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**With \$9.6 billion in available federal funds,
Puerto Rico could provide resiliency to 100% of homes with renewable energy**

Study demonstrates that alternative pathway is more reliable and cost-effective than the Puerto Rican government's plan to spend federal funds on the same vulnerable and polluting system

San Juan, Puerto Rico – One hundred percent of Puerto Rican homes could be more secure and see lower energy costs if the Puerto Rico Electric Power Authority (PREPA) starts investing \$9.6 billion of available federal funds for installing solar panels and batteries in homes and businesses. With these actions, the island could generate 75% of its electricity from clean and reliable sources in 15 years.

That is confirmed by a study released today that modeled the energy proposal “Queremos Sol” (We Want Sun) using data on PREPA’s generation, transmission and distribution systems. The Puerto Rico Distributed Solar Resource Integration Study was coordinated by the organization Cambio PR, in collaboration with the Institute for Energy Economics and Financial Analysis (IEEFA), with experts in energy resource planning and in transmission and distribution system modeling. The modeling was done in consultation with and with the participation of labor, environmental and community organizations that back the Queremos Sol proposal, and with the financial support of Filantropía Puerto Rico.

“This analysis provides new and useful information to guide a radical transformation of the electrical system using the sun and rooftops. The results show that it is possible, beneficial and cost-effective, and that in 15 years, 100% of homes could meet their critical needs with solar and we could generate 75% of our electricity from distributed renewable energy,” stated Ingrid M. Vila Biaggi, engineer, president and co-founder of Cambio. “The study shows that there is no need to use public funds for new fossil fuel projects or conversion of existing plants to natural gas. On the contrary, PREPA should start now with investing \$9.65 billion in available federal funds to install rooftop solar and storage systems,” she added.

The study developed an electrical system model to provide a detailed technical and economic evaluation of a sustainable energy portfolio dramatically different from that which currently exists. The modeling shows the behavior of a grid that integrates a large quantity of distributed renewable energy, prioritizing rooftop solar and storage. This allowed an understanding of the opportunities and the transmission and distribution system operational challenges associated with the integration of distributed renewables and to propose corrective measures.

“PREPA has never modeled the electric distribution system for the entire island in this way,” stated Dr. Agustin Irizarry, project advisor. “This project recreated 89% of the distribution system, including Vieques and Culebra, which permitted modeling the operation of a system that generates the majority of electricity from rooftop solar on homes and businesses,” he explained.

The study’s principal findings include:

- It is possible to provide 100% household resiliency with 2.7 kW rooftop solar and 12.6 kWh battery systems, as well as systems on businesses. This would reduce vulnerability at the level of households and communities;
- It is cost-effective to use \$9.6 billion in federal funds to achieve this plan, which would reduce electrical system costs to below 15 cents/kWh by 2035 (versus 21 cents/kWh in 2019);
- Puerto Rico could reach 75% renewable energy in 15 years and reduce fossil fuel expenditures to only \$430 million a year by 2035 (currently PREPA spends over \$1.4 billion per year);
- There is no need to invest in new fossil fuel power plants or conversion of existing plants to natural gas;
- With modest investments in the distribution system totaling around \$650 million, the grid could support the reliable integration of up to 75% rooftop renewable energy and storage;
- CO₂ emissions would be reduced up to 70%, placing Puerto Rico at the forefront of addressing climate change with urgency;
- It is possible to retire fossil fuel generation, starting with the AES coal plant and followed by the Palo Seco and Aguirre oil-fired plants. The remaining units would be used very few hours of the year, if at all, in the 75% renewable energy scenario. This would reduce dependence on PREPA's vulnerable transmission system;
- Capital investment required by this plan is \$5 billion less than in the Integrated Resource Plan proposed by PREPA, and the proposal would result in a system that saves \$500 million a year relative to the current system.

“The transformation to energy self-sufficiency would allow for stable, lower prices with less investment in transmission and distribution than PREPA has proposed,” said Cathy Kunkel, energy finance analyst with IEEFA. “If PREPA uses federal funds to achieve this plan, the cost of electricity would be reduced below 15 cents/kWh in 15 years. Renewable energy investments would stabilize rates by reducing dependence on volatile fossil fuel prices. In recent years, PREPA has spent over \$1.4 billion a year on imported fuels and this scenario would cut that fuel bill to \$430 million. The federal government allows for funds to be invested in the rebuilding of a clean and renewable grid, as proposed by this modeling,” she emphasized.

However, in its 10-Year Infrastructure Plan, PREPA proposes to spend \$8.4 billion in federal funds for its transmission and distribution systems and an additional \$853 million on natural gas infrastructure. Meanwhile, it earmarks zero dollars in federal funds for renewable energy. In contrast, based on the modeling of the Queremos Sol proposal, \$650 million could be spent on distribution system improvements and \$9 billion could be invested in rooftop distributed energy across the island. An additional \$1.9 billion in federal funds is expected from HUD for the energy sector which could also be used for distributed renewable deployment and storage.

The model evaluated the increasing integration of residential and commercial rooftop systems, with 2.7 kW PV panels and 12.6 kWh battery storage, in scenarios achieving 25%, 50% and 75% renewable energy for the island. “The study achieved and exceeded the objectives outlined by Queremos Sol by showing that Puerto Rico could reach the goal of 75% renewable energy by 2035, including 100% renewable homes,” stated Dr. Irizarry. “It is clear that our proposal could be achieved in a manner that improves the reliability of the system and the stability of the grid,” he commented.

Vila Biaggi added, “This new model is what Puerto Rico needs in the 21st Century. Centralized fossil fuel generation needs to be a thing of the past. This approach ensures that no one is left behind and

that low-income communities can also benefit from renewable energy and reduce their vulnerability. Federal funds should be directed to achieve this end.”

The study’s findings have been presented to PREPA and to the Puerto Rico Energy Bureau. They will be presented to other local and federal government agencies, as well as to non-profit and private sector organizations to promote the adoption of the Queremos Sol proposal as a technically achievable and affordable energy model that would provide real resilience to households and businesses. These efforts will be accompanied by an educational campaign directed at professional organizations, communities and citizens through virtual platforms and social media.

Report link:

[We Want Sun and We Want More](#)—Ingrid M. Vila Biaggi (CAMBIO), Cathy Kunkel (IEEFA), Dr. Agustín Irizarry

Transmission, distribution and cost estimating reports can be found at <https://cambiopr.org/solmastechos/>

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About CAMBIO: CAMBIO promotes sustainable and responsible actions for Puerto Rico through research, design and implementation of policies and strategies that include education, capacity building and community support.