

DATE:

TO: Honorable Mayor and City Commissioners

FROM: Tony Cunningham, Interim General Manager

CC: GRU Leadership Team

SUBJECT: Distributed Solar Generation Intake to GRU System

GRU maintains an Energy Delivery Service Guide for customers who are planning, designing or building facilities requiring electric or gas service or making changes to existing service. GRU updated the guide in 2011 to include Section 8, which covers the interconnection of solar photovoltaic (PV) systems to GRU's grid. GRU determined that customers requesting to connect PV generation to GRU's electric feeder lines could not exceed 2 MW. We put this requirement in place to protect the integrity and reliability of the grid for all customers.

As discussion about the 2 MW limit has continued, the Energy Delivery Department revisited the rule and hired consultants in November 2021 to conduct a "solar penetration" study titled, GRU Hosting Capacity Analysis. We reviewed the findings and presented them to the UAB on June 28, 2022. The analysis indicated that some circuits (or feeder lines) can only host 2 MW of solar PV while others can support more than 2 MW. The reasons some feeders could not accept more than 2 MW varied from the impact distributed solar PV would have on the feeder's voltage to issues related to reverse power/current flow and relaying protection scheme limitations. These issues must be mitigated to ensure system resiliency and reliability.

As you know, GRU is a registered NERC Balancing Authority and, as a result, must maintain safe and reliable operations by balancing system energy supply and demand in real time. In 2019, we hired a consultant to conduct a study to determine how much solar would be safe to add to our system and still meet our requirements as a balancing authority. The 2019 Area Control Study estimated a system hosting capacity of between 40 and 75 MW of solar PV generation due to GRU's present dynamic generation capacity/recovery resources and NERC requirements.

GRU must protect the grid's safety, reliability and integrity to comply with state and federal regulations when considering any solar PV intake. Section 8 of GRU's Energy Delivery Service Guide follows utility best practices, the city's Code of Ordinances, and Florida Public Service Commission rules.

To continue complying with these best practices and regulations, we recommend that GRU follow its current guidelines and not exceed 2 MW on feeder lines, with the following exception:

- A customer can pursue adding solar PV, but the customer must pay for an impact study to ensure other customers and GRU equipment will not be negatively impacted. If the impact study indicates that utility distribution system upgrades are required to connect the additional solar PV, the customer must bear the expense of the upgrade.