

**Questions from Rep. Sablan** for Professor Agustín Irizarry, Professor of Electrical Engineering, University of Puerto Rico at Mayagüez (UPRM)

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?

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.