you. The gentlelady yields. Let me now turn to the gentlelady from New Mexico, Representative Stansbury. You are recognized for 5 minutes.

Ms. STANSBURY. Thank you, Mr. Chairman, and thank you to everyone for convening today's important hearing.

I recently had the opportunity to visit Puerto Rico and Vieques, and saw firsthand myself the beauty of the island and, of course, the continued impacts that the hurricanes have had on basic infrastructure, including the electric grid. In fact, while I was visiting, numerous people shared that they had lived for months without electricity on Vieques in the wake of Hurricane Maria. And, as we have heard this morning, many have continued to experience blackouts across the island as part of their daily lives.

Access to electricity is not only a necessity, but a basic human right. Without it, medical facilities cannot operate. Children cannot study. Businesses cannot remain open. And daily life is disrupted in countless ways.

Since LUMA took over energy transmission and distribution, residents are reporting that they are paying twice as much as mainland customers for electricity, and that power is going out three to four times a day. These blackouts affect, as we have heard this morning, hundreds of thousands of people, and demonstrate the clear need to modernize Puerto Rico's electric grid and address these operational issues.

This challenge is particularly acute in Puerto Rico, in large part because it is an island, but it is also a challenge that communities across the United States are facing. In fact, just last year we saw

in Texas, as a downed electric grid affected millions who had no heat and water for days in the wake of a major storm.

The need to modernize our grid across the United States has reached a major inflection point, in terms of ensuring the safety and well-being of our communities, and meeting the moment of our clean energy revolution and addressing climate change. That is why in New Mexico, I worked with colleagues on both sides of the aisle to help pass a bipartisan grid modernization bill just this last year, because modernizing our grid is both a humanitarian issue and a necessity for tackling climate change.

The people of Puerto Rico, as has been discussed, recognize the importance of this transition and the need for renewables. But unfortunately, in February of this year, 16 commercial solar projects that would have generated 593 megawatts of electricity were rejected, leaving the island dependent on a coal-fired power plant and non-renewable resources. The transition to renewables and modernization of the grid are crucial to the residents of the island, and also to climate action across the country and the planet.

As the devastation of Hurricane Maria has demonstrated, and as the world watched, we know that the Federal Government did not respond and act in good faith, and we are still seeing those impacts today, and I believe it is the Federal Government's responsibility to ensure that our communities are safe and their basic needs are met.

So, I believe it is our responsibility, as Congress, to not only conduct oversight, but to also support the needs of Puerto Rico and the communities in addressing these issues. The people of New Mexico and my district stand united with the people of Puerto Rico in demanding energy justice and grid modernization, and the social, economic, and environmental imperative of doing so.

With that, I would like to just take a moment to ask a question of Mr. Gil.

Mr. Gil, thank you so much for being here today. It appears—and as was just asked—the Fiscal Oversight and Management Board recently voted to reject this 450 megawatts of solar projects, and has recently stated that it may reject up to 1,000 megawatts of renewable projects that are currently being teed up. Combined with the other challenges that we have heard about this morning in terms of providing electricity, it is clear that the system is in dire need of modernization.

We have heard from a few of the witnesses this morning, but can you please share with us: (1) what you believe can be done and what is needed to bring these renewables on-line and transition the grid to a more stable and resilient power system; and (2) how the Federal Government, especially as we are working right now to pass an infrastructure and reconciliation bill, can help and support Puerto Ricans and the utility as it is embarking on building a more resilient grid?

Mr. GIL. Thank you, Congresswoman, for that question. And from the complexity of it, obviously, I mean, there is a process that they started back in 2012. And almost the same amount that we are putting out there for renewable energy, more than 3,000 megawatts, was supposed to be already built.

Things happened, that they took away those. Actually, recently, we submitted to the FOMB around 150 megawatts only that they were requested that they comply with our MTRs, and they were also the amount that—right now.

So, answering to your question, it is not that we are saying that it cannot be done, but right now it is not feasible, and it can bring some problems to the grid, as it is. Nonetheless, some combination of repairs of the turbines, that they are completely broken, or they can be changed with different sorts of power or gas—for example, changing bunker fuel for LNG—will give a more sustainable—and can help us, obviously, move into the future with a more stable generation fleet, and at the same time looking forward to comply with all the Act 17 mandates regarding renewables.

The CHAIRMAN. Thank you.

Ms. STANSBURY. Thank you. And with that, Mr. Chairman, I yield back.

The CHAIRMAN. The gentlelady yields, thank you very much. Let me now recognize Representative Wittman for his 5 minutes of questions, comments.

Sir, you are recognized.

Dr. WITTMAN. Thank you, Mr. Chairman. I would like to yield my time to Representative González-Colón. And thanks again, Mr. Chairman.

The CHAIRMAN. Thank you, sir.

Miss Colón?

Miss GONZÁLEZ-COLÓN. Thank you, Representative Wittman, for yielding, I really appreciate that.

My question will be to the LUMA CEO now. And I want to say thank you to both of the panelists, witnesses, that are here today.

We did a roundtable 2 weeks ago with stakeholders, just to know where is the status of all the Federal funds that are being allocated to the island. We are talking about \$9.6 billion that were approved by Congress in 2018 and 2019 for the reconstruction of the power grid on the island, and some generation maintenance.

At this time, none of those funds are being used—again, \$9.6 billion that are a Federal mandate. And one of the reasons for that is that FEMA just made those funds available last year. So, that means that LUMA needs to provide the scope of work to FEMA just to get an approval for that plan, and then begin those projects and receive part of the funds in a reimbursement process.

I know FEMA recently changed the way to manage big projects like this, to try to make them faster. And I know COR3, the agency on the island, and PREPA are working to that end.

But again, I think the short explanation I just did is one of the main concerns. Why, if we do have \$9.6 billion in Federal funds to get a renewable system, to change the power grid, make it more resilient, and help with the generation, as well, why are those funds not being used?

My question to LUMA right now will be how long it would take LUMA to provide to COR3 or PREPA the scope of work for the change and the breakthroughs from transformers and many others in the transmission and distribution area?

Mr. STENSBY. Thank you very much, Commissioner, and I appreciate the opportunity again.

And I do want to say that grid modernization is exactly a fundamental element of what LUMA is here to do.

Today, we are building this pipeline of projects, and today there are 65 projects that represent approximately \$2.8 billion that presently have received FEMA initial statements of work, and that allows us to proceed with preliminary engineering, with hazard mitigation efforts, and with development of EHP, or environmental and historic preservation requirements. Those 65 projects consist of approximately 23 transmission projects, 23 distribution projects, and 15 substations.

The next step is to carry out that preliminary engineering. There are six architecture engineering firms engaged, and we then bring back a revised or more fully developed statement of work for FEMA approval. Once we receive FEMA approval, we then move into detailed engineering and procurement, and eventual construction.

We are optimistic that the leading project—so those projects that are most advanced—are able to be out in the marketplace for construction contracts into 2022, and we are optimistic that we will be able to put a shovel in the ground in the second quarter of 2022.

I think it is vitally important that we start priming the pump, if you like. There are many other projects behind that that have received PREB approval. And as I say, this is a large pipeline of work, but I think it is critical that those first projects start.

As my fellow witness from COR3 described in his testimony, there are many complexities with regard to matching, and many other—

Miss GONZÁLEZ-COLÓN. I know, I know the complexities. What is going to be the timeline for submitting the scope of work recommendations to FEMA to see the transmission and distribution of funds?

Mr. STENSBY. For those very early projects, we would hope to get those statement of works back into FEMA by the end of the year, or early next.

Miss GONZÁLEZ-COLÓN. OK. So, you agree with me that some of the transformers and the breakers can be taking 1 or 2 years of manufacturing, correct?

Mr. STENSBY. Absolutely. Large power transformers, breakers, certainly in today's supply chain environment, often have between 6 and 18 month lead times.

We are presently doing work to work with manufacturers and to develop a supply chain way, if you like, to pre-order some breakers and some transformers in order that we can better take advantage of actually getting substations into operation.

Miss GONZÁLEZ-COLÓN. Thank you. And I want to be mindful of the time, but I just make this question to let the people know that it is not just when the documentation is going to be submitted to FEMA, it is how long it would take to have 1 or 2 years of just manufacturing to get the transformer.

With that, I yield back.

The CHAIRMAN. OK, the gentlelady yields. Let me now turn to the gentlelady from New York.

Representative Velázquez, you are recognized.

Ms. VELÁZQUEZ. Thank you, Mr. Chairman.

Mr. Gil, can you please expand on the outages in Monacillo and Costa Sur? Were they caused by transmission issues?

Mr. GIL. I am sorry, I would like to yield that question to the technical engineer, Josué Colón.

Mr. COLÓN. Thank you for your question, Madam Congresswoman.

Recently, events that happened in the generation feed that caused load shedding that happened in the last 2 months were related to some technical or mechanical problems that happened on the south coast, Units 5 and 6.

Ms. VELÁZQUEZ. Were they caused by transmission issues? That is my question.

Mr. COLÓN. OK, now I understand.

Well, on Unit number 6, the failure that happened on the LP pressure of the turbine, we have information that the cause initiated with a failure on a transmission line. But specifically, if we can achieve or assign that failure to the transmission line alone, no, we don't have that kind of information at this point.

Ms. VELÁZQUEZ. Mr. Gil, you make reference to Costa Sur, where, in your statement, you alluded about generation issues, didn't you?

Mr. GIL. Yes, I did, Congresswoman. And actually, it was on August 22, and the transmission line fault led to a voltage fluctuation that affected generating facilities in the south, including Costa Sur.

Ms. VELÁZQUEZ. OK.

Mr. GIL. Those fluctuations actually caused Costa Sur's Unit 6 to go off-line, and damaged the steam turbine rotor—

Ms. VELÁZQUEZ. OK. Thank you. My time is limited.

Mr. Stensby, if generation is the issue, then why is it taking longer to repair interruptions since LUMA took over?

Mr. STENSBY. I think we need to understand, Congresswoman, that both the transmission distribution and the generation system is in a very challenging and precarious state. I don't think it is one or the other. I think it is both, for sure.

Some people are seeing shorter outages. Some people are, indeed, seeing longer outages since LUMA took over, and I did talk about some of the early—

Ms. VELÁZQUEZ. Well, in fact, during the months of June, July, and August 2021, the average time for repairs was 323 hours, compared to PREPA's 155 hours last year, when PREPA was managing transmission and distribution.

Mr. STENSBY. Yes, and those—

Ms. VELÁZQUEZ. And those are the facts.

Mr. STENSBY. And those are under-reported statistics that we showed in front of the PREB from last year, and I did talk about some of the challenges we had in actually getting our equipment and our teams to work in June because of, frankly, union blockades.

But yes, we are indeed—

Ms. VELÁZQUEZ. Sir, how many linemen does LUMA currently have who are employees and not hired contractors?

Mr. STENSBY. We have approximately 900 employees in the field that you would call the equivalent of what PREPA used to refer to as line workers.

Ms. VELÁZQUEZ. And given the current energy crisis in Puerto Rico today, are you planning to hire more?

Mr. STENSBY. We will continue to train, and we will continue to hire more, indeed, especially for the large amount of FEMA and rebuilding work that will be required—

Ms. VELÁZQUEZ. OK, out of the 900 workers that you have today, how many of those had no experience working on Puerto Rico's electrical system prior to June 1?

Mr. STENSBY. I would say a very large portion of those have Puerto Rican experience, but I don't have the exact number, ma'am.

Ms. VELÁZQUEZ. Can you please provide the exact numbers to the Committee?

Mr. STENSBY. Yes.

Ms. VELÁZQUEZ. Sir, how many LUMA employees and executives earn over \$200,000? And how many earn over \$500,000?

Mr. STENSBY. I am not going to provide salary information regarding our employees, ma'am.

Ms. VELÁZQUEZ. You are not? So, sir, do you believe in transparency?

Mr. STENSBY. I completely do, which is why we were posting customer outages when PREPA did not—

Ms. VELÁZQUEZ. So, why do you refuse to this day to comply with the request from the Puerto Rican Legislature, whose responsibility is to enact public policy based on what is working and what is not? And if they don't have that information, how do you think the Puerto Rican Government could exercise oversight?

Mr. STENSBY. There is substantial oversight under our contract. It follows Act 120, both from the PREB, from the P3 Authority, and from PREPA. And LUMA is in complete compliance with that oversight, and all of that, all of those laws.

The CHAIRMAN. Thank you.

Ms. VELÁZQUEZ. I yield back, Mr. Chairman.

The CHAIRMAN. The gentlelady yields. Let me now invite Representative Gohmert.

You have 5 minutes. Sir, you are recognized.

Mr. GOHMERT. Thank you, Mr. Chairman. And I appreciate the witnesses being here today.

Since the Texas grid was mentioned earlier, let me point out Texas had been spending a great deal of its resources in moving toward what is called green energy, with more solar, more wind-mills, and what not. If that is what any area relies on, there are going to be times when you don't have energy, and that means you have to have twice as many transmission lines going from something that you know you can count on to the same users.

But aside from the additional cost, the Texas grid went down earlier this year, but there had been a study previously, an analysis, that indicated that Texas needed to winterize its natural gas facilities so that that would always be there. Well, Texas was so busy trying to be green that they didn't winterize what was needed

in time of emergency. So, those were areas that froze up because of the winter storm.

That is probably not going to be a major problem for Puerto Rico, having facilities freeze up. But it does point to the fact, again, if you are relying totally on green energy, you better have standby ready to go. And Texas, unfortunately, didn't, due to this pushing of more green energy without taking care of what you could rely on in a disaster.

And by the way, the \$2.2 billion in grants and Federal loans to the green energy concave mirrors that magnified sunlight at three different towers, they burned up one of the towers. So, in a quick, cheap way to deal with it, they quickly built a natural gas facility. So, I would just encourage that for Puerto Rico's consideration. It is cheap. It helps clean up the air, and can be amazingly helpful.

Mr. Laboy, I wanted to ask you—and if it has been answered, I missed it, and I apologize—but how much damage remains unrepaired, unfixed, unreplaced from prior hurricanes and storms with regard to the grid, or the generation of electricity?

Mr. LABOY. Yes. So, first of all, again, as I stated in my testimony, our role, as recipients and administrators, is to provide the technical support to the subrecipient—in this case, PREPA.

Mr. GOHMERT. OK, so you don't know.

Let me ask, is there anybody that knows how much was damaged in prior storms in the way of generating facilities or capacity or grid that is not repaired?

[No response.]

Mr. GOHMERT. Anybody know?

Well, if nobody knows, out of these experts—yes, please.

Mr. STENSBY. I can offer—and perhaps Fernando Gil can chime in—but the vast majority of the FEMA funding that has been assigned for the T&D system here is a result of the storms, and then the Build Back Better exercise.

I can tell you today that very little of it has been fully restored to a new and fully functioning system. That is, in fact, the exercise that is in front of us.

Mr. GOHMERT. Well, OK, that is what I wanted to know, and that sounds like—

Dr. IRIZARRY. Congressman?

Mr. GOHMERT. Yes, go ahead.

Dr. IRIZARRY. My name is Agustín Irizarry.

Mr. GOHMERT. Right, right.

Dr. IRIZARRY. About a year after Hurricane Maria, 99 percent of the people in Puerto Rico had electricity. It took a year or so, but the system was restored.

Mr. GOHMERT. Yes, but apparently there is still a lot of equipment and things that need to be replaced or repaired. But I mean, we have that situation here. You run out of electricity, you can get it up and going, but for the long term it is not helpful.

Thank you, Professor. It just sounds like we have a lot of work remaining to do in Puerto Rico, and I appreciate your being here.

I yield back.

The CHAIRMAN. Thank you, Mr. Gohmert. Let me now invite the gentleman from Florida.

Congressman Soto, you are recognized, sir.

Mr. SOTO. Thank you, Chairman. Puerto Rico faces major challenges. The people need reliable power. The blackouts need to stop. And we also need to work together to boost renewable and clean energy.

I want to talk first about reliable power. As a brief history, Puerto Rico had a nearly totally government-run utility system, PREPA. This is an outlier. No state has a fully run government system. All states have public and private systems to encourage competition and avoid political patronage and corruption.

As a result, their focus for years was on keeping rates low, without making long-term investments to maintain and upgrade the grid. Add in an economic crisis, the debt, Hurricane Maria, and earthquakes. That has all decimated, together, a poorly maintained system. And now the people suffer as a result.

The Puerto Rican Government finally made a decision to increase competition by contracting with LUMA to handle transmission this summer. LUMA's job is to maintain and fix the very power lines that have been neglected for decades. We applaud LUMA for working with IBEW. IBEW trains some of the best electrical workers on the planet.

Sadly, the transition hasn't been smooth. Many PREPA employees—I have heard over a third, and we will get to that in a moment—didn't transfer to work over to LUMA. I understand the disappointment of some local unions in Puerto Rico who opposed the transition, even after the transfer happened. But sadly, this discouragement slowed down the process of repairing and maintaining the grid. It slowed down the hiring of new people, and training of new people and existing folks from PREPA, and contributed to the blackouts.

We need to conduct meaningful oversight of LUMA and stop the blackouts. But this Committee also can't be blind to the facts that they inherited—LUMA and IBEW—inherited a disaster of a grid just a few months ago this summer.

The second point I want to make is on renewable energy. We applaud the Puerto Rico Legislature for 100 percent renewable by 2050. This goal was incredible to boost renewables, especially rooftop solar, wind, hydro, and other clean electricity. The reality, though, is a stark difference. There are six diesel plants: four fuel oil plants, one coal plant, and one gas plant currently operating.

First of all, diesel and fuel oil, it is the most expensive, it is the highest pollution, and it is the stone ages. No one in the states has this anymore. The diesel fuel oil and coal plants have to go, and that is my message to PREPA and to the Fiscal Board.

Natural gas is a good bridge fuel, and the future is in wind and solar. PREPA must take seriously the Puerto Rico Legislature's new renewable goals. This Committee supports those goals. We urge PREPA and the Fiscal Board and, most importantly, the Puerto Rico Government to work with community solar organizations for rooftop solar, make conscious efforts to increase wind, including in the south, and, overall, to increase resiliency to combat climate change and energy independence.

The bottom line: we need to conduct meaningful oversight. And the good news is we have Hurricane Maria recovery funds, and soon Build Back Better funds to help with this transition: \$1.9

billion for grid funds that have already gone out to notice; \$12.1 billion in HUD funds that have been released recently by the Biden administration.

Mr. Stensby, my question to you, what was the percentage of employees that didn't transfer over from PREPA to LUMA, and how has that affected blackouts?

Mr. STENSBY. Thank you very much, Congressman. Two points that I would like the opportunity to make is that through our recruitment process, we put training and safety of all of our people first, and so we were very thorough—

Mr. SOTO. Mr. Stensby, I apologize, but my time is limited. I just need to know how many folks transferred over.

Mr. STENSBY. So, of the slightly over 3,000 employees we have today, almost 1,300, or roughly 1,300, came from PREPA.

Mr. SOTO. OK, so a large share did not make the transition.

Mr. Gil, what do you think it is going to take to transition away from diesel, coal, and fuel oil, the dirtiest of fuels, the most expensive of fuels for Puerto Rico?

Mr. GIL. Congressman Darren Soto, thank you for everything that you do for Puerto Rico.

But, basically, the goodwill, the ability, and the possibility of the people making that, we need to change that. That is not one thing or the other, that we have to be in balance here, that we have to drive—like, obviously, LNG, there is a combination that you can use, like hydrogen in it, and create green hydrogen. It is more efficient, it reduces 70 percent the CO₂ emissions from it.

So, it is a combination, and then transition when that technology is even more advanced. Solar technology and renewable technology advance in a second, as computers did back in the day. So, we need to, obviously, make that balance, and be careful about the environment, but we have to also take into consideration Puerto Rico is a small island.

The PV panel systems, they cannot be disposed in landfills. They should be recycled in the United States. There are not enough recycling facilities for PV panels. So, those are the things that, in terms of taking care of the environment, we have to consider for energy, and specifically for the betterment of our people.

Mr. SOTO. Colleagues, let's stop the blackouts, and let's make sure we ensure a more clean energy and renewable energy. Let's focus on the achievable, and we can do it together.

Thank you, Chairman. I yield back.

The CHAIRMAN. The gentleman yields. Thank you. Let me now ask Representative Graves.

You are recognized for 5 minutes.

Mr. GRAVES. Thank you, Mr. Chairman. I want to thank the witnesses for joining us today. Certainly, a topic that we have spent a lot of time on in this Committee. And again, thanks for being with us.

I guess the first question, maybe for Mr. Fontanés—I am not certain if you have expertise here or not, but I heard questions earlier about the cost effectiveness of this agreement with LUMA. Was that a sole source process? Was it an open competition? How did that occur?

Mr. FONTANÉS. Thank you, Congressman. This was, actually, a long process that took close to 2 years. We had five participants in the procurement process, originally.

At the end, we received two different proposals. And LUMA was the entity selected, so it wasn't a sole source. It was a competitive process through the P3 Act, and our structure and our process, and we ended up with two solid proponents out of the five that were originally qualified presenting proposals.

Mr. GRAVES. Thank you. And is it your opinion that LUMA, at this point, is complying with the contract requirements that they are obligated to comply with?

Mr. FONTANÉS. From a contract perspective, they are complying with the requirements of the contract. Yes.

Mr. GRAVES. OK, thank you. It was noted earlier that there was some lack of transparency, or there wasn't value to taxpayers, and I guess I was struggling with understanding that. But I thank you for clarifying.

Mr. STENSBY, this really is an amazing situation. I represent South Louisiana, which we certainly have been subject to hurricanes. But every time I look back at this, I look at the amount of money that is being spent in building the system back.

Certainly, you all have experience operating around the United States and Canada, I believe. Have you ever seen a situation where you have a utility operating like this, perhaps with the percentage of debt that is out there, the number of, I guess, the amount of theft of electricity that is out there? Have you all ever operated in an environment like this?

Mr. STENSBY. No. I would say, frankly, PREPA—and not to cast any aspersions on my current colleagues at PREPA, but PREPA is unquestionably—call it the worst performing utility in the United States, and by each and every measure.

But I think that what that speaks to, Congressman, is the need to, in fact, make meaningful change. And it also probably speaks to some of the resistance that we have been seeing, whether it is on customer service, whether it is on outage response, whether it is on labor relations, whether it is that reinvestment.

Certainly, there is lots of experience with the reinvestment of this large capital program, and that is a very important part of this. And there is lots of experience with reconfiguring and bringing in better business processes. But I would say, in terms of the basic—it took two decades for PREPA to get in this state, we shouldn't forget, and that is why it is so important to get started, and continue to push ahead.

Mr. GRAVES. And I want to associate myself with Congressman Soto's comments—Puerto Ricans deserve electricity, they deserve better service, and we are investing extraordinary amounts of taxpayer dollars to get there.

Could you talk a little bit about the role, maybe, that the project labor agreement has in either benefiting or perhaps challenging your ability to do your job?

Mr. STENSBY. For certain. As I mentioned, we have a collective bargaining agreement now with our own workers. We have also rolled out a project labor agreement, which will be critical to

supporting stability and predictability, as this large amount of FEMA funding is used to rebuild the grid.

I mean, it is very important that we get qualified, skilled—we put safety first. And, really, we do put workers at the front of this equation, and Puerto Rican workers. And that was why, between LUMA and the IBEW, we have rolled out the PLA to bring that certainty so that we can deliver for customers.

Mr. GRAVES. OK, thank you, and I am going to ask you a question for the record on that one.

But last question, I am seeing some of these targets for renewables in the future. One, as I understand, the current effort to try to add \$.04 to the bill is being rejected right now, because folks are saying they can't afford it. What is your—

[Audio malfunction.]

Mr. GRAVES [continuing]. Achieve these renewable direction obligations or goals, and the cost associated with that?

Mr. STENSBY. Well, I think what LUMA is really focused on is to get a larger amount of renewable integration here, you do require a reliable transmission and distribution system. So, our focus is—at the end of the day, if you like, we are the transportation company, right?

And we all know, and we believe at LUMA, that the better the T&D system is, the more renewables can be integrated into the system and, in the end, still provide reliable and affordable electricity. So, that is where our focus is, Congressman.

Mr. GRAVES. Thank you, Mr. Stensby.

Mr. Chairman, I want to thank you. I just want to make note that I think, as we move forward, we need to be looking carefully at the price sensitivity of the investments that are being made to ensure that we are not going to be pricing Puerto Ricans out of power with the price sensitivity they apparently have.

I yield back.

The CHAIRMAN. The gentleman yields. Thank you. Let me now recognize Representative Torres.

Mr. Torres, you have 5 minutes. Thank you.

Mr. TORRES. Thank you, Mr. Chair. I have a quick yes-or-no question for the CEO of LUMA.

Does your company operate the total energy distribution and transmission system on the island?

Mr. STENSBY. We are responsible for the transmission and distribution system. PREPA today remains responsible for the operation of the generation system.

Mr. TORRES. But everywhere on the island, right?

Mr. STENSBY. Sorry, yes, all across the island, and also—

Mr. TORRES. Because I have heard the word “competition.” But if one company is managing all the energy distribution and transmission infrastructure, that is not competition, that is objectively a monopoly.

So, LUMA's management of Puerto Rico's electric grid is cause for concern for me. Power outages and service disruptions remain prevalent. Customer complaints are said to have risen. Response times are said to have fallen. I have heard multiple mayors fault LUMA for the lack of communication.

The Mayor of Juana Diaz, for example, said it would have taken PREPA 4 to 5 hours to arrive at his town. By contrast, it takes LUMA 2 to 3 days. So, by every indication, LUMA is failing the people of Puerto Rico.

And my first question is directed to PREPA. If LUMA continues to under-perform, does the operation and maintenance agreement allow the Government of Puerto Rico to reverse the privatization of the electric grid?

Mr. GIL. Congressman Torres, we would like to be the expertise on that, and the monitor of that contract is the P3 Authority. So, that question should be addressed to the P3 Authority—

Mr. TORRES. Are you a party to the agreement?

Mr. GIL. We are a party of the agreement, yes.

Mr. TORRES. So, as a party to the agreement, you should know if the new operator under-performs, whether you have the right to retrieve control of the electric grid. As a party to the agreement, that is a relevant fact to now.

Mr. GIL. Well, obviously, if it is declared in default by any chance, but they will have to take care of it.

Mr. TORRES. Are you suggesting to me that the people of Puerto Rico are stuck with LUMA, regardless of performance, for the next 15 years?

Mr. GIL. I am sorry, I am saying, obviously, we have to respect contracts. If not, if we don't do that, there is a constitutional—

Mr. TORRES. I am asking are there performance standards built into the contracts?

Mr. GIL. Performance standards built into their contract are evaluated. If they are not performing that well, they don't receive the payment that they should receive for it, in that sense.

If we stuck to it, it is a matter of, we have the force here, also. But in the meantime, we have to respect their contracts, and that is our position in that sense. Transitioning one day to another is almost impossible.

We took a year with LUMA actually on a front-end transition, and then afterwards—

Mr. TORRES. Let me move on. I just want to reclaim my time. As everyone knows, Puerto Rico is fundamentally dependent on imported fossil fuels. In order to facilitate the transition to clean energy, Puerto Rico passed a law, the Puerto Rico Energy Policy Act, which requires 40 percent clean energy by 2025; 60 percent by 2040; 100 percent by 2050.

Several obstacles, however, have emerged on Puerto Rico's path to clean energy, and the greatest among those obstacles is the Financial Management and Oversight Board, which rejected 16 solar projects that would have brought renewable energy from 2 to 20 percent of Puerto Rico's electricity. So, I feel like we are reminded once again that the United States is colonizing Puerto Rico in more ways than one. Not only is the United States subjecting Puerto Rico to higher fossil fuel costs via the Jones Act, but the United States, through the Financial Management and Oversight Board, is also actively preventing Puerto Rico from escaping those higher costs and transitioning to clean energy.

Climate change is a financial risk, and by sabotaging the transition to clean energy, the Financial Control Board is planting the seeds of financial instability on the island.

Now I have a question for PREPA. According to the COO of Applied Energy Services, he said the following quote: "We have the intention of transforming our energy production from coal to renewables before the 2027 deadline. If we reach an agreement today, we could do it in 2 years."

My question for PREPA is, when are you going to reach an agreement with AES? Can you get an agreement done immediately, so that the coal power plant can be closed within the next 2 years?

Mr. GIL. Congressman Torres, I will take that question. And obviously, right now, we are running RFP processes, as requested by the FOMB. Later on, the FOMB changed the story, and says that we don't have to run the procurement process. In that sense—

Mr. TORRES. I am with you on that piece. But can you reach an agreement with AES today, or in the near future, that could lead to closing of the plant?

Mr. GIL. It will be irresponsible on my behalf to take that position. Actually, right now, without the consent of the whole board and everything—

Mr. TORRES. Before my time is up, what is the due date for the latest RFP regarding renewable energy? I know it was originally May, but it was delayed. What is the new due date?

Mr. GIL. There is already a first tranche. Second tranche is coming up next week in October, like the notice. And afterwards, every 6 months we will have another RFP for it.

Mr. TORRES. OK, thank you.

The CHAIRMAN. The gentleman yields. Thank you very much. And let me now ask Mrs. Radewagen—she is recognized for 5 minutes.

Mrs. RADEWAGEN. Thank you, Mr. Chairman, and thank you for holding this important hearing.

At this time, I would like to just yield all of my time to Representative González-Colón.

Miss GONZÁLEZ-COLÓN. Thank you, Amata, and thank you, Chairman.

And coming from an island, I know she understands how difficult it is for islanders, like often in Puerto Rico, just to rely on the generation of electricity, not knowing if we are going to have power tomorrow or not. So, the next question will be for me, in terms of PREPA and LUMA both.

Is our system near to a complete collapse here soon?

I mean, not just in terms of generation, but in transmission. I just need a yes or no answer. Engineer Colón?

Mr. COLÓN. Thank you for the question, Madam Congresswoman.

The answer is no, but I want to expand my answer. Our system is in a critical condition right now in the generation side. As you know, we have many of our generating units not available because a lack of maintenance, and we are in an effort to bringing them back.

And in the transmission system, also, as you may know, and the other Congressmen, the system was repaired after the hurricane, but not restored.

So, to answer your question properly, both sides of the equation are under critical condition, but not to collapse at this point.

Miss GONZÁLEZ-COLÓN. Is the transmission distribution system near to a collapse?

[Pause.]

Miss GONZÁLEZ-COLÓN. LUMA?

Mr. STENSBY. I would answer in a very similar way. No, but it is critical that the re-investment continue.

And as we think about generation outages, it is only through the generation load shedding that we have been able to avoid the collapse. That is why it is so critical that we continue on with repairs on generation, and repairs on restoration and transmission.

Miss GONZÁLEZ-COLÓN. OK, then I will submit some questions for the record, as well.

The first one will be for PREPA and for LUMA. The FEMA funds that are allocated to the island are \$2.4 billion for transmission distribution and \$4.9 billion for distribution. I would like to know, how is the process expected to be managed, what is the timeline for PREPA and for LUMA to submit for FEMA for those scope of work, and COR3, the status of all of it, who is going to be answering for maximizing the use of those funds to build a system that people can trust.

I know that there is a lot of comments about works in the shovel-ready projects that were requested for renewables in PREPA that were not approved by the Board. My question to Mr. Fermín and to Mr. Gil—again, for the record—if PREPA or the P3 challenge that FOMB decision of canceling those renewable contracts, and why. If there is any way to get those in the line, when they are shovel-ready, and what was the main reason for that. I think that that is not the scope of the award, that is something that should be in the hands of PREPA, in the case of generation.

My next question will be, how long will it take for all those units that are going to be receiving maintenance in the next month. Even private generators and the government generators are going to be receiving maintenance. So, are we going to see more of these related outages across the island?

Do you have a plan that has been informed to the public in that sense?

And remember, there are many communities that rely on energy to pump their water. So, if you don't have power in some rural communities, they will not have water usage at the same time. That is the reason how this is so difficult to manage to the rest of the island.

Mr. Gil?

Mr. GIL. Thank you, Congresswoman González-Colón, for a—

The CHAIRMAN. If the gentleman would answer as quickly as possible, because time is over already.

Mr. GIL. I will. Actually, from our end, we have about 40 projects totaling \$2.5. There are already \$78 million invoices and cost, and we still have pending \$7.3 for the outstanding reimbursement for it.

In terms of the FOMB, no, they shouldn't, but they did, based on the amount of money, actually, that it will cost, or the amount of money that it was projected, based on the fiscal plan for it, and the IRP. And hence, if those projects were made back in the day, today we wouldn't have that problem. Nonetheless, politics—and because it was done by the last administration—they took it out.

And then the FOMB recently, after more than 80 years, actually requested the Governing Board to see that project. We went out there, we negotiated with more than 16 of those. And then afterwards they make the decision that only two of them were going to be. If we have the hands tied to it—yes, we do—but that is the way that our company is working right now.

The CHAIRMAN. Time is up, thank you, sir. I understand that there is a lot of specificity to answers, but being long-winded is another issue. Let me now recognize Mr. Tonko.

You have 5 minutes, sir.

Mr. TONKO. Thank you, Mr. Chair. Thank you for bringing such great focus to a very important concern for the people of Puerto Rico.

As Puerto Rican communities recover and rebuild from the COVID-19 pandemic, as many work or attend school virtually, and as temperatures rise and storms worsen, Puerto Ricans need reliable and affordable electricity, more than ever. And yet the island's electric grid, with less than 3 percent renewable electricity, continues to plague Puerto Ricans with, often, life-threatening outages, while costing them double the average U.S. rate.

So, Mr. Gil, what plans do you have in place to meet the renewable energy goals established by Act 17?

Mr. GIL. Well, as it is right now, Congressman, we are running the RFPs requested to pick the best option for the island, and at the same time, when all the grid modernization comes into play, then the idea of the virtual power plants can come to fruition, and we may have an excess of those.

Mr. TONKO. Professor Irizarry, as extreme weather events become more frequent, what risks will the current plan pose, and how would solar energy bring more reliability and cost savings to Puerto Ricans?

Dr. IRIZARRY. Thank you, Congressman. We already saw what happens when we face a Category 4 or Category 5 hurricane. The transmission system collapses. And that will happen again, even if you rebuild it. If you rebuild it up to code, current codes, it will still not withstand a Category 5 hurricane.

What we are proposing is renewable energy on the rooftop of homes and commerce, with storage. That proved to be the most resilient alternative to the hurricanes, like Maria. People that had a solar rooftop system with batteries continued with electricity provided from their solar PV systems.

I don't see how investing in a technology of the 20th century will bring us to a 21st century condition. We need to embrace new technology, and we have the know-how on the technology, and it is today cheaper than the alternative. So, we encourage the government to review their plans to invest in old technology that is vulnerable to stronger storms, as the ones we are seeing right now.

Mr. TONKO. Thank you very much.

And Ms. Santiago, what obstacles currently impede a greater investment in energy sources like solar on the island?

Ms. SANTIAGO. Thank you for the question, Congressman. Primarily, the LUMA contract right now is the largest obstacle we are seeing for integration of renewables. In fact, at a hearing before the Energy Board, one of LUMA's representatives, a guy named Lee Wood, said that FEMA funds could not be used for rooftop solar. He was corrected immediately by the board personnel, but that has been LUMA's position.

They want to, as Professor Irizarry just mentioned, rebuild the old 20th century transmission system, that will be knocked down by the next hurricane. And that is taxpayer money to the tune of \$9.6 billion or more that will just be wasted.

So, what we are proposing is—and what is really popular in Puerto Rico, and anyone with any kind of means is doing—is acquiring rooftop solar. So, PREPA, with that allocation from FEMA, can do that for low- and middle-income, and businesses and residents all over Puerto Rico, and provide lifesaving resiliency.

Mr. TONKO. Thank you. And I would think an island such as Puerto Rico would be a classic example of solar opportunity. That would just be a natural go-to.

Ms. SANTIAGO. Yes.

Mr. TONKO. Mr. Stensby, Ms. Santiago's testimony mentions a backlog of more than 5,000 systems on the island waiting to implement solar technology.

So, what are you folks doing to address this backlog, and what challenges remain?

Mr. STENSBY. Yes, thank you very much for the question, Congressman.

In fact, when we began on June 1, it was a very long backlog. And as we pointed out, some people have been waiting for as long as 2 years. We have made substantial efforts in reducing that backlog. We are processing new solar connections more than seven times what PREPA had been able to do prior to that. And we believe, by the end of this year, we will have completely eliminated the backlog.

And I think LUMA—people are trying to portray us as anti-solar, and it is absolutely not true. We just released, in fact, a hosting map on our website, so that people who are interested in solar can more easily connect and make decisions about their solar investments. So, we want to be very clear. We are supportive of rooftop solar, and we are doing everything in our power to support that.

Mr. TONKO. And I would hope that includes storage.

With that, my time is up. Mr. Chair, I yield back, and thank you so much for the hearing.

The CHAIRMAN. Thank you, Congressman. The Congressman yields. Let me now recognize Mr. McClintock.

Sir, you are recognized.

[Pause.]

The CHAIRMAN. Mr. McClintock, sir, you are recognized.

[Pause.]

The CHAIRMAN. If not, let me go to the next colleague on the list. Representative Tiffany, you are recognized for 5 minutes. We will hold that other for Mr. McClintock if and when he comes forward.

Representative Tiffany?

[Pause.]

The CHAIRMAN. OK, let me now recognize Congressman García. Sir, you are recognized for 5 minutes.

Mr. GARCÍA. Thank you, Mr. Chairman.

Electricity, of course, is something that many of us take for granted. But for people in Puerto Rico, it is a matter of life and death. Hundreds of thousands on the island are currently experiencing outages lasting several days, all while already paying twice as much for electricity than what most of us in the states pay.

We are seeing classes suspended, people being forced to throw out food, disruptions in medical services, and a family in Aguadilla losing everything after a power surge burned their house. This would not be acceptable anywhere else. So, why do we allow it to happen in Puerto Rico?

Last year, this Committee held a hearing to pre-emptively address concerns around the privatization of Puerto Rico's power grid. Yet, a year later, with Puerto Rico on the brink of power supply crisis, we have this situation.

A question for Mr. Fontanés. We heard earlier that, as of June 1, more than 3,000 ex-PREPA employees transferred to other government agencies. Why did P3 allow for thousands of PREPA employees to be transferred, rather than to work for LUMA?

Mr. FONTANÉS. Thank you, Congressman, for the question, and for the opportunity to address this topic.

The way Act 120 is established, what the law required was that we allowed the PREPA employees the opportunity to make the decision that they would like to make, in terms of whether they wanted to join a private entity, or they wanted to remain within the Government of Puerto Rico.

During the transition period we did everything within our power to try to provide information to the employees at PREPA, so that they could weigh in on what was better for them, in particular, and they could make the decision they would like to make.

So, at the end of the day, most of those employees decided to stay with the government rather than to join PREPA. I would have to say, in my opinion, that it is a shame. LUMA provided better salaries, the same or better benefits than most of these—

Mr. GARCÍA. Yes, thank you for your answer. It feels really wasteful to let skilled electrical workers serve as drivers or security workers, especially at this time of Puerto Rico's energy crisis.

A question for Mr. Stensby. Consumers have reported difficulties with accessing LUMA's customer service, especially when widespread outages occur. How have employees at call centers been trained and resourced to respond to these events?

And do you feel that LUMA's customer service operation is currently meeting the demand for consumers?

Mr. STENSBY. Thank you very much for the question, Mr. Congressman.

What I can tell you is that we trained, ahead of service commencement, a very large number of call center agents. We now have four call centers around Puerto Rico. It was important to us that they were in Puerto Rico. We have almost 10 times as many agents as PREPA had, as we moved into the transition.

What we are seeing is a very large volume of calls. We have rolled out a number of digital channels for people, but we are seeing large numbers of calls. And frankly, we attribute that to the fact that we are answering the phone. Our average answer time is in approximately the 10-minute mark, and we are beginning to fix the system, so that is—

Mr. GARCÍA. Forgive me for reclaiming my time. Is it inadequate, sir, yes or no?

Mr. STENSBY. Yes, for today it is, sir, yes.

Mr. GARCÍA. Thank you.

Ms. Santiago, I want to make sure you get a word in. How has LUMA engaged with community stakeholders prior to and following its acquisition of the T&D system?

Do you feel that LUMA has sufficiently responded to the questions and concerns of community members?

And you have about 35 seconds.

Ms. SANTIAGO. OK. No, not at all. Not before, not during, not now has LUMA communicated with communities. In fact, we are working with a group of 10 community organizations in the LUMA performance metrics case, and LUMA this week said that they did not have to answer questions about the emergency response plan.

Now, we have plans here in Salinas, Puerto Rico, that—for example, the Aguirre Power Complex is the largest electrical complex in Puerto Rico, that the surrounding communities need to know what the emergency response plan is for that infrastructure, and the transmission system that comes out of that infrastructure.

So, LUMA is not responding at all to community requests for information.

Mr. GARCÍA. Thank you, Ms. Santiago.

Mr. Chairman, I yield back.

The CHAIRMAN. Thank you, Mr. García.

Let me ask the Ranking Member, Miss González-Colón, are there any Members on your side?

Miss GONZÁLEZ-COLÓN. Yes, Mr. Chairman. I can see Mr. Obernolte is connected, as well as Mr. Moore.

The CHAIRMAN. Does he seek to be recognized on that?

Miss GONZÁLEZ-COLÓN. Yes.

The CHAIRMAN. Mr. Obernolte, you are recognized for 5 minutes, sir.

Mr. OBERNOLTE. Thank you very much, Mr. Chairman, and thank you to our witnesses on this really critical topic for the people of Puerto Rico.

I had a question for Mr. Gil. I would like to follow up on the line of inquiry that Congresswoman Velázquez was pursuing earlier. Recently there was an outage on the island of Puerto Rico that was tied to several of the power plants going down because of clogging of intakes for the generators with brown seaweed. And on Friday afternoon, there was a protest by hundreds of Puerto Ricans in front of the Governor's mansion against these outages. And many of those protesters were angry with LUMA.

But my question to you is should they be angry with LUMA, or should they be angry with PREPA, given the fact that PREPA is responsible for generation, and LUMA is just responsible for distribution?

Mr. GIL. Congressman, actually, at that time they could have been mad at both—it was a matter of generation with us—you have the sargassum or seaweed, in that sense. Those filters are already being procured in that scenario. They are extremely expensive. There was something that—it shouldn't happen.

But at the same time, there being other outages not related to generation, that has been creating the emotions around there and, obviously, other political motivations, and the opposition to it. It is fueling that fire.

Mr. OBERNOLTE. OK, so what could LUMA have done about that particular outage?

Mr. GIL. In terms of the generation, I mean, they don't have any type of control in the generation. They do have the dispatching of it, of the generation by itself, meaning we can start transmitting and distributing.

So, when it is related to outages because of transformers, substations, or any other particular poor wiring, or something like that, it is related to the T&D. When it is related to generation by itself, any machine that broke or whatever, it is related to us, in PREPA.

Mr. OBERNOLTE. Right, OK. So, talking about that outage in particular, can you give us kind of a layman's explanation of what happened with the seaweed, and why it caused such a problem at those two plants?

Mr. GIL. Well, basically, to give you the proper answer and the correct answer, Mr. Colón is the expert in generation, so he will take that question.

Mr. COLÓN. Thank you for that question, Mr. Congressman.

As Fernando explained, what happened over there was that a high amount of seaweed or sargassum entered the intake of water that is used in the power plant for the steam that it is used to move the turbine. The reason for that was that we have five sets of screens that are using for filter or prevent those seaweed to enter the channels that are tied to the condensers. But at that time, when this happened, all of the five filters failed, and that was the main reason that led to the shutdown of the units on Aguirre, and also to reduce the amount of energy that one of the generation can produce.

And LUMA doesn't have anything to do with that. It was a—

Mr. OBERNOLTE. OK, are they at surface level, or are they below the surface?

Mr. COLÓN. Both, but the majority of the seaweed was on the surface, but also are below the water level.

Mr. OBERNOLTE. Right. And, as I understand it, these are large, floating mats of brown seaweed. Is that correct?

Mr. COLÓN. Yes.

Mr. OBERNOLTE. So, I am just a layman, I am not an expert, but why even allow those mats of seaweed to come close to the inlets?

I mean, couldn't you just take some surface watercraft and go collect that, or push it away, or erect a floating boom or something, if you knew that was a hazard?

Mr. COLÓN. Well, actually, that was a failure from our people in the Aguirre power station. Actually, the power plant has watercraft and equipment to prevent those seaweed from getting close to the

intake, but they also have a lack of personnel to conduct that kind of maintenance service for this kind of process. And all of this leads to what happened, and we are now taking the actions required to prevent that.

Since that time, the unit returned to service without any problem from the seaweed. And we are putting all of our efforts to prevent that from happening again, even though we don't have the equipment, the new equipment that is needed to replace the broken ones.

The CHAIRMAN. The gentleman yields. Now let me turn to the next, thank you for the questions, and the gentleman yields. Let me recognize Representative Tlaib for her questions.

Representative, you are recognized.

Ms. TLAIB. Thank you, Chairman. I am so sorry, I have been having technical difficulty today—phone on my laptop, so please bear with me. Thank you so much for holding this important hearing.

While Puerto Rico may be very far from my district, the problems we are talking about seem so familiar. I mean, this summer, hundreds of thousands of people in the Metro Detroit area, in my community, lost power, some for as many as 6 to 7 days, Chairman. Our investor-owned, shareholder-centered electrical utility company, called DTE, has raised rates by nearly \$1 billion in the last decade, while having some of the worst reliability and performance in the whole nation. So, it is incredibly important for us to understand the connection between many of our districts and what is happening to the Puerto Rican people.

In the last several weeks, numerous press accounts have emerged about the impact, as you all know, of the ongoing, unreliable, and substandard electrical service for Puerto Rican residents. These include reports of constant and extended outages that we have been talking about, lasting more than 24 to 48 hours in communities with many elderly residents, and residents with chronic illnesses. And we all, as Members of Congress, have experienced and heard from our residents about how their health and everything is connected to that access to electricity.

I know the Mayor of San Juan is spending nearly \$1 million to buy generators for water pumps, so that power outages do not continue to result in water outages. And the Secretary of Commerce and Economic Development has denounced the impact of poor service on economic development, and so forth.

We heard reports of power surges regularly destroying people's appliances—you all know that—even causing house fires, like an incident of a family that lost everything in Aguadilla after a power surge burned their house down.

So, Mr. Chairman, we know that this terrible level of service isn't acceptable for the Puerto Rican people. It isn't acceptable in Michigan either, and it shouldn't be acceptable anywhere in our country or in our world.

Privatizing electrical service is a disaster for the Puerto Rican people, because private utilities serve investors, not the public. I am going to say that again. Private utilities serve their investors, not the public. Reliability has worsened when it became private,

and so we need to basically make sure that we are speaking that truth as we talk about these issues.

Mr. Stensby, as of June 1, more than 3,000 ex-PREPA employees transferred to other government agencies, rather than work for LUMA. How many workers and crews does LUMA have assigned to the municipalities of Aguadilla and, is it Ponce?

Mr. STENSBY. As I testified earlier, we have 900 employees that are in the field today. I can't tell you precisely how many are assigned to those two municipalities, Congresswoman.

Ms. TLAIB. Yes, so they left, they left LUMA. How many left LUMA?

Mr. STENSBY. How many left LUMA?

Ms. TLAIB. So, more than 3,000 ex-PREPA employees transferred—you said 3,000—and then they left, and you said 900 went to the municipalities.

Mr. STENSBY. No. I think it is a mischaracterization. LUMA recruited and, as Mr. Fontanés had testified, for an employee that was working for the Government of Puerto Rico, they had a choice to join LUMA or take a transfer to another agency within the government.

Ms. TLAIB. And 3,000 of them said, "We are going to leave LUMA."

OK, what is the average crew response time for outages?

Mr. STENSBY. The average response time across the most recent month is, in round numbers, in the 5- or 6-hour time frame.

Ms. TLAIB. How many complaints has LUMA Energy received regarding voltage—what they call fluctuations—damaging home appliances?

Mr. STENSBY. I don't have that specific number with me.

Ms. TLAIB. I would love if the Committee can follow up and get that information.

How much money has LUMA Energy received so far under its contract?

Again, I apologize if this was answered before, but I would like to know for something else.

Mr. STENSBY. LUMA Energy, during this interim period until the point in time when PREPA would eventually move out of bankruptcy, earns approximately \$7 million a month.

Ms. TLAIB. OK. How many LUMA employees, executives, earn over \$200,000, and how many earn over \$500,000?

Mr. STENSBY. I think I was asked that question earlier, but—

Ms. TLAIB. And you didn't want to answer, right?

Mr. STENSBY. I am not able to disclose employee salaries.

Ms. TLAIB. Yes. If you want to get in the business of providing a public good, and for the Federal Government to subsidize it, or for us to play a part in it, then you understand that those salaries are also the public salary. Do you understand?

So, just know that it doesn't make sense that you don't want to reveal that. You don't even have to tell me the names of it. I think Velázquez and I are just curious how many of your employees earn over \$200,000, and how many of them earn \$500,000? I don't need names. I just want to know how many. So, if you can follow up, and talk to your legal folks, I think they will come back and tell you that that should be actually transparent and open.

Do you know what the median household income is in Puerto Rico, sir?

Mr. STENSBY. No, I do not, Congresswoman.

Ms. TLAIB. It is \$20,000, according to the Census Bureau, \$20,000. So, LUMA has received millions of dollars, and stands to receive billions more in an attempt to privatize the grid in Puerto Rico over the next 15 years. But the last 4 months have been a disaster for the people of Puerto Rico. And privatization, I know, will only worsen it.

So, I just want you, sir, to understand that, if you are going to serve the people, you should know what the medium income is. You should know what the impact is. And the fact of the matter is you failed them just alone in the last 4 months. So, please understand that my frustration with all of this is because they deserve to make sure that they have access to something that is very much a lifeline to medical issues they are struggling with, being able to provide for their families, of course, food, all those things, appliances, everything is so connected to that.

With that, Chairman, I yield. Thank you very much.

The CHAIRMAN. Thank you, the gentlelady yields. Let me call again on my colleague, Representative McClintock, if he is available now. If not, Representative Tiffany, if he is available. They are recognized, either/or.

[Pause.]

The CHAIRMAN. If not, let me go to Representative Espaillat for his 5 minutes.

Sir, you are recognized.

Mr. ESPAILLAT. Thank you, Mr. Chairman. Thank you. I wanted to ask a very simple question. I want, really, an honest yes or no answer.

Since LUMA assumed responsibility, have power outages and other service disruptions increased, Mr. Gil?

Mr. GIL. Sorry, we don't have the actual data for that. It is something that is related to LUMA, and LUMA should answer the amount that they had before, and the amount of outages that they have since June 1.

Mr. ESPAILLAT. Mr. Stensby for LUMA, since you took control, or responsibility, have outages and service disruptions increased?

Mr. STENSBY. The frequency of outages has gone down, sir, and in some months the duration of outages has gone up.

Mr. ESPAILLAT. Have service complaints increased from your customers?

Mr. STENSBY. The calls that we receive have absolutely increased, and I believe that is fundamentally because we are actually beginning to make a difference, and people are now reporting issues in order for us to correct them.

Mr. ESPAILLAT. So, you are saying that outages have decreased, while service complaints have increased? Usually, it is the other way around. Usually service complaints increase when you have problems, when you have outages and service disruptions. But what you are saying is that service complaints have decreased—rather, that the outages have decreased, and service complaints have increased.

Mr. STENSBY. What I am saying, Congressman, is that with PREPA, I think people had a certain level of expectation. And now that LUMA has arrived, those expectations have risen, and people are indeed engaging with us, and they are beginning to see some action. We are replacing more poles, we are improving services. And that in itself is causing increased calls and interest in its hopes, or it is helping people understand that we can and we are making a difference.

Mr. ESPAILLAT. So, are you saying that responsiveness to these complaints have declined, or have increased?

Mr. STENSBY. I am saying the responsiveness has increased. We just completed our most recent JD Power survey, and customer satisfaction is actually slightly up from before June 1.

Mr. ESPAILLAT. Mr. Chairman, for the record, I just want to state that our records and our office have received information to show that, in fact, customer service complaints have increased, and responsiveness to the complaints have declined.

Now I have another question, which is regarding the renewable energy transition. Reports provided to my office show that PREPA has experienced multiple delays in the Energy Bureau's IRP and resulting RFP schedule for procuring large amounts of solar power battery storage. Are you aware of this issue, and what has been causing the delays in PREPA's purpose procurement process? This is for PREPA.

Mr. GIL. Sir, Congressman Espaillat, actually, in terms of an answer to relate this question to the PREB, in that sense, but we have the obligation, actually, to present the problem to the PREB, and once the PREB authorizes, we can go out, actually, and procure those.

In terms of any statement or anything, the PREB that is actually one of the witnesses can attest better to that.

Mr. ESPAILLAT. Well, what is the cause for these delays, in your opinion?

Mr. GIL. Sir, I mean, in terms of what we seen here, there might be a delay of a couple of weeks or something, but it is not a delay of years, or withholding projects for years. It might be something procedural. I mean, it can be regarding, obviously, the person, and how they are handling things. But in that sense, I feel comfortable with the pace that we have right now. That first RFP already notified—or the line of people that can basically can get a contract, it might go to 12.

And, obviously, next week actually, we will issue the second one, and so forth. So, it is about keeping that rhythm, and into that direction in order for us to be able to produce the public policy goals of that 40 percent for 2025—

Mr. ESPAILLAT. Mr. Chairman, let me just, for the record, state my concern regarding these delays, and the potential that other interests may be involved in causing these long-standing delays. I yield back.

The CHAIRMAN. The gentleman yields. Let me now ask once again if Representative Tiffany or Representative McClintock, Minority side, if they are present, either/or can be recognized.

[Pause.]

The CHAIRMAN. If not, let me go to the gentleperson from California, Chair of this Committee's Oversight and Investigations. Chair Porter, you are recognized.

Ms. PORTER. Thank you so much. We are here to talk about a coal ash plant run by LUMA. And I have a picture of it here, and you can see a mountain of coal ash right here. And, spoiler alert, it is highly toxic, and poisoning residents of the nearby community of Guayama.

[Slide.]

Ms. PORTER. Mr. Stensby, you are here today. And despite concerns about staffing and competence that my colleagues and I had earlier this summer, and still have, LUMA began operating Puerto Rico's electricity system, called a grid, on June 1. We are glad that you took Congress up on its invitation to appear today and testify this time.

I wanted to ask you, how would you characterize LUMA's transition to managing Puerto Rico's electrical grid so far, with 1 being a total disaster and 10 being a remarkable success?

Mr. STENSBY. I think, as I set out, Congresswoman, it has certainly been a challenging transition. There have been many factors at play.

But when I look at it on balance, I would give us a B. I think we have a lot to do.

Ms. PORTER. OK, so 1 to 10, you would give yourself, like, a 6?

Mr. STENSBY. I would give us a 7, considering what we—

Ms. PORTER. A 7, OK. How many blackouts—I know this has been covered, but how many blackouts have been reported since LUMA took over on June 1?

Mr. STENSBY. The system has a very large number of outages, Congresswoman, both before and after—

Ms. PORTER. Can you count them? Is it so big you can't even keep track of them all?

Mr. STENSBY. There are outages every single day, Congresswoman.

Ms. PORTER. Every single day. So, if you are having trouble doing this, and there are voltage spikes, destroyed appliances, house fires, complaints about customer service, why should LUMA be allowed to continue to manage the plant, if it is not actually delivering electricity?

Mr. STENSBY. Two things. I want to be very clear. The picture that you showed, LUMA has nothing to do with the AES coal plant. Our job is to operate the electric system.

Ms. PORTER. Do you not get energy from this plant that you then move along the grid?

Mr. STENSBY. Puerto Rico receives energy from that plant, yes.

Ms. PORTER. And then you move it along the grid.

Mr. STENSBY. That energy is flowed through the grid to customers, yes.

Ms. PORTER. OK. I want to talk about customer service. How many customer service reps did you have on June 1?

Mr. STENSBY. I don't have the exact number, but we—

Ms. PORTER. How many today?

Mr. STENSBY. Sorry?

Ms. PORTER. You have a large number of customer service reps, which is good, because you have a large number of blackouts. How many customer service reps do you have today?

Mr. STENSBY. We have more than 350 agents. And, in addition, many more people that are customer service people.

Ms. PORTER. And how many experienced linemen do you have today?

Mr. STENSBY. I think, as I described earlier—

Ms. PORTER. Nine hundred?

Mr. STENSBY. The way that PREPA would describe them, we have more than 900 people in the field today.

Ms. PORTER. OK. I want to turn to—last hearing we had a witness describing that his aunt is dead, his wife and daughter might be dying. A doctor testified about terrible illnesses. Is the AES plant worth running, in your opinion, given the lost lives and serious illnesses?

Mr. STENSBY. As I say, I think the conversation about AES is not a conversation for LUMA. LUMA's job is to transform the transmission and distribution system, Congressman.

Ms. PORTER. Are you equally able to transmit energy that comes from renewable sources?

Mr. STENSBY. Yes. And I think, as I testified earlier, Congresswoman, we have been working hard to reduce the waiting and connecting new renewable resources as we speak.

Ms. PORTER. So, you commit to doing everything in your power to transition to renewables?

Mr. STENSBY. We are very supportive of renewables.

Ms. PORTER. Do you think Puerto Rico is on track to meet its renewable goals?

Mr. STENSBY. Once again, I think it is important that people understand. LUMA's role is to operate the transmission and distribution system, and rebuild that system. Many of your questions are perhaps better for—

Ms. PORTER. Sorry. We heard testimony today that you are delaying ready-to-go rooftop solar and storage installations, and there is a backlog of these systems that are still waiting to be connected. Why is that, if you are so committed to clean energy?

Mr. STENSBY. No, I think that is a mischaracterization. I think my testimony actually said we are accelerating those systems. We are moving at seven times the pace that they were being moved out before we came into operation.

We are confident there will be no backlog by the end of the year, and we just posted hosting maps on our website to support more renewables.

Ms. PORTER. How long do you think it will be until LUMA can deliver the energy in a consistent and reliable way, with blackouts that are comparable to what we see in the United States, and what you saw at your prior employer?

Mr. STENSBY. I believe that it is going to take many years to transform all of Puerto Rico's electric system. It is going to require the FEMA funding, and it requires a complete overhaul. It took decades to get where we are today, and it is going to get better month by month by month. But, frankly, it is going to take many years to get a world-class electric system here in Puerto Rico.

Ms. PORTER. Thank you, I yield back.

The CHAIRMAN. The gentlelady yields.

Representative González-Colón, is there any Member on your side of the dais that wishes to be recognized?

Miss GONZÁLEZ-COLÓN. Not at this time, sir.

The CHAIRMAN. Thank you. Let me just go over some quick questions and a comment.

Mr. Stensby, according to economic analysis and experts at the University of Puerto Rico, the cost of electricity is one of the expenses straining most Puerto Rican citizens and small businesses. When can we expect—and it follows up with a question—that LUMA's control of PREPA's transmission and distribution system is going to lead to a reduced cost, increase reliability for service for the consumers and the people of Puerto Rico? When is the end game on this?

Mr. STENSBY. Thank you, Mr. Chairman. And what I want to say is, we submitted our plans to the PREB, and the PREB has approved those investment plans.

I do believe it will get better each and every month. But, as I said, it is going to take a number of years for that overall reliability, through reinvestment, to get the system here in Puerto Rico to what many people in the mainland United States would expect from their power system.

The CHAIRMAN. Thank you. This next question is for Mr. Fontanés or Mr. Laboy.

Will LUMA be the sole control of the \$9.5 billion Federal cost share payment that FEMA will provide for rebuilding the grid? That is one question.

Also, will LUMA be able, on their own, to select off-island contractors, such as their parent company or other affiliates, to complete the work to modernize the grid?

Mr. LABOY. So, Mr. Chairman, for the first question, it is very important to state that the only administrator and the recipient of the Federal funds obligated by FEMA for the permanent work for the electrical grid is the COR3. We are the responsible entity. It is stated in the FEMA state agreements, according to the Stafford Act and Federal regulations, and we are the entity that is responsible to manage and—

The CHAIRMAN. So, effectively, LUMA cannot make those kinds of contracting decisions, all that, without your concurrence, right?

Mr. LABOY. Every project which needs to be approved by FEMA—

The CHAIRMAN. No, I'm saying they want to hire a contractor, it has to come to you. Is it your approval that drives that, or not? That is my question.

Mr. LABOY. LUMA and PREPA have to follow the procurement requirements according to Federal, local, and state. And when we receive a reimbursement request, we verify and validate that each project has been procured according to Federal, state, and local requirements, and we validate 100 percent, according to those FEMA requirements.

The CHAIRMAN. Yes, as we conclude the meeting, let me just thank the witnesses, thank the Members for their questions. Many

of the questions that I had developed were asked by other Members and redundancy is not something we want to encourage.

But I do want to say a couple of things that were made, and I think Members made the point. I think somebody said that the issue of what happened with the grid and the power loss, the blackouts in Texas during the winter, was as a result of trying to green the energy grids too soon.

Well, other, more informed conclusions, were that it was a fully privatized energy delivery system, unregulated and with limited oversight and control on the part of the state government. And I certainly wouldn't want the Federal Government, with the investment that it is making to the Puerto Rican people, to be in the position, as the Texas Legislature and their administration are, of not providing oversight and, essentially, deregulating their energy distribution system, which many—I believe—caused the outages.

But, anyway, the other point that was made today is that I think we need some answers on the two questions, the earmark issue for rooftop and storage, for individuals and for neighborhoods regarding renewable energy, and the development of those microgrids to deal with that. I think we need to look at that, and follow up with FEMA as to the ability to indicate that.

And further, look at the contract—at the agreement—with LUMA and PREPA, and all the responsible parties. I think that needs to be looked at much deeper, and some questions came up today.

The issue is reliability and dealing with the urgency of having reliable power to the consumers in Puerto Rico, period. Nobody denies that. And there is going to have to be some patches. There has to be some corrections, some improvements, some repairs in order to guarantee that during that transition.

But transition is the goal. It is the goal under public law in Puerto Rico, and it is the goal under the present Administration in the White House. And as such, I think accountability and transparency with this contract is essential, so that we don't get into foot dragging, we don't get into double dealing, and we don't get into preferences that take away from meeting that transition goal, because I think you can do both, chew gum and walk. And to constantly use the excuse of a system that is not up to standards, which we all know, as the reasons we can't make the transition, I think, is a false choice.

So, we are going to follow up. Members have indicated some follow-ups around investigative issues. And also, in terms of FEMA and the other issue, we will be forwarding to LUMA some specific requests, in terms of information. In the past, they have said that it is proprietary, and they cannot provide it to Congress. We will issue that. We hope they are responsive. If they are not, then we will proceed to the next step to compel that information to come forward.

With that, let me thank all the witnesses, thank my colleague, the Ranking Member, Miss González-Colón.

The meeting is adjourned. Thank you very much.

[Whereupon, at 3:43 p.m., the Committee was adjourned.]

[ADDITIONAL MATERIALS SUBMITTED FOR THE RECORD]

Statement for the Record**AES PUERTO RICO****October 6, 2021**

AES Puerto Rico, L.P. (AES-PR) appreciates the opportunity to provide an update on significant developments since the Oversight and Investigations Subcommittee's June 30, 2021 hearing and to once again share with the House Committee on Natural Resources ("Committee") that it supports a responsible transition to renewable energy in Puerto Rico.¹

To be clear: AES-PR is committed to a responsible and orderly transition from baseload coal-fueled power to renewable energy. This transition can be achieved with state-of-the-art solar power and battery storage before the coal-powered plant is scheduled to close at the end of 2027, while ensuring the reliability of the grid and respecting AES-PR's contract rights. Indeed, as recent power outages across Puerto Rico have shown again,² Puerto Rico must have sufficient, reliable baseload electricity generating resources to provide electricity or risk continuously disrupted life across the island.

The AES Corporation. AES-PR is an affiliate of The AES Corporation ("AES"), a global company that provides reliable, affordable, and sustainable energy in 14 countries in the Americas, Asia, and Europe. AES' portfolio includes solar, wind, hydro, natural gas, and coal, as well as energy solutions such as smart distribution networks and battery energy storage systems. AES operates more than 30,000 MW and is the global leader in utility scale energy storage.

AES is taking real steps to accelerate a more sustainable energy future. In the past five years, AES has added tens of thousands of megawatts of renewable capacity and reduced by more than 10,500 MW its oil and coal capacity. In 2020, AES achieved (early) its goal to reduce electricity generation from coal in its portfolio to less than 25% and has set a new goal to reduce that to 10% by 2025 and achieve net zero-carbon emissions from electricity globally by 2040.

AES Puerto Rico. AES-PR was selected by the government of Puerto Rico in 1994 to build a new coal-fueled power plant to modernize the island's ailing fleet. AES-PR invested \$800 million to construct a 510 MW plant, including state-of-the-art emission controls approved by the U.S. Environmental Protection Agency. In operation since 2002, AES-PR's thermal power plant reliably supplies up to 25% of the island's electricity every day.

Under AES-PR's Power Purchase and Operating Agreement (PPOA) with the Puerto Rico Electric Power Authority (PREPA), AES-PR is Puerto Rico's lowest cost baseload power provider and has saved consumers billions of dollars in energy costs over the past two decades. AES-PR has also funded, designed, developed, and now operates AES Ilumina, a 20 MW utility-scale solar generation facility. Launched in 2012, AES Ilumina was at the time the largest Caribbean solar energy project, and the first large-scale solar power plant connected to PREPA. Today, AES-PR provides direct and indirect employment to more than 700 people.

1. AES-PR is committed to a responsible, orderly transition from baseload coal-fueled power to renewable energy before 2027.

AES-PR supports Puerto Rico's goal to achieve 100% renewable power generation by 2050, as well as responsible efforts to accelerate that transition before 2027 through investments in renewable energy. AES-PR has already outlined to Puerto Rico officials concrete solutions that would achieve a responsible transition of the 500+ MW of baseload energy produced from coal to renewable energy and battery storage, without interrupting the reliable electricity that AES-PR provides today. AES-PR has proposed to replace the energy from coal-fueled generation with brand new, state-of-the-art solar facilities with battery storage. The new facilities would include the Maverick 5B technology,³ which uses 50% less land than a traditional

¹See Comments of AES Puerto Rico Submitted to the House Natural Resources Committee (June 30, 2021).

²*E.g.*, *The Weekly Journal*, "PREPA Assessing Damages to Unit 6 in Costa Sur," (Sept. 27, 2021) (available at https://www.theweeklyjournal.com/online-features/prepa-assessing-damages-to-unit-6-in-costa-sur/article_4905178a-0ce8-11ec-a9f5-5b7ab3711e76.html).

³<https://www.aes.com/5b-and-aes-unfold-power-solar-energy>.

solar project and can be built three times faster than other solar resources. This is a resilient and proven technology, able to withstand Category 4 hurricanes. As the renewable resources come online, electricity produced from coal would be systematically reduced, while the plant would remain available to ensure grid reliability during emergencies.

AES can help Puerto Rico achieve this transition by working together with PREPA and Puerto Rico to enter into a revised agreement that is in accordance with the existing contractual rights and responsibilities under the current PPOA. PREPA's previous leadership had raised concerns about entering into a revised PPOA, but Puerto Rico Law 17-2019, Article 4.11 expressly promotes an early transition of AES-PR's coal-fueled power to new generating assets through a revised PPOA. Moreover, there is increasing support for this sensible approach.

On October 4, 2021, Puerto Rico Governor Pedro Pierluisi publicly recognized that AES-PR is ready to convert its thermal plant to another source of energy, and he has directed PREPA's new leadership to carry out the negotiations needed to accelerate the transition of AES-PR before 2027. Likewise, the Financial Oversight and Management Board for Puerto Rico (FOMB) recently concluded—as already was clear from the plain text of Article 4.11—that PREPA has the discretion to enter into negotiations for a revised PPOA, and that FOMB would review any new agreement reached to ensure it is fiscally sound. The Governor's and FOMB's supportive statements spell good news for the people of Puerto Rico: once an agreement between PREPA and AES-PR is reached, AES-PR's transition to renewable energy resources can be completed in less than two years.

2. AES-PR has been a reliable supplier of low-cost electricity—and will continue to make its best efforts to support Puerto Rico during the current energy generation shortfall.

When Puerto Rico has most needed electricity, AES-PR has been available to provide reliable low-cost baseload power.⁴ The same is true during today's energy crisis in Puerto Rico, during which AES-PR will make best efforts to ensure it continues to serve the island safely and reliably.

The current crisis is simply the result of a shortage of reliable electricity generation. Over the past several months, key units within the PREPA system have had technical failures. That has forced the units offline and compelled PREPA to interrupt service, because it lacked sufficient reliable generating capacity to step in for the out-of-service units.⁵ Throughout this crisis, the AES-PR thermal power plant has continued to supply approximately 25% of the island's electricity. Just as importantly, it has provided power reliably, with one of the lowest forced outage rates on the island.⁶ However, the current energy generation crisis on the island is stretching the thermal plant to its limits. Like any thermal power plant, AES-PR's two units and associated equipment require regular maintenance to ensure reliable service. As such, especially for larger units, maintenance outages are scheduled well in advance to allow personnel to safely inspect, repair, and replace equipment. AES-PR was due to begin a long-scheduled, maintenance outage on September 25, 2021, but upon LUMA/PREPA's urgent request,⁷ AES-PR deferred that maintenance to ensure Puerto Ricans have power during the current crisis. LUMA/PREPA has asked AES-PR to delay the maintenance until at least January 2022. AES-PR is working with LUMA/PREPA to select an optimal time to perform the maintenance without compromising grid reliability and operational safety.

Yet, deferring maintenance is not a long-term solution to the energy crisis in Puerto Rico. Rather, these power outages across Puerto Rico have reaffirmed that it is essential that the people of Puerto Rico have reliable baseload resources over the long run to provide electricity, including while the island moves forward to meet the Puerto Rico legislature's direction to transition to renewable sources of energy,

⁴ AES-PR was available shortly after Hurricane Maria, long before many other resources. Following the 2019/2020 earthquakes on the island, AES-PR was the first large-scale electricity generation resource to be 100% available.

⁵ *The Weekly Journal*, "More Selective Blackouts Over Low Energy Generation," (Sept. 30, 2021) (available at https://www.theweeklyjournal.com/online-features/more-selective-blackouts-over-low-energy-generation/article_00808a5a-222b-11ec-bc58-c352b791ebd3.html).

⁶ The "forced outage rate" measures the percentage of time a unit suddenly stops working, and thus, a lower forced outage rate means a more reliable unit that is available to provide electricity. The two AES-PR thermal units have a forced outage rate of 3%—comparable PREPA-owned units face forced outage rates of 18–20%.

⁷ This is not the first time PREPA has asked AES-PR to defer maintenance. AES-PR was so critical to the grid in 2020 that PREPA asked the company to postpone scheduled maintenance and keep its thermal plant online. Without AES-PR, many Puerto Ricans would have been without power, because PREPA had no alternative resource.

or risk continuously disrupted life across the island. Without such capacity and without an orderly transition, we would expect the cost of electricity to rise, environmental impacts to increase (when PREPA is compelled to turn to unreliable and higher emitting oil-fueled power to try to meet demand), and Puerto Rico to face even more significant power outages, leaving many without electricity.

AES-PR appreciates the Committee's interest in attempting to accelerate Puerto Rico's transition to renewable energy and modernizing the electrical grid. As part of AES—one of the most important renewable energy developers in the world with more than 40 years of global experience developing, operating and innovating safe and reliable energy solutions—AES-PR is ready to contribute our expertise and knowledge to the energy transition in Puerto Rico. AES's experience supporting countries pursuing similar energy transitions, has taught the importance of ensuring that transitions are done in an orderly and responsible manner, and of having the necessary investments, not only in renewable energy, but also in other key links in the electricity supply chain.

AES-PR is confident that Puerto Rico is ready to accelerate this transition and that we can be a part of this process. Done responsibly, this transition could reduce the cost of electricity in Puerto Rico and contribute directly to the island's sustainability and climate change goals, while helping to drive economic growth. AES-PR believes that all parties would welcome the constructive engagement of this Committee to help us achieve this goal. AES-PR looks forward to continuing to work productively with the Committee on this matter.

CAMBIO PR
SIERRA CLUB OF PUERTO RICO
EL PUENTE
UTIER (UNION OF ELECTRICAL AND IRRIGATION INDUSTRY WORKERS)

October 14, 2021

Dear Chairman Grijalva and members of the Natural Resources Committee:

During the October 6th House Natural Resources Committee hearing, many questions were raised about the lack of renewable energy in Puerto Rico's electrical mix and the possibility of using FEMA grid reconstruction funds to further the integration of greater amounts of renewable energy.

We are writing to clarify the importance of distinguishing between rooftop solar and utility-scale solar. Rooftop solar in Puerto Rico enjoys several key advantages over utility-scale renewable energy:

- **Reducing dependence on the long-distance transmission system.** Currently, two-thirds of Puerto Rico's power generation capacity is along the south coast and about two-thirds of the population lives in the north. Thus, the island is highly dependent on a south-to north transmission system through the mountains, which failed catastrophically during Hurricane Maria.

The widespread dissemination of rooftop solar and storage, especially in the San Juan metropolitan area, has the potential to largely eliminate power imports into the metropolitan area, greatly reducing the vulnerability of the system.¹ Utility-scale renewable energy cannot provide this benefit.

- **A less expensive way to provide resiliency.** Properly installed rooftop solar and storage systems are a proven resiliency solution in Puerto Rico; they kept the lights on after Hurricane Maria, while tens of thousands of island residents waited six months to a year for the lights to come back on. Instead of investing massively in rooftop solar and storage solutions for resiliency, however, PREPA proposed to the Puerto Rico Energy Bureau to improve the resiliency of the grid by hardening the transmission system and creating eight "mini-grids" across the island designed to isolate from each other in the event of a severe storm. The transmission investment required

¹Telos Energy. Puerto Rico Distributed Energy Resource Integration Study. December 2020.

to do this work was estimated at \$5.9 billion.² Utility-scale renewable energy provides no resiliency benefits and therefore would rely on these sorts of expensive and unproven grid-hardening proposals.

By contrast, the amount of distribution work needed to upgrade the grid to support the widespread integration of rooftop solar and storage—specifically 75% distributed renewable energy penetration by 2035—is estimated at only \$650 million.³

- **A better use of land.** Unlike many regions of the United States, Puerto Rico does not have large expanses of land available for renewable energy development. And given that the island also imports more than 90% of its food, land for agricultural use should not compete with land for energy development. By contrast, rooftop solar and storage make use of available roof spaces that are not being utilized.
- **Less expensive than current electric rates.** Puerto Rico’s residential electric rate is about 24 cents/kWh—and rising, due to increasing fossil fuel prices. According to the Puerto Rico Electric Power Authority, a customer can go off-grid and generate their own electricity via a rooftop solar and battery system for less than the current rate.⁴ In other words, rooftop solar and storage is an economically viable alternative in Puerto Rico—for those customers who can afford the upfront cost or financing cost.

Recent grid modeling studies commissioned by CAMBIO PR demonstrate that using a portion of the available federal funds to invest in rooftop solar and storage island-wide to achieve 75% distributed renewable energy by 2035 would result in a stable average rate of approximately 15 cents/kWh, or nearly 40% below current residential rates.⁵

- **Less investment required in the distribution system to integrate the same quantity of renewable energy.** As noted previously, comprehensive grid modeling studies have demonstrated that Puerto Rico could integrate 75% distributed renewable energy—including equipping every home on the island with a solar and battery storage system—with only modest investment (\$650 million) in the distribution system and no additional investment in the transmission system, beyond what is needed under any circumstance to bring the grid up to basic safety code. The grid investments needed to integrate distributed renewable energy are relatively modest because the location of electric generation near the point of consumption minimizes use of the distribution system.⁶ By contrast, integrating an equivalent amount of utility-scale renewable energy would result in significantly larger investments in the transmission and distribution systems.

For these reasons, we strongly urge the Committee to ensure that rooftop solar and storage systems are a priority for federal funding in order to rebuild a truly resilient and more affordable electrical system in Puerto Rico.

Sincerely,

CAMBIO PR
Sierra Club of Puerto Rico
El Puente
UTIER (Union of Electrical and Irrigation Industry Workers)

²Puerto Rico Energy Bureau. Final Resolution and Order on the Puerto Rico Electric Power Authority’s Integrated Resource Plan. Case No. CEPR-AP-2018-0001. August 24, 2020. paragraph 717.

³Energy Futures Group. Puerto Rico Distributed Energy Resource Integration Study: Load, Energy Efficiency and System Cost. February 2021.

⁴Puerto Rico Electric Power Authority. Puerto Rico Integrated Resource Plan, Appendix 4: Demand Side Resources. June 2019.

⁵Energy Futures Group. Puerto Rico Distributed Energy Resource Integration Study: Load, Energy Efficiency and System Cost. February 2021.

⁶EE Plus. Puerto Rico Distribution Modeling. March 2021.

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS
WASHINGTON, DC 20001

October 5, 2021

Hon. RAÚL M. GRIJALVA, Chairman,
Hon. BRUCE WESTERMAN, Ranking Member,
Natural Resources Committee,
1324 Longworth House Office Building,
Washington, DC 20515.

Dear Chairman Grijalva and Ranking Member Westerman:

On behalf of the more than 775,000 active and retired members of the International Brotherhood of Electrical Workers (IBEW), I am writing in regards to the upcoming hearing on the Puerto Rico Electric Power Authority (PREPA). As you are aware, the electric power infrastructure of Puerto Rico is in a state of disrepair due to years of neglect that Hurricanes Irma and Maria tragically exacerbated in 2017. While there is no overnight fix for this situation, I am confident that the IBEW can play a key role in its restoration with our members' skills, expertise, and training.

The IBEW has partnered with LUMA Energy, which maintains the power infrastructure in the commonwealth, and signed the first collective bargaining agreement at the utility in more than a decade. With it, the IBEW will ensure a skilled, professionalized workforce that will finally lead to the energy transformation in Puerto Rico. Additionally, the IBEW and LUMA have reached a project labor agreement that guarantees any utilization of federal funding will only be executed by qualified IBEW members earning fair wages under local hire provisions. This will ensure that the community-sustaining benefits of union careers stay in Puerto Rico. The PLA framework also assures that federal funds will be effectively spent on transforming the electricity system, not wasted on temporary, inadequate fixes by under-trained technicians.

After years of underinvestment, delivering Puerto Rico's modern, sustainable, world-class energy system requires a successful partnership between the utility and its workers. Shortcuts will only result in further failure. The IBEW's continued collaboration is a major first step in the energy infrastructure's transformation, and our members appreciate your support for this critical effort.

Sincerely yours,

LONNIE R. STEPHENSON,
International President

WINDMAR GROUP

October 12, 2021

Hon. RAÚL M. GRIJALVA, Chairman,
Hon. BRUCE WESTERMAN, Ranking Member,
Natural Resources Committee Members and Staff,
1324 Longworth House Office Building,
Washington, DC 20515

Re: Unsolicited comments on the problems residential and small commercial customers of PREPA/LUMA are having and how the Congress of the United States could help

Dear Chairman Grijalva, Ranking Member Westerman and Members of the House Committee on Natural Resources:

As has been widely reported, the Puerto Rico electric grid is unable to provide reliable, affordable, resilient and clean electric energy.

At the recently concluded hearings, you heard from some but not all the Puerto Rican electric sector stakeholders. I would like to share with you these unsolicited comments from a Puerto Rican businessman.

I have been a participant of renewable energy projects in Puerto Rico since 1978. I have had success with some and failure with others.¹

Currently, the role of a regulated grid to provide electric service to a residential or small business² client is not exclusive. Solar (“PV”) plus storage (“BESS”) provides the reliable, resilient, affordable and clean energy we all aspire to.

What is making possible the growth of residential solar and how the US Congress could help?

The realization by lenders that a long-term, typically 20 years, loan to finance a PV solar and BESS system to a residential customer with a FICO score above 650³ is a safe bet has been a game changer. The loan payment for such a system is less than the electric bill for the electricity the system provides. Furthermore, the BESS avoids the extra expenses for spoiled food and medicine or back-up generation when the grid goes out.

As Hurricane Maria demonstrated, by adding storage to the PV, the PV asset is no longer stranded; guaranteeing the consumer continued electricity supply. Thus, ensuring quality of life of the consumer and providing the revenue to pay for the system.

While PREPA, LUMA, FOMB, COR3, and PREB go back and forth not getting much done, tens of thousands of Puerto Rican households have switched to PV+BESS systems. They currently generate for self-consumption more electrical energy than the existing utility scale solar installations provide to the grid. It only takes a day to install 5kW of panels and a battery at a house. Thousands of Puerto Rican workers hit the road every day installing thousands of systems every month.

If you want to help, there are a few easy fixes to the existing federal renewable energy incentives and loan guarantee programs that could facilitate and accelerate the residential and particularly the small business rollout of PV+BESS.

First, amend the ITC to extend a cash in lieu of the ITC (Section 1603 of ARRA) or to provide Direct Pay to Puerto Rican taxpayers. Currently, only US taxpayers can capture the ITC from the PV+BESS systems that are installed in Puerto Rico. The tax equity by-pass to capture the ITC does not work for small installations.

Second, provide loan guarantees to small business to entice lenders to provide 20-year financing. Currently financial institutions provide only 7 to 10-year commercial loans to small businesses.

Third, provide a payment guarantee for 85% of the loan to residential customers with FICO scores below 650.

Lastly, the US Congress can put a carbon tax on the LNG, coal and oil that is imported into Puerto Rico. The funds collected can be used to pay the PREPA unfunded pension liability and the money owed to the bond holders. No need for a SOLAR TAX to pay the legacy debts of PREPA.

Sincerely,

VICTOR L. GONZALEZ,
President

¹Windmar Group, a local renewable energy company, has installed over 10,000 solar (“PV”) plus storage (“BESS”) residential and small business systems since Hurricane Maria devastated Puerto Rico in September 2017. In the last 12 years, Windmar Group has developed over 100MW of PV solar and installed over 150MWh of battery storage systems. Currently, we employ over 1,000 men and women. The Windmar Training Center graduates 40 new employees every month. For many of them, installing residential solar systems is their first job.

²Puerto Rico as of May 2021 had 1,348,097 Residential customers. They are responsible for 42% of the electricity sold. Most residential clients and small commercial clients in Puerto Rico have enough roof space on their homes and buildings to deploy the solar panels they need to self-generate the electricity they consume.

³The average FICO score in Puerto Rico is 678.

Submissions for the Record by Hon. Javier A. Aponte Dalmau, Majority Speaker, Puerto Rico Senate

SENADO
ESTADO LIBRE ASOCIADO DE PUERTO RICO
SAN JUAN, PUERTO RICO

October 5, 2021

Hon. RAÚL M. GRIJALVA, Chairman,
Natural Resources Committee,
1324 Longworth House Office Building,
Washington, DC 20515.

Re: Energy Crisis in Puerto Rico

Dear Chairman Grijalva:

On September of 2017, the electric system of Puerto Rico suffered a devastating blow when the Island was hit by Hurricane Maria. Most Puerto Ricans were without electric power for several months. In the aftermath of the hurricane, the Government of Puerto Rico enacted Law 120-2018 to implement a new public policy in favor of the privatization of our electric system.

Later, on June 22, 2020, a contract entitled “Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement” was signed between the Puerto Rico Electric Power Authority (PREPA) (owner), the Puerto Rico Public-Private Partnerships Authority (Administrator), Luma Energy, LLC. (management operator) and Luma Energy ServCo, LLC (service operator).

The terms of said contract, as well as the irregular and deficient transition process, was controversial and the legislature of Puerto Rico proposed legislation to postpone the implementation of the agreement in response to the requests of our constituents.

Unfortunately, the Governor vetoed the initiative and falsely argued that Luma Energy was ready to the assume its contractual responsibilities.

On January 28th, 2021 the Senate of the Commonwealth of Puerto Rico ordered the Committee of Energy and Special projects to carry out a legislative inquiry into the terms, scope and implementation of the contract subscribed between the local Government and Puma Energy PR, LLC. Energy PR, LLC. (S.R. 1). As part of that process, on June 28th, 2021 the Committee issued a preliminary report listing several disturbing findings (enclosure). However, the legislative process has been disrupted by Luma’s refusal to comply with several orders of the Supreme Court of Puerto Rico to provide documents and information to the legislative committees with jurisdiction in this matter.

It should be noted that, despite the fact that the contract assigned Luma Energy the responsibility over the transmission and distribution of energy, it also allowed Luma to create a subsidiary to provide energy generation services (Shared Services Agreements). In that case, Luma would be in position to control the entire energy operation in Puerto Rico. That is particularly troublesome if we consider that the Federal Emergency Management Agency (FEMA) has allocated close to 9 billion dollars for the renovation of our energy generation grid.

In other words, with the blessing of the Financial Oversight and Management Board created by the Puerto Rico Oversight, Management and Economic Stability Act of 2016, the local government transferred a public monopoly into private hands using federal funds. We are concerned that policy decision and the possibility of Shared Service Agreements could jeopardize the much needed resources if FEMA reconsider its allocation by virtue of the provisions of the Stafford Act, Public Law 100-707.

Even worse, since Luma Energy took over the operation from the Puerto Rico Electric Power Authority few months ago, the condition of our electric system has deteriorated dramatically. In sum, under Luma, constant power outages and several tariff increases have become a daily reminder of a failed policy and a permanent hurdle for all Puerto Ricans and our languished economy.

According to the Executive Director of the Public-Private Partnership Agency, this aforementioned transaction was “endorsed and promoted by the federal government”.

Given these remarks, and the critical situation that we are facing, it is of the utmost importance that the congressional committee that you chair assume immediate jurisdiction to assess the energy policy in Puerto Rico and its implementation.

With nothing further,

JAVIER A. APONTE DALMAU,
Portavoz de la Mayoría.

Attachment: Senate Resolution 1, First Partial Report, dated June 28, 2021

This document is part of the hearing record and is being retained in the Committee's official files. Available at:

<https://docs.house.gov/meetings/II/II00/20211006/114107/HHRG-117-II00-20211006-SD003.pdf>

**Submissions for the Record by Hon. Luis Raúl Torres-Cruz, Puerto Rico
House of Representatives**

CÁMARA DE REPRESENTANTES
SAN JUAN, PUERTO RICO

September 30, 2021

Hon. RAÚL M. GRIJALVA, Chairman,
Natural Resources Committee,
1324 Longworth House Office Building,
Washington, DC 20515.

Re: Transformation of the Electric System of Puerto Rico

Introduction

After more than four years of PREPA's bankruptcy, under the advice of the Financial Oversight and Management Board for Puerto Rico (FOMB), and the implementation of a privatization strategy promoted by the Commonwealth Government, the electric system of Puerto Rico has become more unreliable and costly than ever. The entities in charge of the reconstruction of the electric system, including the Public Private Partnerships Authority (P3A) and the Puerto Rico Energy Bureau (PREB), do not have the necessary expertise to guide the system through its transformation. Moreover, the recovery process after the hurricanes was shrouded by obscure processes, such as the contracts with Whitefish and Cobra, one of them resulting in criminal prosecution of former FEMA officers and Cobra executives by the federal justice system. All of these constitute good reasons for searching for a different approach to achieve the transformation of Puerto Rico's electrical system.

Based on all the above, we respectfully come before you to request your assistance in finding a sound alternative to achieve the transformation of our electrical system. Notwithstanding, our concern is whether Puerto Rico's needs can be addressed in a timely fashion before the federal funds assigned for the reconstruction are used contrary to the wellbeing of all residents of Puerto Rico. As we will discuss, PREPA has signed a Transmission and Distribution System Operation and Maintenance Agreement (The Agreement) with LUMA Energy, LLC and LUMA ServCo, LLC. (Together known as LUMA.) that became effective on June 1, 2021. The first three months of the contract have shown that LUMA is ill prepared to operate the electric system and, furthermore, it has the potential to hinder the economic growth in Puerto Rico. We are confident that your commitment to the people of Puerto Rico will move you to intervene in this matter.

It appears that a few months from now, any intervention from Congress could be moot, since Puerto Rico is on the verge of executing a great number of projects to reconstruct the electrical system, under the present guidance of the FOMB, and maybe still influenced by exogenous political influence that could result in arbitrary

and non-effective spending of federal funds. Even worse, LUMA will manage all the projects and federal funds, through the Agreement.

We urge Congress to act immediately and take action to designate an entity to oversee the transformation of Puerto Rico's electric system as a project under its supervision, assuring that federal funds are used efficiently and revisiting the laws and contracts, including the Agreement, executed by PREPA and the Government of Puerto Rico to prescribe the path to this transformation.

PREPA under PROMESA, FOMB, FEMA, and Related Others

On August 14, 2014, the Puerto Rico Electric Power Authority (PREPA) entered into a debt strategy agreement, the Forbearance Agreement for PREPA, with owners and insurers of more than 60% of PREPA's bonds and banks that have loaned PREPA monies to operate, since it had failed to make required Bond Service and Redemption Accounts deposits on July 25, 2014.

On July 2, 2017, the Puerto Rico Fiscal Agency and Financial Advisory Authority (AAFAF) said PREPA had filed in the United States District Court of Puerto Rico for protection under Title III of the 2016 Puerto Rico rescue law known as PROMESA, which gave the Government of Puerto Rico, its agencies and instrumentalities, access to a workout process akin to U.S. bankruptcy.

As we are writing, an unfair Restructuring Support Agreement (RSA) is being questioned as filed, by other creditors, congressional members and interested parties. Some parties are arguing for the appointment of a trustee under Puerto Rico law or an independent, private sector firm (IPSIG). In the past, the Financial Oversight and Management Board for Puerto Rico (FOMB) tried to appoint a CEO, but this attempt to control PREPA by the FOMB was rejected by the Title III Court.

Since PREPA first defaulted on July 25, 2014, it has paid more than an estimated one billion dollars in consultants, legal representation for both itself and the bondholders, as required by the agreements reached between both parties.

Notwithstanding, PREPA's finances have not improved, even after receiving millions of dollars from the federal government to rebuild the electric system of the island. The costs related to the Agreement, together with LUMA's incompetency, have caused PREPA's finances to weaken to the point that the cost of energy will have risen to a 35% during the last nine months if the latest submission for reconciliation of the fuel and power purchase adjustments are approved by the PREB. At this point, it is relevant to mention that a member of PREPA's Governing Board and a former Executive Director have publicly questioned the claims made by LUMA regarding this latest submission, which if approved would represent an increase of 16.4% in the cost of the kilowatt-hour.

We argue that PREPA's top management purposely delayed¹ the much-needed maintenance and reconstruction of the Transmission and Distribution System and Energy Production System, in order to justify the privatization of the public corporation and to fulfill a promise made during the political campaign of 2016, reaffirmed by former governor Ricardo Rosselló on January 2018, later implemented by former governor Wanda Vázquez, and vehemently defended by governor Pedro Pierluisi, without apparent support of the actual facts.

A similar situation is occurring at the present time with the generation system. Over half of the installed generation is not available or limited, while the rest of the fleet is under-maintained. This becomes obvious by looking at how the maintenance budget for the generation system has been diminished consistently during the last years. Moreover, this lack of compliance with the required conservation of the generating units has caused several forced outages during the past months, on top of outages due to failures in the transmission and distribution system, which some say are a direct result of LUMA's lack of ability and knowledge about Puerto Rico's electric system.

The non-compliance with the proper conservation of the generating units is not a result of incompetence or lack of interest on the part of PREPA's employees. Up to a few years ago, PREPA counted on highly educated, skilled, and experienced professionals devoted to the public corporation, but the **interference of some politicians, going after their political and personal benefit, ultimately ruined PREPA. This is the primary root cause of PREPA's demise**, as concluded by some restructuring experts that were contracted for PREPA's restructuring process.

¹An example of this can be found on page 10 of the 2020 PREPA Fiscal Plan (the Fiscal Plan) certified on June 29, 2020 by the Financial Oversight and Management Board for Puerto Rico (FOMB), on which it is stated that: "At the end of FY2020, PREPA expects a \$153 million surplus, driven by underspending in vegetation management and necessary maintenance expenses."

The Puerto Rico Integrated Resource Plan (IRP) 2018–2019, prepared by Siemens Industry, Inc. on February 12, 2019 (final draft submitted for the approval of Puerto Rico Energy Bureau), contemplates (Section 8.3.1) 2,716 MW generation capacity additions from now until 2029. Not even a 1 MW capacity has been added since 2019. Also, this IRP includes the retirement of 2,905 MW capacity between now and 2028.

All of these happened under the supervision of the FOMB. Sadly, after spending an estimated one billion dollars, there are no results to show.

Under the advice of the FOMB, PREPA discarded several contracts for utility scale renewable energy generation projects that were being renegotiated and could have been ready to provide clean, economic, and reliable energy to the island. Moreover, this would allow for the definite retirement and decommission of the oil fueled generating plants, some of which have been declared as Limited Use Units under the Mercury and Air Toxics Standards (MATS) regulation.

As it is widespread known, in September 2017, the island was hit by two major hurricanes, causing devastation, and causing a blackout island wide. It took over a year for the electric system to be restored, but not necessarily up to code, and definitely including no improvements to the system. At the time of these hurricanes, PREPA was working on implementing an Integrated Resource Plan (IRP), which had to be rethought after the effects of the hurricanes.

Recently, the Puerto Rico Energy Bureau (PREB) approved a new IRP, redefining the electric system of the island after considering the impacts of the 2017 hurricanes. Nevertheless, this IRP was based on unlikely scenarios not including a proper sensitivity analysis. This could lead the island into investing the limited resources available, on the wrong projects. This is why the intervention of Congress is needed on a timely fashion.

LUMA Contract

As a result of the unlikely scenarios adopted by the Government of Puerto Rico for the formulation of the IRP, a Transmission and Distribution System Operation and Maintenance Agreement was executed between PREPA, the Puerto Rico Public-Private Partnerships Authority (P3A), and LUMA (a new corporation formed by a consortium between QUANTA Services, Inc. and ATCO Group).

As explained by the Institute for Energy Economics and Financial Analysis (IEEFA), “the contract with LUMA is not solely a T&D operation and management agreement. The LUMA contract identifies a scope of services that goes beyond management of PREPA’s transmission and distribution assets and gives LUMA responsibility for planning, rate setting, asset management, budgeting, procurement, collections, public relations and other financial matters. It is a full privatization of PREPA’s operational functions.”²

Considering this analysis, some questions might come to mind. For one, can the shell public corporation that will remain after the reorganization of PREPA and the execution of the LUMA contract be recipient of federal funds for the repair, restoration, and replacement of damaged facilities? This question has not been specifically answered to this day. According to the provisions of the Stafford Act, Sec. 406. Repair, Restoration, and Replacement of Damaged Facilities (42 U.S.C. 5172), only state and local governments, and private non-profit organizations that provide critical services are allowed to receive contributions from the federal government for the repair, restoration, reconstruction, or replacement of a facility damaged or destroyed by a major disaster and for associated expenses.

This contract has several provisions that are contrary to the legal framework and against the best interest of the people of Puerto Rico.³ Some of those provisions are:

- According to publicly available documents, the projections of the variables used to justify the Contract are overly optimistic and fail to include a sensitivity analysis to handle the uncertainty of important variables. PREB should require the PREPA and P3A to perform a more complete analysis to validate projections. Even with these optimistic projections, LUMA has already requested an increase in the electricity cost. This is proof that the contract does not provide for a reduction in the cost of electricity in Puerto Rico.
- The Contract provides more protection to LUMA’s interests than to the public interest. It establishes conditions that could lead to a conflict of interest, as

²See: Contract Between Puerto Rico, LUMA Energy Sets up Full Privatization, Higher Rates for Island Grid, page 10 https://ieefa.org/wp-content/uploads/2020/10/Contract-with-LUMA-Energy-Sets-up-Full-Privatization_Higher-Rates_October-2020.pdf.

³Idem.

LUMA could hire its parent companies to carry out rehabilitation or construction works for both transmission and distribution, and generation.

- The Contract stripped employees and PREPA retirees of the rights acquired and earned over many years and jeopardizes the subsistence of the retirement funding for pensions.
- The Contract provides for the payment to LUMA of an Incentive Fee in case the expected performance metrics are exceeded for a particular year. However, it does not establish penalties in the event that the expected metrics are not reached. The metrics, as set out in Annex IX of the Contract, are non-binding and are still under revision by the PREB. Currently there are no metrics to adequately supervise the performance of LUMA.
- The Contract includes no adequate provisions as to guarantee that the reconstruction projects performed by LUMA will be carried out in such a way that the Federal Emergency Management Agency (FEMA) will reimburse the money invested.
- LUMA is a newly created, limited liability corporation, so the public interest must be protected through a Parent Company Guarantee. We understand that the maximum warranty amount of \$105 million for the entire term of the Contract is not sufficient when compared to other electricity industry contracts that have been awarded in Puerto Rico. Also, QUANTA Services reports to the Security and Exchange Commission (SEC) reveal some red flags regarding the financial stability of this parent company.
- The process of drafting, awarding, and finalizing the Contract was carried out without transparency. Nor was the public interest, customers, employees, let alone retirees, defended. This Agreement was treated as one of adhesion. Today, after several court processes, LUMA still refuses to comply with a court order mandating LUMA to provide the information requested under a legislative investigation being carried out by the House of Representatives of the Commonwealth of Puerto Rico.
- The Contract is potentially bad for PREPA's customers, employees, and retirees, and could hinder the goal of providing a customer-centric system, with financial viability, reliable and resilient, that is a sustainability model, and that becomes the engine of Puerto Rico's economic development.
- The Contract, as proposed, takes away from the Government, its main role in establishing social justice, promoting programs to eliminate poverty, creating an adequate environment of economic development and growth, and establishing and implementing a sound public policy on energy resources, given the geography of the island.

Conclusion

FEMA assigned approximately, \$10.7 billion for the renovation and restoration of the PREPA's Transmission and Distribution System (T&DS). Management of these funds has been assigned to LUMA Energy, LLC under the Agreement. This contract is not good for PREPA, nor for the people of Puerto Rico. For example, the contract provides for LUMA's parent companies, affiliates, and subsidiaries to be among the contractors selected to perform the works for reconstructing the Transmission and Distribution System. This would give LUMA, its parent companies, and affiliates an undue advantage due to the access to privileged inside information, casting doubt and possible conflict of interests on the management of the federal funds.

The above cited defects of the IRP and the LUMA contract, will negatively impact and will constitute an obstacle to the economic development of the island. This, in turn, will delay ending the bankruptcy of the Government of the Commonwealth of Puerto Rico. Also, the IRP and the 10-Year Infrastructure Plan, which provides an overview of PREPA's infrastructure investment strategy, must be revised under the provisions of President Joseph R. Biden, Executive Order 14008 of January 27, 2021 for Tackling the Climate Crisis at Home and Abroad.

Therefore, **LUMA contract must be annulled or substantially modified** to provide the right tools for the much-needed transformation of the electrical system of Puerto Rico, in compliance with the Energy Public Policy Law of Puerto Rico, requiring that 100 percent of the energy demand on the island be generated from renewable energy sources, and to promote the economic development needed to put an end to the bankruptcy. Also, Congress should take action to **appoint an administrator or trustee** to oversee the reconstruction of the electric system.

The Commission I preside has conducted a thorough investigation of the awarding, execution, and implementation of the LUMA contract. Attached is a copy of the final report of this investigation.

My goal in writing this letter is to shed light upon the path chosen by the Government of Puerto Rico and the FOMB for the transformation of Puerto Rico's electric system, since this transformation is vital to the livelihood of all Puerto Ricans.

Respectfully,

LUIS RAÚL TORRES CRUZ,
Presidente

Attachment: H.R. 136 Final Report, Dated May 11, 2021

This document is part of the hearing record and is being retained in the Committee's official files. Available at:

<https://docs.house.gov/meetings/II/II00/20211006/114107/HHRG-117-II00-20211006-SD001.pdf>

Submissions for the Record by Ruth Santiago, Esq.

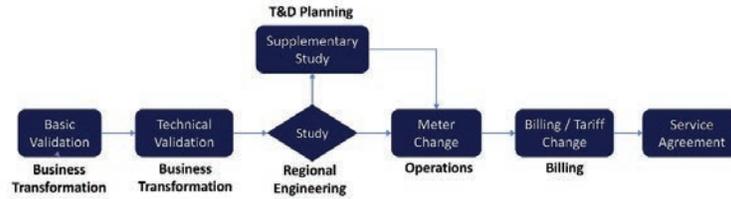
LUMA Energy Report



Discussion Topics

1. Interconnection Process
2. Expediting the Backlog
3. Communications (NEM Queue)
4. Contacts

Basic Interconnection Process (<25 kW)

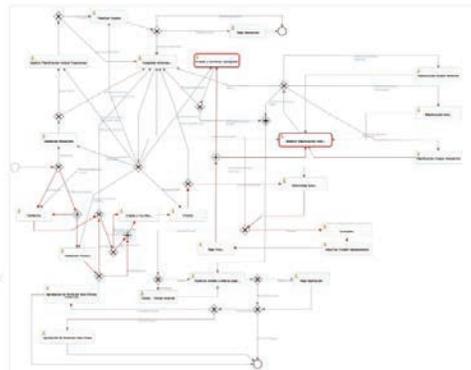


Basic Process Detail (cont.)

For reference, this is what the actual process looks like in the Portal.

The red lines show this application's movement in the Portal.

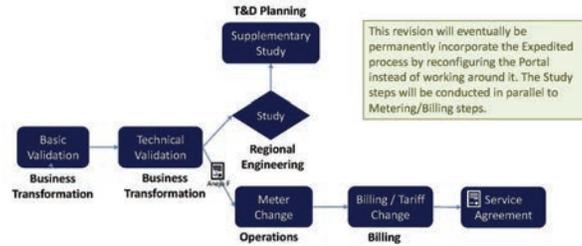
We are trying to streamline this.



Basic Process – Expedited (<25 kW)



Basic Process – Future Revision



NEM Billing Change Progress

The Billing team has already started processing applications using this workaround.

- 4,500 cases were sent to Billing last week to be Expedited.
- **The Billing team has activated ~2,000 of these applications in the past 1.5 weeks.**
- Once activated by Billing, NEM will appear on the next bill.
- Roughly 20% of these 4,500 cases will require a new bi-directional meter, which is being scheduled.
- Another ~2,000 applications are Pending Validation and will then be expedited to Billing (~1.5 months).

Case ID	Status	Date	Notes
1001	Activated	2023-10-25	Expedited to Billing
1002	Pending	2023-10-25	Requires meter
1003	Completed	2023-10-20	Finalized
1004	Rejected	2023-10-22	Missing info
1005	Activated	2023-10-25	Expedited to Billing

Communications - NEM Queue

By processing these applications outside the Portal, we can get Billing activated as soon as possible for the customer.

However, the project is still not complete, and customers/developers will not receive the normal notifications from the Portal about project status and interconnection agreements.

As a temporary solution, LUMA has developed an Interconnection Queue spreadsheet with notifications of project status.

Final completion of projects and Service Agreement still awaits completion of remaining steps in the Portal (Study, Supplemental Study, etc).

DG Public Queue



Communications - NEM Queue (cont)

Status	Quantity	Description
Recently Complete (July)	2,100	Billing team changed to NEM tariff recently, will show up on next bill.
In Progress	2,700	Billing team is actively work to change the tariff, should be active in the next 1-3 months.
Pending Validation	1,600	Recently received, still being Validated, will be active in next 1-3 months.

Internal Process – responsible areas

Key Interconnection Activities	Team Responsible
Validation Review project and system specifications	<ul style="list-style-type: none"> Business Transformation
Study Collect/review GIS data, Determine if Supplementary Study needed	<ul style="list-style-type: none"> Business Transformation Regional Engineering GIS / Cartography
Supplementary Studies For feeders above 15% capacity	<ul style="list-style-type: none"> T&D Planning for DG
Meter Swap To bidirectional meter	<ul style="list-style-type: none"> Operations Service Order Team GIS / Cartography
Billing / Customer Service Payment, billing/tariff, status inquiries	<ul style="list-style-type: none"> Billing
Inspections For >25kW only	<ul style="list-style-type: none"> Regional Engineering



Contacts

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October 14, 2021

Hon. RAÚL M. GRIJALVA, Chairman,
Hon. BRUCE WESTERMAN, Ranking Member,
Natural Resources Committee,
1324 Longworth House Office Building,
Washington, DC 20515.

Dear Chairman Grijalva and Ranking Member Westerman:

Supplemental Information for Hearing on the PREPA Post Implementation of the
LUMA Transmission and Distribution Contract

Dear Chair Grijalva and Members of the House Committee on Natural Resources:

Thank you for the opportunity to testify on the hearing regarding PREPA Post Implementation of the LUMA Transmission and Distribution Contract. In addition to the written testimony submitted on October 4, 2021, I submit this supplemental letter and the written comments of David Sotomayor-Ramírez, Ph.D., Professor of Soil Science, University of Puerto Rico, Mayagüez, College of Agricultural Sciences titled, The case for preserving agricultural land area in Puerto Rico and green-energy projects. In his comments, Dr. Sotomayor highlights the importance of preserving agricultural land in Puerto Rico in the context of proposals to build utility scale renewable energy projects on these important resources. The comments and graph show that Puerto Rico lost approximately 70% of agricultural land-area between 1964 and 2018.

Other scholars have noted the importance of preserving agricultural land in Puerto Rico noting that, “Given the relatively small size and mountainous terrain of Puerto Rico, innovation will be important to keep key watersheds and mountain slopes forested, and to increase sustainability and productivity on all working lands.” Land Use, Conservation, Forestry, and Agriculture in Puerto Rico, William A. Gould, Frank H. Wadsworth, Maya Quiñones, Stephen J. Fain and Nora L. Alvarez-Berrios, *Forests* 2017, 8, 242; doi:10.3390/f8070242, <http://www.mdpi.com/journal/forests>, P.14. The study further documents that, “In recent decades, 14 percent of the island’s prime agricultural land has been converted to urban use through development, with arguably more being restricted by non-agricultural uses, such as residential (lawns) or recreational (golf courses) uses.” Id, P.15. The authors coincide with Dr. Sotomayor’s comments on the importance of the preservation of remaining agricultural land to ensure food security for future generations.

Dr. Sotomayor’s comments emphasize the advantages and the important role of rooftop or on-site solar systems to preserve agricultural land in Puerto Rico. However, as indicated in my written testimony dated October 4, 2021, there is a backlog in interconnection of rooftop solar and storage installations. LUMA Energy claims that it is addressing the backlog however a document prepared by LUMA acknowledges that the interconnections are incomplete. The attached document titled, Net Metering Program Update indicates that, “The Final completion of projects and Service Agreement still awaits completion of remaining steps in the Portal (Study, Supplemental Study, etc)” Id, p.8. LUMA’s delays in completing interconnections and issuing the requisite Service Agreements has a chilling effect on the deployment of rooftop solar in Puerto Rico and aggravates the energy crisis.

Please feel free to contact me if you have any questions.

Sincerely,

RUTH SANTIAGO,
Salinas, Puerto Rico

The Case for Preserving Agricultural Land Area in Puerto Rico and Green-Energy Projects

David Sotomayor-Ramírez, Ph.D.
 Professor of Soil Science
 University of Puerto Rico, Mayagüez
 College of Agricultural Sciences
 PO Box 9000
 Mayagüez, PR 00680-9000

14 October 2021

A major portion of this brief essay was taken from: Sotomayor-Ramírez, D., G. Martínez, F. García, G. Gouveia. 2021. Nutrient management for sustainable agriculture in the Caribbean. In Preparation, to be submitted to *J. Agric. Univ. P.R.*

Puerto Rico presents an interesting case scenario for current and potential food production. After the 1950s, the island experienced a dramatic structural transformation from an agricultural to an industrial-based economy. The process involved population migration to cities and a gradual abandonment of agricultural lands in rural areas (Rudel et al., 2000; López et al., 2001; Martinuzzi et al., 2006). For example, in 1964 the agricultural land area was estimated at 1,595,866 acres and in 2018 at 474,332 acres (USDA-NASS, 2018) (Figure 1). This dramatic reduction amounts to an agricultural land-area loss of about 70% of that in 1964. In the last five years Puerto Rico lost 94,534 acres, part of which was associated with inventory loss due to Hurricanes Irma and Maria. The Puerto Rico 2015 *Plan de Uso de Terrenos* (2015 PUT),¹ separated near 636,000 acres of land area for agricultural production. The current agricultural land-area inventory suggests that a major part of the agricultural land area that was identified and separated in the 2015 PUT will now never be available.

At present, Puerto Rico has one of the highest land-area carrying capacities in the Caribbean with 3.4 people/ha-total area and 15.7 people/ha-agricultural land area (Table 1). The consistent decrease in agricultural land area in Puerto Rico has occurred as a result of urban expansion into agricultural areas, and agricultural land-area abandonment and reversion to secondary forests (López et al. 2001; Pares-Ramos et al. 2008; Yuan et al. 2017). Although potential working lands could reach as high as 42% of the land-area (Gould et al. 2017), current agricultural land area in Puerto Rico is 22% of the total land area (USDA-NASS, 2018). This proportion is lower than most countries with greater land area in the Caribbean and Central America, which have similar crops, flora, fauna, landscape characteristics and climate (Figure 2), and for the continental United States in general.

Prior to 2017, Puerto Rico was estimated to import 80% of its food supply (Comas-Pagán, 2009) making its food security vulnerable to fluctuations in global food prices, shortages, climate phenomena and climate change. Puerto Rico's economic stability, food security and availability of fresh and quality products can be enhanced by maintaining or increasing land-area for agricultural production and by increasing agricultural productivity. Agricultural intensification through sustainable nutrient management practices can reduce the agricultural footprint and maintain ecologically sensitive areas (Cassman and Grassini, 2021). Preliminary work by Baez et al. (2021) demonstrates that Puerto Rico could easily be self-sufficient in selected commodities of major consumption. The agricultural sector in Puerto Rico has a very important role in the local economy, even with a gross agricultural income at the farm level estimated at near \$900 M. Agriculture contributes to direct and indirect employment. Current estimates suggest that agricultural activities could support up to 50,000 jobs in the local economy. The Puerto Rico dependence on imported food supplies makes the island vulnerable to natural disasters and global economy market fluctuations and dependent on the US Government for food-aid transfers.

It is unknown the current land-area dedicated to green energy solar and wind projects. Estimates range from 2,100 to 4,200 acres of land area. Sotomayor-Ramírez et al. (2015) described the negative impact of wind-energy project in Santa Isabel municipality on high-valued agricultural land-area. Preliminary evidence suggests that there may be as many as 16 solar energy projects in the pipeline, projected to generate near 1,800 MW-AC (Siemens Industry, 2019). The agricultural land-area that could be directly impacted could be as much as 13,500 acres. Puerto Rico needs

¹ 2015 Puerto Rico Land-Use Plan. Junta de Planificación de Puerto Rico. 2015. Reglamento conjunto para la evaluación y expedición de permisos relacionados al desarrollo y uso de terrenos. 1090 p.

to achieve a greater proportion of energy generation on green energy and decrease dependence on fossil fuels. Yet, agricultural land-area cannot be sacrificed for green energy generation as this will further exacerbate Puerto Rico's dependence on imported food and aid transfers from the federal government, among other negative consequences.

Various studies recommend the siting of photovoltaic equipment on rooftops to provide the bulk of energy demand in Puerto Rico (Telos Energy, 2020; O'Neill-Carrillo et al. 2018; Mooney and Waechter, 2020). The advantages of on-site, rooftop solar or solar installations close to the point of use are many. They include the use of existing sprawling housing development and commercial rooftops to avoid further impacts to open spaces, agricultural land and ecologically sensitive areas. Rooftop solar eliminates the need for large investments in transmission infrastructure. It avoids transmission losses. Grid maintenance costs are reduced and impacts to tropical forests and vegetation as a result of tree cutting and pruning are minimized. The on-site solar alternative doesn't require establishing extensive easements or servitudes on private property while helping to lower temperatures within the structures and providing protection to the buildings. Rooftop solar installations add value to the structures and promote local wealth. Distributed renewable generation on rooftops creates greater reinvestment in the local economy than utility-scale projects. It enables ratepayers to become producers or 'prosumers' of energy.

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Figure 1. Trends in agricultural land area in Puerto Rico from 1964 to 2018. Source USDA-NASS.

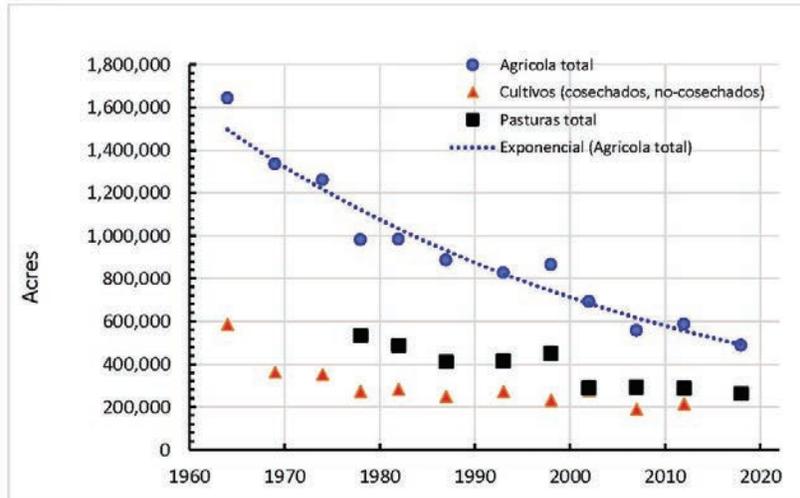


Table 1. Carrying capacity of major of Caribbean area countries with greater land area.

Country or territory	2018 Population	people/ha-total area	people/ha-total agric area
Cuba	11,338,134	1.1	1.8
Haiti	11,123,178	4.0	6.0
Dominican Republic	10,627,141	2.2	4.5
Puerto Rico	3,039,596	3.4	15.7
Jamaica	2,934,847	2.7	6.6
Trinidad and Tobago	1,389,843	2.7	25.7
Guadeloupe	399,848	2.4	7.7
Bahamas	385,637	0.4	27.5
Martinique	375,673	3.5	12.5
Barbados	286,641	6.7	28.7
Netherlands Antilles (former)	277,483	3.5	34.7
Saint Lucia	181,889	3.0	17.2
Grenada	111,454	3.3	13.9
Saint Vincent and the Grenadines	110,211	2.8	11.0

Figure 2. Total land area and land under agriculture, and proportional land area under agriculture and cropland in the ten Caribbean area countries with greatest land area.

