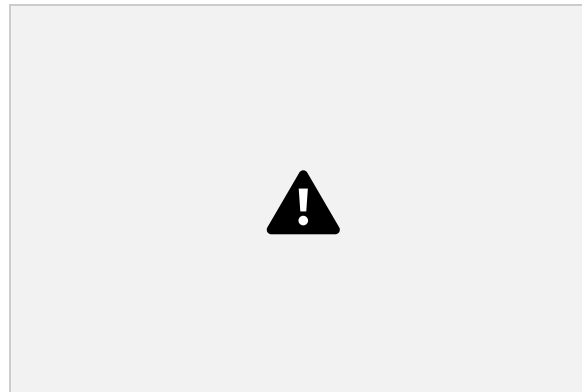




THE PATH TO ENERGY SELF-SUFFICIENCY FOR PUERTO RICO

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Like nearly all Puerto Ricans, Casa Sol Bed and Breakfast (Casa Sol) in Old San Juan had prepared for Hurricane María, one of the most powerful hurricanes ever to hit Puerto Rico. Unlike most businesses, however, Casa Sol reopened just two (2) days after the storm thanks to owners Eddie Ramírez and Margarita Pastor who years earlier invested in the sun itself: they installed solar panels on the rooftop of their building. This wise decision created resilience not only for their business, but also their neighbors in Old San Juan. Their independence from a centralized electrical grid powered by traditional fossil fuel offers a blueprint for energy self-sufficiency in Puerto Rico: renewable independent microgrids.



Eddie Ramírez, one of the owners of Casa Sol.
Picture by Foundation for Environmental Education, July 14, 2020

Casa Sol was one of the few businesses, or perhaps the only business, in Old San Juan with power and running water after Hurricane María, since electricity was needed to run the water pumps. Margarita and Eddie had open doors for their neighbors to charge appliances and cell phones; they stored medications and breast milk in their refrigerator, allowed neighbors to do

laundry, provided ice and water, and even had a power cord to provide energy to some of their neighbors.¹ All this was achieved without the noise, exhaust, or cost of a gasoline powered generator.

The power outage in Puerto Rico was the longest in U.S. history.² People in some parts of Puerto Rico did not have power for almost a year.³ Imagine how different Puerto Rico's recovery would have been if most of the residents and businesses drew and shared their power from individual solar panel systems, instead of the centralized fossil fuel power system that was severely damaged after Hurricane María. How many thousands of lives would have been saved? How many hospitals would have operated without interruptions from fuel shortages?⁴ How much more progress towards recovery would families and businesses have made if it were not necessary to wait in long lines for generator fuel to run a refrigerator for food and medications, or to run a home medical device?

Disaster Declaration and Federal Funds for the Rebuilding of Puerto Rico's Electric Grid

¹ See Jordan Campbell, *The Sweetest B&B in Old San Juan: Casa Sol Bed and Breakfast*, GLOBAL DEBAUCHERY,

<https://globaldebauchery.com/2021/05/31/the-sweetest-bb-in-old-san-juan-casa-sol-bed-and-breakfast/> (last visited September, 23 2021); Marie Fazzio, *Weathering the Storm with Renewable Energy*, GREEN KEY (May 27, 2019), <https://www.greenkey.global/stories-news-1/2019/5/27/weathering-the-storm-with-renewable-energy>.

² U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-54, PUERTO RICO ELECTRICITY: FEMA AND HUD HAVE NOT APPROVED LONG TERM PROJECTS AND NEED TO IMPLEMENT RECOMMENDATIONS TO ADDRESS UNCERTAINTIES AND ENHANCE RESILIENCE (2020).

³ Puerto Rico Electric Power Authority and Central Office for Recovery Reconstruction and Resiliency, *The Grid Modernization of Puerto Rico: Transforming and Upgrading the Energy Sector*, <https://recovery.pr/documents/Grid%20Modernization%20for%20Puerto%20Rico-English1.pdf>.

⁴ Dawn Giel et al., *Puerto Rico Short on Fuel Cannot Deliver Food and Medicine to the Victims of Hurricane Maria*, CNBC (Sept. 28, 2017), <https://www.cnbc.com/2017/09/28/puerto-ricos-fuel-supply-breaks-down-in-the-wake-of-marias-devastation.html>; Richard Fausset, *Puerto Rico is Getting a Surge of Aid, Governor Says*, N.Y. TIMES (Oct. 1, 2017), <https://www.nytimes.com/2017/10/01/us/puerto-rico-ricardo-rossello-storm-recovery.html>.

The extensive and unprecedented damages caused by Hurricane María to Puerto Rico's power grid required an overhaul of the system. In response, the federal government provided extraordinary targeted levels of funding for power infrastructure through the Stafford Act and through Community Development Block Grants.⁵

On September 18, 2020, Federal Emergency Management Agency (FEMA) approved \$10.7 billion to enable the Puerto Rico Electric Power Authority (PREPA) to repair and rebuild the electric grid, and importantly, to make it more resilient.⁶ Separately, on April 10, 2018, Department of Housing and Urban Development (HUD) allocated approximately \$11.9 billion in Community Development Block Grant disaster recovery (CDBG-DR)⁷ funds for Puerto Rico, including \$1.9 billion to enhance or improve its power systems.⁸ In addition, HUD allocated \$8.2 billion in CDBG mitigation (CDBG_MIT) funds⁹ from which Puerto Rico budgeted \$1 billion in

⁵ WHITE HOUSE, *PRESIDENT DONALD J. TRUMP APPROVES PUERTO RICO DISASTER DECLARATION*, (Sep. 21, 2017), <https://trumpwhitehouse.archives.gov/briefings-statements/president-donald-j-trump-approves-puerto-rico-disaster-declaration-2/>.

The declaration authorized federal public assistance in accordance with *Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974* (codified as amended at 42 U.S.C. § 5172 (2018)), *Sandy Recovery Improvement Act of 2013* (42 U.S.C. § 5121 et seq. (2018)) and *Bipartisan Budget Act of 2018* (Pub. L. No. 115-123, 132 Stat. 64 (2018)).

⁶ The permanent work done on the electric system with these federal funds must comply with the alternative procedures for Public Assistance (PA) Categories C-G, pursuant to Section 428 of the Stafford Act. Under the PA program alternative procedures, 90 percent of total eligible cost of the reconstruction will be covered by this fund, and FEMA will only reimburse the fixed-costs estimate agreed upon for each project. See FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), PUBLIC ASSISTANCE ALTERNATIVE PROCEDURES (SECTION 428) GUIDE FOR PERMANENT WORK FEMA-4339-DR-PR (2020), https://recovery.pr/documents/PAAP_Guide_for_Permanent_Work_DR_4339_PR_V3_2_10_2020_FINAL_508.pdf See also U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 3, at 8.

⁷ This fund addresses unmet needs not covered by other federal recovery programs. Also, although the CDBG-DR allows waivers and alternative requirements, it does not permit the waiver of environmental and labor protection laws.

⁸ Allocations, Common Application, Waivers, and Alternative Requirements for Community Development Block Grant Disaster Recovery Grantees; Electrical Power Systems in Puerto Rico and the U.S. Virgin Islands, 86 Fed. Reg. 117, 32681-32700 (Jun. 22, 2021).

⁹ Allocations, Common Application, Waivers, and Alternative Requirements for Community Development Block Grant Mitigation Grantees; Commonwealth of Puerto Rico Allocation, 85 Fed. Reg. 17, 4676-4681 (Jan. 27, 2020).

matching infrastructure funds and \$500 million for community energy and water resilience programs.¹⁰

Disaster Recovery Funding Stresses Resiliency and Renewability

Hurricane María's damage also required a shift in thinking towards greater resiliency and sustainability. Building upon prior pilot efforts after Superstorm Sandy, federal authorities placed a greater priority upon resiliency and mitigation of climate impacts in their directions to Puerto Rico. It was not enough to repair and rebuild its power system as it was before Hurricane María. rather, the system must be resilient. In another shift to move beyond pure disaster related damage, Congress directed that FEMA funding to restore elements of the power infrastructure that were “either **not damaged by the disaster and/or had pre-existing damages prior to the disaster**, when such work is necessary to fully restore the function of the facility to an approved industry standard.”¹¹

In addition, the Disaster Recovery Reform Act of 2018¹² authorizes FEMA “to fund PA projects to replace and restore disaster-damaged facilities consistent with the latest published editions of relevant, consensus-based codes and standards to ensure that facilities are restored in a manner that allows them **to be resilient**.”¹³ Consequently, PREPA “may propose recovery

¹⁰ Puerto Rico Mitigation Action Plan April 2021, p. 290;

https://cdbg-dr.pr.gov/en/download/cdbg-mit-action-plan-effective-on-april-19th-2021/?ind=1619459603916&file_name=CDBG_MIT_ACTION_PLAN_APPROVED_Apr%2019%202021_EN.pdf&wpdmdl=18594&refresh=60d520fa2b4cf1624580346

¹¹ Letter from David I. Maurstad, Regional Administrator (A) FEMA Region 2, to Senator Charles Schumer (Feb. 8, 2021). *See also* Bipartisan Budget Act of 2018, Pub. L. No. 115-123, § 20601, 132 Stat. 64 (2018).

¹² FAA Reauthorization Act of 2018, Pub. L. No. 115-254, § 1235(b), 132 Stat. 3186 (2018).

¹³ U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-264, PUERTO RICO RECOVERY: FEMA MADE PROGRESS IN APPROVING PROJECTS, BUT SHOULD IDENTIFY AND ASSESS RISKS TO THE RECOVERY 5 (2021).

solutions beyond simply replacing the originally damaged facilities/components as they were pre-disaster,” which permits “PREPA from pursuing and proposing power grid projects that support renewable generation and storage in their recovery solutions.”¹⁴

HUD’s instructions on use of the \$1.9 billion in CDBG-DR are replete with grant conditions on resilience, renewability, and self-sustainability, as seen in the following examples. The Action Plan of Puerto Rico Department of Housing (PRDOH) must identify “how the uses are to be determined to improve the cost-effectiveness, reliability, **resilience**, efficiency, **sustainability**, and long-term financial viability of electrical power systems.”¹⁵

HUD required that grantees of these funds

must describe how the electrical power system improvements will be designed and implemented to address the impacts of climate change, including any **nature-based solutions** and other improvements that will enhance the ability of the grantee to implement **renewable and clean energy** sources and strategies, and align with long-term goals for decarbonizing the electricity sector. Nature based solutions and improvements shall mean natural processes or systems or engineered systems that mimic natural systems and processes that are integrated into investments in electrical power system improvements to **enhance the resilience** of the electrical power system to future disasters.¹⁶(emphasis added).

When evaluating whether funds are eligible for use of improvements to electrical power systems, HUD defined an electrical power system to encompass other sources of power besides central power generation stations, including **distributed energy resources**, and to embrace technologies and services such as **microgrids**.¹⁷

¹⁴ David I. Maurstad, *supra* note 11.

¹⁵ Allocations, Common Application, Waivers, and Alternative Requirements for Community Development Block Grant Disaster Recovery Grantees; Electrical Power Systems in Puerto Rico and the U.S. Virgin Islands, 86 Fed. Reg. 117, 32685 (Jun. 22, 2021).

¹⁶ *Id.* at 32687.

¹⁷ *Id.* at 32692.

Puerto Rico's Policy Aligns with Disaster Resiliency and Renewability Goals

Besides these federal requirements, the spending of the billions of dollars in federal funds allocated for the rebuilding of the electrical grid must comply with local statutes. Two (2) of the most important laws are Act 57-2014,¹⁸ which focus on the transformation and restructuring of the electric power system, and Act 17-2019,¹⁹ which concentrates on Puerto Rico's energy public policy. Both statutes establish as the public policy on electric power that energy costs should be just and reasonable and that the energy system must be safe and reliable.²⁰ Also, Puerto Rico energy policy aligns with the federal decarbonization mandates in the HUD directives, because Act 17-2019 specifically requires the reduction and eventual elimination of electric power generation from fossil fuels, and establishes a Renewable Portfolio Standard in order to achieve a minimum of renewable energy of forty percent (40%) on or before 2025; sixty percent (60%) on or before 2040; and one hundred percent (100%) on or before 2050.²¹

According to Act 57-2014 and Act 17-2019, the electric power company responsible for operating the electrical system in Puerto Rico shall submit to the Puerto Rico Energy Bureau (PREB) an Integrated Resource Plan (IRP).²² The IRP is a twenty (20)-year plan that considers

¹⁸ Puerto Rico Energy Transformation and Relief Act, Act No. 57 of 2014, P.R. LAWS ANN. tit. 22, §§ 1051-1056 (2012 & Supp. 2021).

¹⁹ Puerto Rico Energy Public Policy Act, Act No. 17 of 2019, P.R. LAWS ANN. tit. 22, § 1141 (2012 & Supp. 2021).

²⁰ P.R. LAWS ANN. tit. 22, § 1051; P.R. LAWS ANN. tit. 22, § 1141d.

²¹ P.R. LAWS ANN. tit. 22, § 1141e.

²² P.R. LAWS ANN. tit. 22, § 1051, establishes as the public policy on electric power that the energy costs are just and reasonable, the energy system must be safe and reliable, reduce the dependency on fossil fuel and increase renewable energy. It is important to mention that the official translation in English of this article does not cover all these details explained in the Spanish version.

all reasonable resources to satisfy the demand for electric power services, but prioritizes and promotes the procurement of renewable energy and storage and incorporates the input of civil society.²³ This plan shall be updated every three (3) years and reviewed by the PREB.²⁴ The last update to the IRP was approved on August 24, 2020.²⁵ The electric power service companies and all energy projects and agreements between electric power service companies shall comply with the IRP.²⁶ Therefore, all projects focused on the repair and rebuild of Puerto Rico's electric system, including the projects funded by FEMA and HUD,²⁷ must also comply with the IRP.

Regarding the CDBG-DR funds, PRDOH has until October 20, 2021, to submit to HUD the Action Plan related to the spending of the CDBG-DR funds for the electrical system.²⁸ However, the Puerto Rico Disaster Recovery Action Plan for the use of CDBG-DR funds, approved by the HUD on February 5, 2021, aligns with Puerto Rico's renewable energy, resiliency, sustainability, and cost-effective goals.²⁹ The LEO and civil society should be vigilant about PRDOH's Action Plan and its compliance with federal and local public policies and statutes.

²³ P.R. LAWS ANN. tit. 22, § 1051a; P.R. LAWS ANN. tit. 22, § 1141h.

²⁴ P.R. LAWS ANN. tit. 22, § 1054v; P.R. LAWS ANN. Tit. 22, § 1141h.

²⁵ PUERTO RICO ENERGY BUREAU, CEPR-AP-2018-0001, FINAL RESOLUTION AND ORDER ON THE PUERTO RICO ELECTRIC POWER AUTHORITY'S INTEGRATED RESOURCE PLAN (2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2020/08/AP20180001-IRP-Final-Resolution-and-Order.pdf>.

²⁶ P.R. LAWS ANN. tit. 22, § 1051a, 1054ff, and 1054hh; P.R. LAWS ANN. tit. 22, § 1141j.

²⁷ See 2 C.F.R. § 200.318, 200.403(c) (2021).

²⁸ Electrical Power Systems in Puerto Rico and the U.S. Virgin Islands, 86 Fed. Reg. 117, 32681-32700 (Jun. 22, 2021).

²⁹ GOVERNMENT OF PUERTO RICO, PUERTO RICO DISASTER RECOVERY ACTION PLAN FOR THE USE OF CDBG-DR FUNDS IN RESPONSE TO 2017 HURRICANE IRMA AND MARÍA: ACTION PLAN AMENDMENT FIVE (approved by HUD on February 5, 2021).

PREPA's Plan Is At Odds With Renewability and Resilience Mandates for the Power Grid

Although the rebuilding of Puerto Rico's electric grid must comply with the IRP, the actions taken by PREPA and LUMA, the private company that operates and maintains the electrical system in Puerto Rico,³⁰ are in fact out of compliance with this plan and with local and federal public policy. Instead of submitting to FEMA the IRP for the rebuilding of the power grid, PREPA submitted a 10 Year Infrastructure Plan (10 Year Plan)³¹ that was not reviewed and approved by PREB.³² After learning about the 10 Year Plan through the media, PREB issued a Resolution and Order requiring PREPA to file a true and exact copy of this document.³³ When reviewing the 10 Year Plan, local environmental organizations (LEO) filed an opposition to this plan condemning its infringement on the IRP, local laws, and federal and local public policies.

³⁰ On June 22, 2020, the PREPA and the Puerto Rico Public-Private Partnership Authority (P3A) entered into an agreement for the operation and maintenance of PREPA's Transmission and Distribution System with LUMA Energy, LLC, and LUMA Energy ServCo, LLC (LUMA). According to the contract, LUMA is responsible for almost all electrical system functions, including management, operation, maintenance, repair, restoration and replacement, and other related services for the transmission and distribution system. Also, LUMA will establish policies, programs, and procedures for said services. After a transitional period, on June 1, 2021, the Operation and Management Services Period began.

³¹ PREPA stated that the 10 Year Plan was requested by FEMA and COR3 to be eligible to receive the \$10.7 billion funding, and that it was an "outline of PREPA's proposed investments in Puerto Rico's electric system over the next 10 years." Motion in Compliance with Order entered on December 30, 2020, *IN RE*: Optimization Proceeding of Minigrad Transmission and Distribution Investments, NEPR-MI-2020-0016 (received Dec. 31, 2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2021/01/Motion-in-Compliance-with-Order-Entered-on-December-30-2020-NEPR-MI-2020-0016.pdf>.

³² The 10 Year Plan was originally drafted by PREPA and submitted to FEMA. *See* Resolution and Order, *IN RE*: Review of the Puerto Rico Electric Power Authority's 10-year Infrastructure Plan- December 2020, NEPR-MI-2021-0020 (Jan. 25, 2021), <https://energia.pr.gov/wp-content/uploads/sites/7/2021/01/20210125-MI20210002-RO-10-YR-Plan-1.pdf>.

³³ Resolution and Order, *IN RE*: Optimization Proceeding of Minigrad Transmission and Distribution Investments, NEPR-MI-2020-0016 (Dec. 30, 2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2021/01/20201230-Resolution-and-Order-NEPR-MI-2020-0016.pdf>.

They also denounced the lack of renewable energy projects³⁴ and lack of public input, and the inclusion of new natural gas plants in the 10 Year Plan.³⁵

After analyzing PREPA's 10 Year Plan and arguments and the LEO's contentions, PREB approved an updated 10 Year Plan that complied with neither the IRP, the local law, nor the relevant federal and local public policies.³⁶ Although this updated plan included six (6) renewable energy projects, it is uncertain if it is going to be funded by FEMA. It does not have the dates to be submitted to FEMA nor the estimated cost of each project, and there is no specification on how, when, and where the construction will take place. Also, the most notable projects are three (3) new gas-fired plants and several repairs to fossil fuel plants that will be paid with federal funds.³⁷ Moreover, some of these projects were rejected by PREB in the IRP but were allowed in the updated 10 Year Plan.³⁸ It is clear that this plan does not comply with

³⁴ According to the PREPA, they did not included in the 10 Year Plan renewable energy projects because of FEMA's funding requirements. As we mentioned earlier, the federal fund from FEMA allows new renewable energy projects for the rebuilding of the electrical grid. *See* Motion in Compliance with Order entered on December 30, 2020, *IN RE*: Optimization Proceeding of Minigrd Transmission and Distribution Investments, NEPR-MI-2020-0016 (received Dec. 31, 2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2021/01/Motion-in-Compliance-with-Order-Entered-on-December-30-2020-NEPR-MI-2020-0016.pdf>.

³⁵ Opposition to PREPA's Motion Seeking PREB Approval of 10-Year Infrastructure Plan, *IN RE*: Review of the Puerto Rico Electric Power Authority's 10-year Infrastructure Plan-December 2020, NEPR-MI-2021-0002 (received Mar. 2, 2021), <https://energia.pr.gov/wp-content/uploads/sites/7/2021/03/Opposition-to-PREPAS-Motion-Seeking-Preb-Approval-of-10-Year-Infrastructure-Plan-NEPR-MI-2021-0002.pdf>.

³⁶ Joint Motion Submitting Updated 10-Year Infrastructure Work Plan, *IN RE*: Review of the Puerto Rico Electric Power Authority's 10-year Infrastructure Plan-December 2020, NEPR-MI-2021-0002 (received Jul. 6, 2021), <https://energia.pr.gov/wp-content/uploads/sites/7/2021/07/20210706-Joint-Motion-Submitting-Updated-10-Year-Infrastructure-Work-Plan.pdf>.

³⁷ Final Resolution and Order on the Puerto Rico Electric Power Authority's Integrated Resource Plan, *IN RE*: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, CEPR-AP-2018-0001, at 271, 275-76 (Aug. 24, 2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2020/08/AP20180001-IRP-Final-Resolution-and-Order.pdf>.

³⁸ It is important to point out that the PREB only allowed the utility plan for a gas plant in the San Juan area if renewable and storage prices were higher than expected. PREPA has not demonstrated that this exception happened. Final Resolution and Order on the Puerto Rico Electric Power Authority's Integrated Resource Plan, *IN RE*: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, CEPR-AP-2018-0001, at 11 (Aug. 24, 2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2020/08/AP20180001-IRP-Final-Resolution-and-Order.pdf>.

either Act 17-2019’s goal of 40% of renewable energy in 2025 or President Biden’s public policy on climate change.³⁹ In addition, the updated 10 Year Plan is not a resilient or cost-effective rebuilding of the power grid, as required by FEMA and HUD. Ultimately, the people in Puerto Rico are the ones who will suffer from this bad governmental decision. As of today, Puerto Rico barely generates 3% of renewable energy;⁴⁰ therefore, if the local government does not act immediately, it will not achieve Act 17-2019’s goals.

The Federal Government Responsibility in the Rebuilding of Puerto Rico’s Power Grid

Environmental organizations, nonprofits, and civil society have condemned the updated 10 Year Plan’s lack of a reliable renewable energy and resilience power system,⁴¹ but as yet FEMA and the Biden-Harris Administration have done very little.

FEMA has stated that “the decision of generation platforms lies within the Commonwealth of Puerto Rico and PREPA to determine.”⁴² Although Puerto Rico is responsible for its own recovery, FEMA and HUD have the responsibility to ensure compliance with federal and local public policies and local laws; they must coordinate with the Government of Puerto Rico on the recovery plan, and they have the responsibility to review and approve the projects.⁴³ These statutes and FEMA’s own regulations, as we summarized above, oblige FEMA to ensure through its oversight function that federal funds are spent wisely and achieve the goal of

³⁹ Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

⁴⁰ Keith Rushing, *Why Puerto Rico Needs Solar for a Green Energy Future*, EARTHJUSTICE (Jul. 1, 2021), <https://earthjustice.org/blog/2021-july/puerto-rico-needs-solar-energy-not-fossil-fuels>.

⁴¹ They have also condemned the LUMA contract, which has denounced the several issues with this agreement since its creation to the lack of transparency of LUMA and the vast powers given to LUMA to create public policy.

⁴² Letter from José G. Baquero, Federal Disaster Recovery Coordinator, to Earthjustice (Sept. 24, 2021).

⁴³ U.S. GOV’T ACCOUNTABILITY OFF., GAO-21-264, PUERTO RICO RECOVERY: FEMA MADE PROGRESS IN APPROVING PROJECTS, BUT SHOULD IDENTIFY AND ASSESS RISKS TO THE RECOVERY (2021).

rebuilding a self-reliant, resilient, and renewable power system that will not leave millions of families and thousands of businesses and hospitals without power for extended periods.⁴⁴ Moreover, the PA program mission requires FEMA to “provide assistance so that communities can quickly respond and recover from major disasters or emergencies declared by the President.”⁴⁵ Therefore, FEMA does not have the option not to act. FEMA must approve guidelines and agreements to ensure that the Government of Puerto Rico complies with local and federal public policies and local statutes; it must create a procedure that includes civil society participation in the rebuilding projects; and it must not approve any plan or project that does not comply with federal and local public policies and local laws.

In addition to FEMA funding, there is nearly \$2 billion from HUD to address the electric power system. Both HUD and FEMA require resilience and mitigation in the expenditures, and so these two (2) agencies must more closely coordinate with each other and with Puerto Rico authorities to achieve the common objectives. For example, HUD requires that projects meet a decarbonization goal that is at odds with FEMA’s approval of Puerto Rico’s updated 10 Year Plan that focuses on centralized fossil fuel powered generation plants. Are the projects FEMA will be authorizing Puerto Rico to pursue increasing the burden of Puerto Rico to meet HUD’s decarbonization goal?

The White House can do more than attend meetings with the LEO and acknowledge their letters and petitions; it must act to stop this unfolding tragedy. The agencies such as FEMA and HUD must fulfill President Biden’s mission to provide “low-cost, reliable, and clean electricity

⁴⁴ See 2 C.F.R. §§ 318(a), 403(c) (2021).

⁴⁵ U.S. GOV’T ACCOUNTABILITY OFF., GAO-21-264, PUERTO RICO RECOVERY: FEMA MADE PROGRESS IN APPROVING PROJECTS, BUT SHOULD IDENTIFY AND ASSESS RISKS TO THE RECOVERY 35 (2021).

to Puerto Rico’s businesses and residents,” a mission that “is critical to Puerto Rico’s long-term economic development.”⁴⁶ In addition, these agencies should require that Puerto Rico’s power grid be rebuilt according to federal public policies related to environmental justice, tackling climate change, and shifting to renewable energy.⁴⁷ Consequently, the White House should require FEMA and HUD to be more proactive to ensure compliance with the administration’s policies, and to not approve any plan or project presented by the Government of Puerto Rico for the rebuilding of the power grid that does not comply.

Resilient, Self-reliant, and Cost-effective Renewable Energy System for a Better Economy and the Well-being of the People

The local government proposal to move Puerto Rico’s electrical system from petroleum to natural gas with little renewable energy is not only contributing to climate change, it is also not a resilient, self-reliant, or cost-effective system. Natural gas, as petroleum, is imported, and thus it costs almost three (3) times higher than it costs in the U.S.⁴⁸ and Puerto Rico will have the same or even worse problems that it had with Hurricane María, since LUMA lacks the workforce and knowledge to repair and maintain the power grid.⁴⁹ If a hurricane passes through Puerto

⁴⁶ *The Biden-Harris Plan for Recovery, Renewal and Respect for Puerto Rico*, JOEBIDEN.COM, <https://joebiden.com/the-biden-harris-plan-for-recovery-renewal-and-respect-for-puerto-rico/> (last visited Sept. 26, 2021).

⁴⁷ Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14008, 86 Fed. Reg. 7619 (Jan. 27, 2021); Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, Exec. Order No. 13990, 86 Fed. Reg. 7047 (Jan. 20, 2021).

⁴⁸ Cathy Kunkel, *IEEFA Puerto Rico: Massive liquefied natural gas project dead*, IEEFA.ORG (Nov. 30, 2018), <https://ieefa.org/ieefa-puerto-rico-massive-liquefied-natural-gas-project-dead/>.

⁴⁹ María Luisa Paúl, *Two major power outages in a week fuel fear in Puerto Rico- and memories of Hurricane María*, WASH. POST (Jun. 18, 2021), <https://www.washingtonpost.com/nation/2021/06/18/puerto-rico-power-outages/>; Cristina Corujo, *Puerto Ricans fear blackouts during hurricane season*, ABC NEWS (Jul. 17, 2021), <https://abcnews.go.com/US/puerto-ricans-fear-blackouts-hurricane-season/story?id=78579976>.

Rico, the first vessel with natural gas will arrive in Puerto Rico days or weeks after the storm. In addition, U.S. vessels do not have the capacity to deliver large volumes of U.S. LNG to Puerto Rico.⁵⁰ Another power outage like the one suffered after Hurricane María will be devastating for Puerto Rico's economy and will cause thousands of deaths. Therefore, the Government of Puerto Rico should aim to have a power system that does not depend on imports, especially if it has the opportunity to be energy independent, and should incorporate the latest technology and reliability in its power system.

Also, a centralized energy system will once again leave most of Puerto Rico in the dark, as it did recently with Hurricane Ida in Louisiana, and as has been happening recently in Puerto Rico even when no hurricane has passed through.⁵¹ Hurricane Ida showed us that a centralized natural gas energy system is not resilient, since it left millions of families in the dark, and that is why some civil society leaders want to rebuild a solar power and battery system.⁵² Having microgrids creates a more resilient electrical system, as this approach does not depend on one distribution system for most of the territory. In addition, a pipeline for distributing natural gas will have a huge environmental impact, as LEO and civil society have argued for years.⁵³

Spending billions of dollars on the construction of new natural gas plants and on repairing fossil fuel plants is also unwise, since these infrastructures will be obsolete in the next decades and will be shut down because of their environmental impact and infringement on

⁵⁰ U.S. DEPARTMENT OF ENERGY, ENERGY RESILIENCE SOLUTIONS FOR THE PUERTO RICO GRID FINAL REPORT 25-26 (2018).

⁵¹ María Luisa Paúl, *supra* note 52; Peter Eavis & Ivan Penn, *Why Louisiana's Electric Grid Failed in Hurricane Ida*, N.Y. TIMES (Sept. 17, 2021), <https://www.nytimes.com/2021/09/17/business/energy-environment/hurricane-ida-entergy-power-outage-new-orleans.html>.

⁵² Peter Eavis, *supra* note 52.

⁵³ Lizette Alvarez, *Puerto Rico's Plan for Gas Pipeline Has Many Critics*, N.Y. TIMES (Oct. 21, 2011), <https://www.nytimes.com/2011/10/22/us/puerto-ricos-plan-for-gas-pipeline-has-many-critics.html>.

federal and local climate change public policies and Act 17-2019 and Act 33-2019.⁵⁴ Puerto Rico should aim to be at the forefront when rebuilding its electrical system, and as the world and the United States moves towards renewable energy, the local government should aspire to be the first Caribbean archipelago to have a renewable energy system.

As we take these facts into consideration, it is clear that FEMA funds for the rebuilding of Puerto Rico's power grid will not be spent wisely and in the best interests of the people and the economy of Puerto Rico, if the rebuilding is based on a centralized natural gas energy system. But which power system will help Puerto Rico achieve energy self-sufficiency, resilience, and environmental justice in a cost-effective way? As LEO and civil society organizations have stated, solar energy is the best route for Puerto Rico.

The “average annual GHI (5.89kWh/m²/day) in Puerto Rico is 22% greater than the average US GHI” and “Puerto Rico has a significantly lower per capita electric consumption compared to U.S. (4,665 kWh vs 12,900 kWh per household annually).”⁵⁵ Therefore, “[e]ven if PR consumed electricity at the rate of the U.S., there would still be nearly 150% the amount of rooftop potential than electric consumption for the entire residential electric sector.”⁵⁶

Building a photovoltaic renewable energy system that achieves 75% of Puerto Rico's energy in the next 15 years is affordable.⁵⁷ The organization Queremos Sol drafted a proposal titled *We Want Sun and We Want More: 75% Distributed Renewable Generation in 15 Years in Puerto Rico Is Achievable and Affordable*, which shows that there is no need for new natural gas

⁵⁴ Climate Change Act, Act No. 33 of 2019, P.R. LAWS ANN. tit. 12, §§ 8011-8012 (2014 & Supp. 2020).

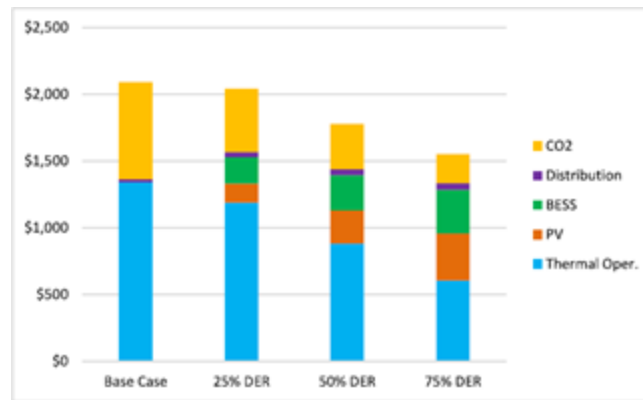
⁵⁵ NATIONAL RENEWABLE ENERGY LABORATORY, PUERTO RICO LOW-TO-MODERATE INCOME ROOFTOP PV AND SOLAR SAVINGS POTENTIAL 12 (2020).

⁵⁶ *Id.*

⁵⁷ Ingrid M Vila Biaggi *et al.*, *We Want Sun and We Want More 75% Distributed Renewable Generation in 15 Years in Puerto Rico Is Achievable and Affordable*, IEEEFA.ORG (Mar. 2021), https://ieefa.org/wp-content/uploads/2021/03/We-Want-Sun-and-We-Want-More_March-2021.pdf.

infrastructure or the conversion of existing plant to gas, since with solar energy and the use of rooftops, Puerto Rico can produce the energy that it needs. But more importantly, this analysis demonstrates that the overall cost of transitioning to solar panels and battery storage systems to achieve 75% of solar energy by 2035 will cost less than PREPA’s budget proposal.

Total System Costs in 2035⁵⁸



As we can see, Puerto Rico can achieve a self-reliant, resilient, and economical power grid using solar energy. This renewable energy proposal should be widely accepted by the federal and local government, especially by the Biden-Harris Administration, which recently “released a blueprint showing how the nation could move toward producing almost half of its electricity from the sun by 2050.”⁵⁹ President Biden is hosting the discussion about climate change at the U.N. and “will urge other countries to sign onto a global goal of reducing methane, the main component of natural gas and an extremely powerful greenhouse gas.”⁶⁰ Therefore, why would

⁵⁸ *Id.* at 16.

⁵⁹ Ivann Penn, From 4% to 45%: Energy Department Lays Out Ambitious Blueprint for Solar Power, N.Y. TIMES (Sept. 8, 2021), <https://www.nytimes.com/2021/09/08/business/energy-environment/biden-solar-energy-climate-change.html>.

⁶⁰ Lisa Friedman, *Biden to host leaders to discuss climate change ahead of a U.N. summit*, N.Y. TIMES (Sept. 15, 2021), <https://www.nytimes.com/2021/09/15/us/politics/biden-climate-change.html>.

the Biden-Harris Administration allow the use of billions of dollars in federal funds to build natural gas plants in Puerto Rico? This should be unacceptable.

Puerto Rico has a prime opportunity to achieve energy independence, environmental justice, and resiliency and contribute to bettering our planet. The federal and local government should work on making possible that, if another hurricane as powerful as Hurricane María hits Puerto Rico, everyone in the archipelago will be as lucky as Casa Sol, and have power and running water immediately after the hurricane thanks to the energy of the sun.

Call to Action

We urge the Congress to take action and exert pressure on FEMA to:

- comply with federal and local public policy and local laws regarding climate change, renewable energy, and the resilient rebuilding of Puerto Rico's power grid;
- approve guidelines and agreements to ensure that the rebuilding of the energy system of Puerto Rico complies with local and federal public policies and local statutes;
- not approve any plan or project for the rebuilding of Puerto Rico's power grid that does not comply with federal and local public policies and local laws,
- require FEMA and HUD to better coordinate on the reconstruction and new construction of electric power systems to ensure coordination toward a common goal, and
- create a procedure in which civil society can actively participate in the energy system rebuilding plan.